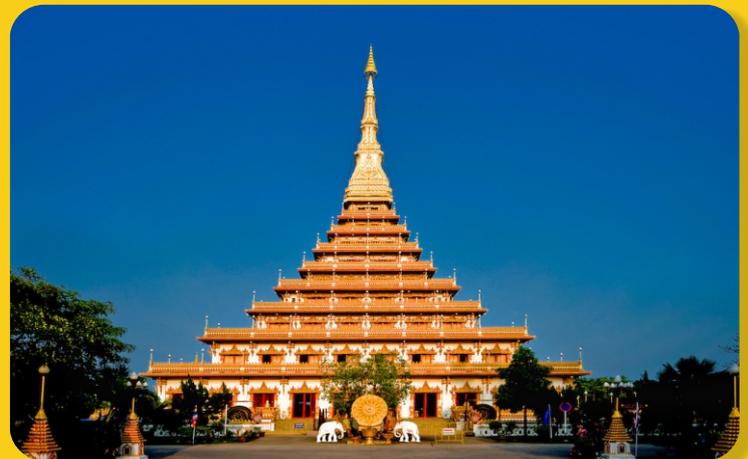




# 9<sup>th</sup> NEU-KKU INTERNATIONAL CONFERENCE



## ON SOCIO-ECONOMIC AND ENVIRONMENTAL ISSUES IN DEVELOPMENT



LABOUR - SOCIAL PUBLISHING HOUSE



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**PART 1: ECONOMIC DEVELOPMENT  
AND INTEGRATION**



# TESTING THE GRAVITY MODEL OF REMITTANCE INFLOWS: THE CASE OF INDONESIA<sup>1</sup>

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## **Abstract**

*As the main source of country's income, total remittance of Indonesia has been rising within the last five years. In this study, the gravity model was applied to find the impact of distance and economic size on remittance. This study would be the first among the existing literatures to use the gravity model to test remittance in Indonesia. Using data of 26 major host countries from 2006-2015, panel data with fixed effect model through Mundlak approach was selected to resolve the problem of time-invariant. This study reveals that distance and economic size of host countries has negative effect on the remittance of Indonesia, whereas improved economic condition in sending country seems to have positive effect. It has also been found that Indonesian migrant stocks, total population, and labor productivity in host countries affects remittance of Indonesia while political stability in the host countries has no effect.*

**Keywords:** gravity model, labor, migration, remittance

## **1. Introduction**

The economic analysis of remittance has attracted much concern in research and policy areas within the last two decades ranging from microeconomics framework of remittance behavior (Funkhouser, 1995) to macroeconomics perspective which explains the economic consequences of remittance (Glytsos, 1999). For developing countries, remittance has been the second largest source of foreign financing after foreign direct investment (FDI) followed by official development assistance, whilst portfolio investment lags behind (World Bank, 2013). Different from other capital inflows and exports, remittance tends to be more stable over time with no obligation imposed in the future, thereby becoming a very attractive source of foreign financing (Lueth and Ruiz-Arranz, 2006). It also plays an important role in buffering economic shocks, such as shocks in trade balances, large swings in capital flows, and natural disasters. According to World Bank in 2013, the remittance inflow to developing countries has been increasing by tenfold during the last decade with 6 percent annual growth on average. However, upsurge in remittance data may be attributed to better recording and shifting from informal to formal channels which lowers the transfer cost of remittance to the home country (Ahmed and Zarzoso, 2014).

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In Indonesia, remittance is an important source of foreign exchange earnings. According to World Bank, Indonesia ranked within the top 10 remittance recipients worldwide in 2015. As noted by Bank Indonesia, the remittance inflow to Indonesia has been gradually rising from USD 6.73 billion in 2011 to USD 9.41 billion in 2015. This rise in remittance was followed by an increase in its contribution to foreign exchange earnings from 6.5% in 2011 to 8.89% in 2015. Therefore, given its importance in providing the country with foreign currency to stimulate the economy, the determinants of remittance need to be better understood in order to advise suitable policies to encourage remittance inflows. So far, there have been few studies concerning the remittance of Indonesia, but these studies have only limited to its patterns and its impacts, such as on household consumption and investment, gender dimension, human capital development of children, and poverty reduction.

Based on the pattern of remittance, the magnitude of remittance at the district level was higher than that at the national level which implied large potential of remittance for local development (Bachtiar, 2011). In relation to household consumption, households receiving remittance spent more on food than what they would have spent without remittance investment (Adams and Cuezuecha, 2010). Since the recipients of remittance were generally poorer households, they were less likely to spend their remittance on investment goods. With respect to gender dimension, even though women migrants earned less than men migrant, they turned out to be better savers and remit a larger share of their earnings than men (Rahman, 2011). It has also been suggested that female recipients of remittance has more power on family decision-making which improves their status in the households. In regard to human capital of the children, remittance increased the school attendance of children but not the performances (Parinduri and Thangavelu, 2011). Overall, remittance has a negative association with poverty even though its magnitude in reducing poverty is small (Nahar and Arshad, 2017).

However, little attention has been paid to find out the determinants of remittance flows from Indonesia's main remittance source countries. Since policy makers are interested in what policies may stimulate remittance and how it moves with other macroeconomic variables, this study seeks to examine the main aspects influencing remittance inflows in Indonesia by considering gravitational factors. More specifically, the economic, geographical, and political determinants of remittance are considered in this study. This study, for the first time, applies a gravity model for remittance using the availability of dataset for bilateral remittance flows in Indonesia. The model replicates the classical gravity model from Newton which is extensively used in various social sciences to estimate certain behaviors that resemble gravitational interaction. The gravity model captures the economic mass and distance as well as institutional aspect of the economic mass to control for simultaneous bias that exists between migrant stock and remittance flows (Tavanxhiu and Agolli, 2015).

This study seeks to answer the main questions in three broad hypotheses: (i) to what extent gravitational factors have been defining the remittance inflows, (ii) to what extent

flows of remittance is associated with and controlled by the number of migrant workers, and (iii) has institution, especially political stability, been playing a role in explaining flows of remittance. In particular, this study contributes at least in three ways with respect to the existing literature. First, this paper uses a gravity model, which is generally applied in trade area, to workers' remittance. Second, the gravity framework allows us to test a new variable as a potential determinant of remittance which depicts the relationship between workers' source and recipient country, namely distance. Third, the availability of bilateral data for Indonesia makes it possible to examine the impact of the economic conditions of the source countries on the Indonesian economy.

The rest of the paper is organized as follows. The second part discusses the methodology of the study including the data and some descriptive statistics. The third part demonstrates the empirical results, which is followed by a discussion and concluding remarks in the fourth section.

## 2. Method

Initially, a gravity model has been developed by Tinbergen (1962) to account for empirical analysis of the bilateral trade. Basically, the classical gravity model describes bilateral trade flows based on Newton's law of gravity. In this context, bilateral trade is an increasing function of the economic size of trading partners (GDP or GNP) and decreasing function of the distance between trading partner's capital which represents transportation cost (Frankel and Rose, 2002).

$$X_{ij} = A \frac{Y_i^{a1} Y_j^{a2}}{D_{ij}^{a3}} \quad (1)$$

$X_{ij}$  is the bilateral trade volume between trading partners which refers to the economic size of trading partners, and  $D_{ij}$  is the geographical distance between corresponding countries.

Similar to the gravity model for trade, our model follows a classical gravity-type foundation that argues that bilateral remittance is positively related to the economic size of the source country and that of receiving country as is measured by GDP, and adversely proportional to the distance between the two countries (Lueth and Ruiz-Arranz, 2006). The further the distance between the two countries, the higher the remitting cost, hence reducing the remittance transferred to the country of origin. Thus, the gravity model of remittance can be formulated as follows.

$$REM_{srt} = A \frac{(GDP_{st} * GDP_{rt})^{a1}}{(Dist_{srt})^{a1}} Z_{srt} \quad (2)$$

In the model, GDP represents income in source (s) and recipient country (r). Indonesia is considered a recipient country and the other 26 source countries are referred to as host countries. Dist refers to the geographic distance between capital of countries s and r, and Z is a set of control variables.

By taking the linear form of the equation (2), we adopt the same specifications as in Lueth and Arranz (2008). Our linearized gravity model for remittance can be expressed below.

$$\ln(REM_{srt}) = a_0 + a_1 \ln(GDP_{st}) + a_2 \ln(GDP_{rt}) + a_3 \ln(DIST_{sr}) + a_4 \ln(MigStock_{srt}) + a_5 \ln(Population_{st}) + a_6 Political_{st} + a_7 \ln(Productivity_{sr}) + \mu_s + \varepsilon_{srt} \quad (3)$$

Using natural logarithms, bilateral remittance flows from the source country  $s$  to the recipient country  $r$  at time  $t$  ( $REM_{srt}$ ) are related to GDP in source and recipient countries, geographical distance, migrant stock, total population, political stability, and labor productivity. The explanatory variables  $GDP_{st}$  and  $GDP_{rt}$  denote the real gross domestic products for the source country ( $s$ ) and the recipient country ( $r$ ) in period  $t$ , and  $DIST_{sr}$  is the geographic distance between the capital city of both countries.  $MigStock_{srt}$  stands for the stock of Indonesian migrant workers in country  $s$  at time  $t$ . The additional regressors  $Z_{srt}$  which account for other control variables include  $Population_{srt}$  as total population living in country  $s$  at time  $t$ ,  $Political_{st}$  is the political situation in source country at time  $t$ , and  $Productivity_{st}$  is the productivity of labor in country  $s$  at time  $t$ . Then,  $\mu_s$  is the country specific effect which controls for unobserved heterogeneity, whereas  $\varepsilon_{srt}$  denotes the error term.

In this study, the remittance data was compiled from 26 major source countries<sup>2</sup> of Indonesian migrant workers spanning from 2006 to 2015 based on the availability of bilateral remittance data. The data of bilateral remittance comes from Bank Indonesia in terms of USD million.

For explanatory factors of remittance flows, we use both country-specific and bilateral variables reported from various sources. The income level measured in term of GDP for both recipient and source countries were retrieved from World Bank in USD billion. According to Vargas-Silva and Huang (2006), higher remittance in the recipient countries is associated with higher GDP in the source countries, since better economic circumstances in the source country will allow the migrants to increase their employment prospects and transfer more remittances regardless of their motivation to remit. Meanwhile, GDP in the recipient country seems to have an ambiguous impact on remittance depending on the nature to remit (Ahmed and Zarzoso, 2014). If the motivation to remit is motivated by portfolio investment, remittance could increase with improved earnings prospect in the recipient country. On the other hand, if the altruistic motivation is dominant, the migrant will send more remittance if the earning prospect of the recipient country declines.

The next gravitational variable is the geographical distance measured from Jakarta, Indonesia's capital, to the corresponding capital of the source country for flying distance based on CEPII database. This variable has been generally used for the proxy of transfer costs. Some studies reported that remittance is inversely related to geographical distance since the further the distance, the more costly the transaction cost implying less incentive to remit through formal channels (Rapoport and Docquier, 2005; Lueth and Ruiz-Arranz, 2006; Frankel, 2011).

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<sup>2</sup> These countries consist of: Australia, Bahrain, Brunei Darussalam, Cyprus, Egypt, France, Germany, Hong Kong, Italy, Japan, Jordan, Kuwait, Macao, Malaysia, Netherland, Oman, Qatar, Saudi Arabia, Singapore, South Africa, South Korea, Spain, Sudan, United Arab Emirates, United States, and United Kingdom

Beyond the standard gravity model, we consider migrant stock of Indonesian workers in the source countries to explain remittance level of the workers (Freund and Spatafora, 2005). The data of migrant's stock were collected from Bank Indonesia in term of thousand people. We predicted that higher stock of migrants would increase the volume of remittance flows since more workers transfer money to home country (Sherpa, 2010).

Total population is also included in the model as one of control variables. We expect that total population has a positive impact on remittance since any increase in population will encourage migration (Greenwood, 2005) which potentially accumulates wage of emigrants and so does the remittance earned by the recipient country. The population data were obtained from World Bank in term of million people.

In regard to institutional aspect in the source counties, we use a proxy of political stability indicator reported in the World Governance Indicators by World Bank. Political instability in the source countries may reflect unfavorable business climate which leads to reduce the opportunity costs to invest money in the host countries and encourage more remittance to recipient country (Lueth and Ruiz-Arranz, 2006).

It has also been argued that labor productivity influenced the transfer remitted to the home country, since it will affect the migrants' choice of workplaces which reflects on their wages. The higher the wages of a migrant worker in a source country, the higher the remittance would be (Sharpe et al, 2000). Data of labor productivity is measured by GDP per person employed and retrieved from ILOSTAT in term of USD.

**Table 1: Descriptive statistics**

<b>Variables and Definitions</b>	<b>Source</b>	<b>Mean</b>	<b>S.D</b>	<b>Min</b>	<b>Max</b>
<b>Dependent Variables</b>					
Remittances (million USD)	Bank Indonesia	67.01	48.19	1	156
<b>Gravity Variables</b>					
GDP of Indonesia (billion USD)	World Bank	787	125	603	988
GDP of source countries (billion USD)	World Bank	1512	3090	13.4	16600
Geographical distance (km)	CEPII Database	7551.28	3838.41	600	14978.57
<b>Other control variables</b>					
Migrant stock (000)	Bank Indonesia	167.55	490.31	0	2902
Population (million)	World Bank	42.6	62.8	0.37	321
Labor productivity (USD)	ILOSTAT	65824.49	31186.53	6870.31	117845.4
Political stability index	World Bank	0.32	0.83	-2.66	1.38

Note: all of the variables are from 2006-2015

### 3. Results

We employed various techniques in our study. First, we estimated the model using a pooled OLS as a benchmark with robust standard error. In order to account for the presence of correlation between the individual effects and error term in pooled OLS, or unobserved heterogeneity bias, a panel data approach with fixed and random effects is also used. We estimated fixed-effects model through the use of dummy variables for each cross-sectional unit to cope with unobserved heterogeneity (Baltagi, 2005). However, this approach has potential limitation since it can eliminate all time-invariant variables in the model. Meanwhile, random-effects model consider the individual effect in the error term (Wooldridge, 2002). Then, Hausman test (1978) is used to select which model is the most suitable one between fixed-effects and random-effects.

Based on Hausman test, fixed-effect model is considered unbiased and consistent, hence it is selected. However, fixed effect estimator does not contain any coefficient of time invariant variables. Then, Mundlak approach (1978) is offered as one solution by including averages of time-varying explanatory variables (Wooldridge, 2002). As a result, the country fixed effects are correlated with the regressors, hence random effects produce biased results.

At the final stage, we undertake several estimation tests to check the quality of our estimated parameters. For multicollinearity, our justification is based on the Variance Inflation Factor (VIF) which measures how much variance of an estimated coefficient in the regression increases (Montgomery, 2001). Since any of the VIF values is less than 5 or 10, it implies that there is no multicollinearity detected in the associated regression coefficients. We also use the Breusch-Pagan test for heteroskedasticity and find out that the residual variance is constant over time. However, the autocorrelation test is not investigated here since cross-sectional dependence is not much of a problem in micro panels with few years and large number of individuals (Baltagi, 2008).

**Table 2: Panel gravity model estimates**

<b>Variables</b>	<b>Pooled OLS</b>	<b>Fixed Effect</b>	<b>Random Effect</b>	<b>Mundlak Approach</b>
Remittance	-67,578* (7,705)	-63,355* (9,767)	-66,882* (7,142)	-82,777* (17,184)
GDP (sending)	0,104* (0,034)	-3,363* (0,852)	0,098*** (0,059)	-3.363* (1.247)
GDP (home)	2,397* (0,281)	2,933* (0,347)	2,409* (0,259)	2.933* (0,605)
Distance	-0,367* (0,077)	0 (omitted)	-0,471* (0,129)	-0,308* (0,115)

<b>Variables</b>	<b>Pooled OLS</b>	<b>Fixed Effect</b>	<b>Random Effect</b>	<b>Mundlak Approach</b>
Migrant stock	0,892* (0,022)	2,586* (0,810)	0, 821* (0, 034)	0,540* (0,075)
Population	0,106* (0,030)	2,804* (1,036)	0, 107** (0, 053)	2,804*** (1,598)
Political Stability	0,024 (0,105)	-0, 091 (0, 216)	0, 014 (0, 151)	-0,091 (0,183)
Labor Productivity	0,162 (0,116)	2,586* (0, 810)	0, 181 (0, 177)	2,586*** (1,566)
Number of Observation	260	260	260	260
R-squared	0,911	0,105	0,907	0,924
Mundlak test	Prob>chi2 = 0,000			

**Note:** \*\*\* p<0,01, \*\*p<0,05,\*p<0,1. Standard errors in parentheses. All the variables are in the form of natural logs.

#### **4. Discussion and Conclusion**

In line with trade studies, our gravity framework is quite powerful and is a good fit in defining remittance flows based on R-squared and F-test. In our specification, the log of remittance is estimated on both GDPs of source and recipient countries, geographical distance, migrant stock, population, political stability, and labor productivity.

Compared to other variables in our model, GDPs of both source and recipient country give the strongest magnitude, implying that remittance is more responsive to economic conditions in Indonesia and the host country. Our result reveals that the GDP of the source country has significantly negative effect on remittance to the country of origin, whereas a larger GDP in the recipient country receives more remittance flows. This finding implies that remittance characteristics in Indonesia is profit driven and motivated by investment considerations, which is principally contrary to the altruistic motive. Our finding supports Lueth and Ruiz-Arranz (2006) that greater economic activities in the source country encourage migrants to save their money in the source country instead of transferring them as remittance. If the economic situations back home improve, Indonesian migrant will send more remittance as shown by one percentage point increase in GDP growth rate is associated with 2.93 percent higher remittance, which makes investment motive of remittance more evident. In relation to this, the emigrants send their remittance for diversification of investments rather than to support their families left behind. This result is also consistent with the finding of Ahmed and Zarzoso (2014). Since our regression results reveal that the decision to remit is driven by investment motive rather than altruistic reason, the perceived usefulness of remittance in poverty alleviation and as a buffer against shock becomes questionable.

Similar to the previous finding (Tavanxhiu and Agolli, 2015), increasing the distance between the countries reduces remittance flows which implies that distance plays an important role as a determinant of remittance inflows. Thus, geographical distance is a good proxy in our model to account for the cost of remitting. This empirical finding calls for policy which focuses on lower transaction cost of transferring money by improving financial development to redirect remittance flows from informal to formal channels since weak financial infrastructure hinders the potential of remittance. Reducing transfer cost of remittance will increase migrants' disposable income and investment in the country of origin (McCracken et al, 2016).

Our result finds out that remittance depend significantly and positively on migrant stock in the source countries. This finding is consistent with Freund and Spatafora (2005) which implies that remittance increases as a result of a gradual rise in migrant stock. With respect to the effect of population, our finding suggests that remittance depend positively on total population in the source countries. This implies that countries with an increasing size of population attract more remittance flows due to more working opportunities provided in the source countries. Our regression result also confirms that labor productivity in the source country encourage more remittance flows. This finding provides important policy implications that the migrant should be facilitated by promoting their skills in order to make them more productive and increase their bargaining power in the source country since high-skilled migrant tends to be more productive and sends more remittance (Schioupu and Siegfried, 2006).

However, political stability does not seem to constitute an important determinant of remittance flows which implies that remittance is less sensitive to political conditions in the source country. Thus, remittance flows to Indonesia respond more to the economic condition rather than the political condition.

In particular, more than 90 percent of the variation in remittance flows can be explained by a few gravity variables such as GDPs of partner countries and home country and geographical distance with a set of explanatory variables (migrant stock, population, labor productivity and political stability) added to our model. However, our regression estimation should be interpreted cautiously since there is a potential endogeneity bias in the analysis. A reverse causality problem may occur if remittance has a positive impact on GDP in a country of origin (Giuliano and Ruiz-Arranz, 2005). In relation to this, some robustness checks should be performed further in order to minimize endogeneity concern while formulating the gravity model for remittance flows.

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# EFFECTS OF REMITTANCES ON ECONOMIC GROWTH IN INDONESIA

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## **Abstract**

*Nowadays, the amounts of remittances in Indonesia have increased dramatically. It is reported that Indonesia received approximately USD9.2 billion of remittances. Remittances refer to money transferred by worker to the home country. Because the significant trend of remittances was sent to migrants' household immensely, many people can fulfil their basic need and resulting to increased their income and quality of life as well. This study tried to analyse the effects of remittances on economic growth in Indonesia by using an Ordinary Least Square (OLS) method during the period 1983 to 2016. The other variables considered include foreign aid, short-term debt and trade openness. The study found that remittance is significantly affecting economic growth as well as the other variables. All variables positively affect economic growth except trade openness which has negative effect on growth. Thus, to increase economic growth effectively, government needs to evaluate the policy regarding remittance inflows by improving financial institution in both Indonesia. Then, educating the migrants and households to manage remittances efficiently, may result on economic growth.*

**Keywords:** *Remittances, Economic growth, Indonesia, OLS.*

## **1. Introduction**

Many Indonesian workers migrate abroad in order to improve their quality of life. Lack of job availability and rise of poverty in Indonesia exemplify the reasons that reveal migration (Balderas & Edward Blackburne, 2013). The data shows that more than 430,000 workers are living at overseas which is equal to 0.4 percent of Indonesian population in 2014 (ILO, 2015).

Malaysia is the most destination country for Indonesian workers with more than 130,000 migrants. While the other countries, such as Taiwan, Saudi Arabia and Hong

Kong are only attracting Indonesian migrants between 83,000 to 35,000 people. The least destination countries are located in South Africa with near to 587 of Indonesian migrants (BNP2TKI, 2015). Thus, because the significant trend of Indonesian migrants was sending abroad immensely, the amount of remittance might increase gradually.

Many workers would send their money to their migrants' household in home country. It is reported that Indonesia received approximately USD9.2 billion of remittances in 2016 which is contributing to 1.1 percent of national GDP (GPFI, 2017). Remittances refer to money transferred by worker to the home country through official channel (Rivera-Batiz, 1987; Jawaid & Raza, 2012). According to Akter (2016), remittances are an important source of external funding for many developing countries. The flows are more stable and countercyclical compare to other private inflows (World Bank, 2008). In addition, remittances are considered as second-largest foreign source of finance after Foreign Direct Investment (FDI) (Asian Development Bank, 1992), though sometimes the number of remittances are greater than FDI flows (Shera & Meyer, 2013). As a result, it is expected that larger size of remittance might significantly affect macroeconomic variables in economy. Hence, understanding the relationship between remittance and economic growth would probably help government to boost up the economic welfare, since there have been limited studies reported on this issue.

There are many studies related to remittances and economic growth all over the world. Shera and Meyer (2013) have examined the impact of remittance to macroeconomic aspects in 21 developing countries. The study found that remittances are positively affecting economic growth, one percent increase in remittance contributed to a 0.14 percent increase in GDP per capita income for Albanian country. However, huge numbers of migrants would be a defining issue for labour markets since high competitiveness would beat the unskilled worker. Then, improving skill is needed to increase the number of high-skilled workers and it might indirectly help government to raise economic growth through remittance inflows.

While Giuliano and Ruiz-Arranz (2009) found that remittances increase economic growth in 100 developing countries, particularly in country which has less developed financial system. Remittances often claimed as an alternative way to solving liquidity problem in financial investment. However, investment is not the only way to promote growth, another channel, such as consumption and investment in the form of education, health and insurance might promote growth as well. In addition, it is interesting yet challenging since many government only focused on how to reduce cost of remittances instead of how to settle economic growth through remittances. The fact that countries which have good financial system in the form of credit markets does not seems to raise the growth very well.

Furthermore, research from Akter (2016) in Bangladesh, found that remittances are an essential element of private capital flow for improving the economic development of Bangladesh. There have been multiplier effects from remittances to any macro-economic indicators. It means that remittances could indirectly reduce poverty, elevate investment and trigger savings. While in Morocco, Tabit and Moussir (2017) found that remittances are

representing economic growth determination, particularly in short term with 35 percent of elasticity. Although, remittances are claimed as steadier and low volatility, those number is quite lower compare to the long term period with about 88 percent. The possible justification might happen due to focusing on consumption purposes instead of investment purposes.

Moreover, in case of Nepal, Sharma (2017) examined about socio-economic problems due to remittances. It has been reported that Nepal remains one of poorest countries over the world, yet Nepal country is becoming one of top countries which received remittances. The role of remittances in economic growth is substantial to be implemented since consumption and GDP growth would affect the most in this case. However, remittances lead to moral hazard, the Dutch diseases<sup>3</sup>, trade deficit due to distribution of imported luxury goods and others. Thus, in order to eliminate the negative effects, evaluating policy is necessary to be done, such as creating meaningful labour force opportunity. In addition, government also need to ensure that Nepalese workers are qualified enough to compete with other workers from outside Nepal country. Another research from Nepal was conducted by Kunwar (2015), this study proposed another policy since there have been socio-economic impacts to this country, particularly due to discrimination aspect. Many workers do not have good skill and low educational background. It even expected that remittances number would be in trouble and considered as low percentage.

Gupta, Pattillo and Wagh (2007) studied the effect of remittances to economic growth in Sub-Saharan Africa from 1995 to 2006. This research showed that the level of remittances effects to economic growth was depending on migrants' household. If the families of worker used more remittances for consumption purposes instead of investment, it would cut off the access of remittances as a means of investment and resulting to not boosting economic growth. However, this study suggested that increasing remittances would be a matter compares to focus on how recipient of remittances used it. Remittances through financial services, such as saving product can stimulate economic growth immensely. Hence, lowering remittances cost might significantly help government to collect as many as remittances, since banks are not interesting to handle small remittances market.

On the other hand, according to Ratha and Mohapatra (2007), even though remittances might increase consumption and do not promote the growth, the number of poverty and inequality would probably reduce due to increased income per capita from remittance flows. In addition, this research also mentioned that skilled worker could reduce growth in home country. Nahar and Arshad (2017) reported that high-skilled workers bring along their family to the destination country. The worker did not remit money since they did not pay attention anymore to people in countries of origin. Although high-skilled worker might reduce growth, indeed by investing remittances of shares in physical and human capital, it would enhance financial development and contributing to increase growth in the future.

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<sup>3</sup> The apparent causal relationship between the increase in the economic development of a specific sector (Krugman, 1987)

## 2. Method

The empirical analysis in this study examines the effects of remittances to the economic growth in Indonesia by considering other variables, such as foreign aid, short-term debt and trade openness. The model can be denoted as follows:

$$GDP_t = \alpha_0 + \alpha_1 LnRMT_t + \alpha_2 FA_t + \alpha_3 SD_t + \alpha_4 TO_t + \varepsilon_t$$

GDP : Economic growth (GDP growth)

RMT : Remittances

FA : Foreign Aid

SD : Short-term Debts

TO : Trade Openness

C : Constant

$\varepsilon$  : Error term

All variables in this model represent percentage data except remittances that need to be transformed into log. Remittances, foreign aid, short-term debts and trade openness are expected to have positive effects. Thus, the expected signs;  $\alpha_1, \alpha_2, \alpha_3$  and  $\alpha_4$  are all positives. The dependent variable is GDP as proxy from economic growth whilst remittances, foreign aid, short-term debts and trade openness are independent variables.

Data in this study were collected from World Bank's reports and the coverage data is from the year of 1983 to 2016 of annually time series data. Hence, there are 33 total of observation. In this study, empirical work based on time series must first be confirmed to be stationary. A test of the stationary can be employed using the unit root test. Afterwards, if the unit root test is already stationary for all variables, OLS can proceed with the condition that all variables have fulfilled the requirement of the OLS properties.

## 3. Results

After proceeding to the regression, it is found that all variables are stationary and satisfy classical assumption test. From Figure 1 and 2, it can be seen that the p value of Obs\*R-Squared are 0.6533 and 0.1087 respectively which is greater than the level of significance (0.05). It can be concluded that there is no autocorrelation and heteroskedasticity problem. Moreover, all of the VIF scores for each auxiliary regression are less than 10. This means that there is no problem of multicollinearity for all independent variables (see figure 3). Hence, the OLS is the proper method for this paper and the result can be seen in table 1.

<i>Breusch-Godfrey Test for autocorrelation</i>			
<i>lag(p)</i>	<i>chi<sup>2</sup></i>	<i>df</i>	<i>Prob &gt; chi<sup>2</sup></i>
<i>1</i>	<i>0.202</i>	<i>1</i>	<i>0.6533</i>

*Do not reject the null hypothesis of no serial correlation*

*Source: Data Processed*

**Figure 1: Auto Correlation Test for OLS**

$$\begin{aligned} \chi^2(1) &= 2.57 \\ \text{Prob} > \chi^2 &= 0.1087 \end{aligned}$$

Source: Data Processed

**Figure 2: Heteroskedasticity Test for OLS**

Variable	VIF	1/VIF
dremitt1	3.36	0.297968
dehort	3.22	0.311023
dnet	1.53	0.654534
TO	1.42	0.705121
Mean VIF	2.38	

Source: Data Processed

**Figure 3: Multicollinearity test for OLS**

**Table 1: Estimation Result of Regression Analysis  
(Dependent Variable is economic growth)**

Linear regression

$$\begin{aligned} \text{Number of obs} &= 32 \\ F(4, 27) &= 13.23 \\ \text{Prob} > F &= 0.0000 \\ \text{Adjusted} &= 0.8109 \\ \text{R-squared} &= 1.7676 \end{aligned}$$

gdpgrowth	Coeff.	Adjusted Std. Err.	t	P> t	[95 Conf. Interval]	
dremitt1	4.523718	2.134036	2.12	0.043	.1450381	8.902398
TO	-.1906955	.0728868	-4.45	0.000	-.2786919	-.1026991
dehort	.8064174	.1810036	4.46	0.000	.4350288	1.177806
dnet	.8614032	.4011953	2.15	0.041	.0382184	1.684588
_cons	15.0223	2.193218	6.85	0.000	10.52219	19.52241

Source: Data Processed (1983-2016)

#### 4. Discussion and Conclusion

The result (table 1) shows that ln RMT has a positive sign and significant at the 5 percent level of significance. A one percent change in remittance will increase economic growth by 4.52 percent. As well as foreign aid and short-term debts, both variables are having positive signs and significant at 5 percent level. According to estimation, one percent change in foreign aid and short-term debts lead to raise economic growth for about 0.86 percent and 0.80 percent respectively. On the other hand, trade openness has a negative sign, which means that one percent increase in trade openness caused a growth reduction of 1.90 percent.

Remittances are mainly seen as a significant mechanism to boost up economic growth. Based on the result, it is shows that remittances tend to promote growth indirectly. According to Nisar and Tufail (2013), increases remittances led to gain income for migrant's household in home country. The increased incomes allow household to increase their

lifestyle in the form of good and services preferences (Snyder & S.Chern, 2008). The more remittances received by household, the more economic status of household is improved. At first, they can fulfil their daily consumption needs. Once the consumption satisfaction is increased, household can pay more attention to the investment purposes, for instance: education and business orientation. Education is better investment for migrant's generations in future which resulting to improve quality of life. Meanwhile, business activity is an additional income that the migrant can earn as backup savings in case of emergency, crisis, or if the migrant returns back to the home country permanently. Thus, remitted fund either for consumption or investment purposes lead to stimulate economic growth in the future.

From researchers' point of views, it is believed that remittances might stimulate economic growth in long-term period by using remittances for consumption activity first and followed by investment purposes. World Bank (2018) pointed out more than 28 million people in Indonesia are suffering due to living below poverty line. It is equivalent to 40 percent of whole Indonesian population. It means that consumption through remittances is more crucial to be solved at that moment compared to using remittances for investment activity. Although, Mohamoud and Formson-lorist (2014) argued that remittances which mostly used for daily consumption rather than productive activity, would affect economic growth directly in short-term period. However, it might be different result for Indonesian cases. No matter what remittance used for, remittances have the potential to become an important tool for improving economic development, particularly in developing countries (World Bank, 2013).

In addition, the result stated that remittances led to raise economic growth in Indonesia for about 4.52 percent. This number is considered as high percentage compared to other countries, such as Pakistan, Korea and Bangladesh which only earn small number of GDP from remittances. In the case of Pakistan, Tahir, Khan, and Shah (2015) reported that most workers remit money due to altruism motives which indirectly contribute to raise economic growth. One percent of remittances lead to increased 0.72 percent of GDP. While in Korea (Jawaid & Raza, 2012) and Bangladesh (Akter, 2016), increase in remittances may lead to raise economic growth for about a 0.080 and a 0.030 percent respectively. The small magnitude of remittances to economic growth might happen in Korea due to some reasons. One of possible reasons is Korea does not provide good policies regarding remittances inflow. Thus, it is advocated that the Korea's government need to form friendly policies and utilize the remittance efficiently.

There is possible explanation regarding high percentage of growth caused by larger remittances inflows. Indonesian government have understood that remittances from migrants is important tool to fight poverty and improve economic development, hence governance has released the new law regarding migrant's protection. The law no 18 year 2017 stated that government obligate to protect migrants through remittances management by involving bank institution and non-bank institution in both Indonesia or destination country (*Presiden Republik Indonesia*, 2017). Surprisingly, before the law of protection of migrant is updated in 2017, the survey from Bank Indonesia in

2009 found that 79 percent of workers remit money via banking institution while the rest via Money Remittance Operator (MRO), particularly Western Union. It means that government just need to maintain the remittances inflow from worker through formal financial institution which result on raise of economic growth as well as poverty reduction (Bank Indonesia, 2009). In addition, government also needs to educate migrants on how to arrange remittances properly. Sometimes, migrants spend much money by ignoring the impact on future, such as did not invest the money to productive activity or consuming without spare the money to saving.

Foreign aid and short-term debts have positive sign and statistically significant to economic growth. According to estimation, one percent change in foreign aid lead to raise economic growth for about 0.86 percent. Ustubici and Irdam (2012) defined foreign aid as one of foreign currency inflows toward a country. Foreign aid might help country to boost up the economic growth (Moreira, 1998). Galiani, Knack, Xu and Zou (2016) stated that one percent increase in the aid might affect economic growth for about 0.35 percent of GDP. However, the significant effects of remittances to the growth depend on some consideration which related to the governance of each country. The aid would effectively stimulate the growth in countries with stronger macroeconomic policy framework and lower corruption (Durbary, Gemmill, & Greenaway, 1998). Although Veiderpass and Andersson (2007) argued that Indonesia would experience less effect to the growth due to remittances, the estimation of this study stated that foreign aid could boost the growth in Indonesia for about 0.86 percent. It means that foreign aid can be successfully used to boost economic growth in Indonesia.

Moreover, this study found that short-term debts contributed to raise economic growth for about 0.80 percent. Short-term debts are considered as government debt that has short maturity date, less than one year (Guin, 2011 as cited in Fosberg, 2012). Mainly, government borrowing was used for investment purposes, such as building infrastructure, increasing education and health services and improving agriculture production (Das, 2016). Investing the external debts to productive factors led to an increase of country's real production and raise on economic growth (Korkmaz, 2015). However, economic growth might occur as long as that country stops to lend more money (Swastika, Dewandaru, & Masih, 2014). Borrowing more debts would probably increase the return due to high interest rate. Government cannot make an effort to return the money and resulting to the worst case, just like Turkey's incident with high debt 85.9 percent of GDP (Mousa & Shawawreh, 2017).

Trade openness is estimated to have a negative sign, which causes a growth reduction of 1.90 percent. Trade openness is defined as the ratio of exports plus imports to GDP (Fujii, 2017) which aimed to determine the effect of trade and capture the openness of the economic on the growth (Meyer and Shera, 2016). However, this study found that trade openness is likely to reduce growth in Indonesia. The possible reason is Indonesia cannot make an effort to send huge export abroad which resulting to reduce the growth. High competitiveness among seller in both Indonesia and overseas, expensive tax, less capital are the reasons that trigger Indonesia do not ready yet to face trade openness. According to Chang, Kaltani and

Loayza (2009), trade openness might successfully affect the growth as long as government fully understands how to respect the rule that enhances the effectiveness of the trade openness' impact on economic growth. Then, larger exports might increase economic growth immensely (Dung, 2004; Berg and Krueger, 2003 as cited by Akoum, 2008).

From the result, it is found that all variables are significantly affecting economic growth though only one variable which has different expected sign, trade openness. Remittances, foreign aid, short-term debts have positive relationship to economic growth while trade openness has negative relationship to economic growth. Since remittances are the main focus variable in this study, more discussion regarding remittances were presented in detail compared to others variables. The finding shows that Indonesia government is full ready to protect migrants since remittances are considered as the main reason for massive economic growth in many countries, particularly in developing countries. Remittances would stimulate growth and has a potential to develop the economy of a poor-country. Migrants, as an agent of change, will send large scale remittances in the form of capital transfer. The larger the amount of remittances received, the more rapid and modern the economic development of worker's origin country in many countries.

Based on this study, it is advocate for educate the migrant worker through standardized the training, such as by providing qualified teacher and trainer, so they can ready enough to compete with other workers from foreign countries. In addition, the most important thing is Indonesian government should have strong policy to protect migrants in abroad, particularly for women and children and building migrants' protection centres in destination countries.

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# **POLICIES TO ATTRACT HUMAN RESOURCES IN MULTINATIONAL CORPORATIONS AND LESSONS LEARNED FOR VIETNAMESE ENTERPRISES IN THE INTEGRATION PERIOD**

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## **Abstract:**

*In the trend of globalization and international economic integration, investing overseas to seek opportunities is an indispensable way to help Vietnamese businesses gain and maintain their positions on both domestic and international markets. However, the integration also means that the risk in the business will increase with the growth of enterprise scale overseas where the business builds head quarter or joint-ventures. In order to overcome these challenges, it is necessary to build a human resource that understands the international law, quickly adapt to the changing global environment and commit heartedly to organization because the struggle between enterprises is competitive in terms of high qualified human resources. The question for Vietnamese enterprises is how to attract a human resource to meet their organizational goals in the global environment. The attraction of human resources should be chosen in a strategic approach to localization or globalization. This research addresses the practice of attracting human resources in some multinational corporations (MNCs) so that Vietnamese enterprises can refer to expanding their production and business activities in the international market.*

**Keywords:** *attracting, recruiting, selecting, multinational corporations (MNCs), policy.*

## **1. Introduction**

MNCs are manufacturing or service companies in at least two or more countries. The human resources of MNCs are often diverse in terms of race, religion, qualification, and culture who could come from the home, the host or the third countries. Attracting human resources is the process of seeking, motivating qualified employees from different sources (internal or external ones) to apply for empty vacancy in order to meet the shortage of human resources of the organization. Thus, attracting human resources is the first step to ensure the principle: right person - right place - right time. To get their global business goals, MNCs have to build suitable workforce by different recruitment and selection policies in different integration stages that help them to be an “ideal” employer.

## **2. Methodology**

The research mainly based on secondary data such as books, articles, and statistical data from reports of consulting organizations. Based on these data, we generalize, analyze and compare to draw the policies to help MNCs get success in recruitment and selection qualified employees. These would help Vietnamese managers find suitable solutions for their circumstances in internationalization process.

## **3. Policies to attract and retain successful human resources in multinational corporation**

In the early stage, MNCs often use localized personnel strategies. Accordingly, they will look for people in the home country to meet the requirements of important positions in the country of investment and train to send them to hold key positions in branches, attract others from the host country, then provide appropriate training for them to save costs and establish good relations with local authorities. When the production and business activities are gradually in the orbit, the head office will delegate the branch leaders to draw employees from labor force in the host country to train and transfer technology in important positions to save money. As MNCs have expanded, they are turning to global strategies, which means they find the human resources in the country with the highest competitive advantage, standardized corporate training, Transfer, promote internationally whenever the business needs. The people who are attracted to this stage are always ready to go for work in different countries and adapt quickly. Regardless of the application of localization or globalization strategies at various stages of the development process, MNCs generally build and commit to the following policies to attract talent in local or international markets to meet the human resource needs of the MNC development process.

*Firstly*, build and maintain a corporate culture, healthy and professional working environment. In a survey released on 7/2014, Glassdoor found that 69% of respondents said they highly appreciated working in a transparent and convenient environment. They value frankly and directly conversations between employees and managers or among colleagues about work, tasks, information, and so on. Many others want to get feedback of their performance evaluation, recognition and motivation timely from managers. That could be seen as a nutritious dose to help them work harder and more effectively. That's why, instead of focusing on yearly evaluations, awarding excellent employees one time per year or quarterly bonus, many employees hope the manager can recognize their performance more often. Being simply a thank or encouragement at work or being rewarded at a weekend meeting is enough for many to feel proud and motivated to give more to the company.

According to Universum's announcement, the World's Most Attractive Employers (WMAE) is based on the percentage of businesses surveyed with 242,000 engineers /students in IT around September 2014 and April 2015 in Australia, Brazil, Canada, China, France, Germany, India, Italy, Japan, Russia, the United Kingdom and the United States gave opinions on where one of the "ideal" companies to make the list of the most attractive recruiters in two separate charts.

**Table 1: Ranking of World's Most Attractive Employers by 2015 [16]**

Business Field		Engineering/IT Field	
Rank	Company	Rank	Company
01	Google	01	Google
02	PWC	02	Microsoft
03	EY	03	Apple
04	Goldman Sachs	04	BMW Group
05	KPMG	05	General Electric
06	Deloitte	06	IBM
07	Apple	07	Intel
08	Microsoft	08	Sony
09	J.P.Morgan	09	Siemens
10	P&G	10	Shell

Google is the most popular company today with over two million applications per year. Flexible working time is not everything. It is important to communicate in a working environment, strong corporate culture, strong leadership, employee's achievement record and growth opportunities. They treat their employees as the most important partner with providing free meals during the day, the best organic food prepared by chefs; creating private space and good services to employees. The leaders always show the respect to their subordinates, give them space to develop their own abilities without being constrained or threatened. Google also creates a dynamic and flexible working environment. It has developed programs that recognize and reward outstanding employees. These lead to create strong corporate culture where everyone wants and promotes internal communications. Google is on the right track in the battle for talent in the world labor market. Recognized by the hiring brand, they have garnered a team of talents for sustainable development in the rigid Silicon Valley.

Ranked second in the IT industry and numbereighth in the business table is Microsoft. The company also established its own corporate culture of values and identity. They put their health care and life-balance issues to the forefront of the services such as: more health insurance for their workers than their peers; regularlyevery six-month eye examination with eyeglass support; regular dental checkups and orthodontic support costs; home health service 24/7. Typically, Microsoft has a policy of maternity leave for both women and men when they have a child. Moreover, the flexible working environment of the company always supports staffs working in other countries and localities in the world. Flex-time job allows employees to work in the best possible state. There are no restrictions on how to dress, employees are free and are encouraged to show their style. Employees at Microsoft also enjoy the privileges and benefits such as free exercise; enjoying food or coffee on the premises of the company; travelling assistance by means of buses and coaches; encouraging employees to join social clubs; getting discounts on the purchase of the company's products; attractive vacation time (15 days paid vacation, 10 sick days paid for medical expense, 10 US law scheduled holiday and 2 days self-paid holiday).

*Secondly*, create and maintain the reputation of the company. Corporate reputation is an abstract concept, but can be shaped by criteria including big size, enormous turnover and continuous improvement; popular brand; always committed to the quality of products and services provided; heightening social responsibility and having a sustainable development orientation in the global environment. Candidates are eager to work in well-known businesses because they know that the opportunity to learn and practice is better, the career path will be wider, the salary/wage and other incentives will be more attractive. Compared to others in the same industry, they will feel proud of their status in society because they prove to the society that they have the work of their own. In order to increase their reputation, companies are not hesitant to spend large amounts on media or social welfare programs, charities and, animal sponsors.

Reputation Institute, a leading international rating agency, surveyed and ranked 100 successful companies in global branding in 2016, with the top 10 brands in the industry as shown in Table 2. This assertion enhances the attractiveness of employers.

**Table 2: The 10 Most Reputable Brands of 2016 by the Reputation Institute [6]**

Rank	Company Name	Head Office Place	Field	Reputation score (per 100 points)
1	<b>Rolex</b>	Switzerland	Watch	78.4
2	Walt Disney	US	Media, TV	78.2
3	Google	US	IT	78.1
4	<b>BMW</b>	Germany	Car	77.9
5	<b>Daimler (Mercedes-Benz)</b>	Germany	Car	77.7
6	<b>Lego Group</b>	Denmark	Toys	77.4
7	Microsoft	US	IT	77.0
8	Canon	Japan	Electronics	76.9
9	Sony	Japan	Electronics	76.7
10	<b>Apple</b>	US	IT	76.6

*Thirdly*, commit to maintaining a balance between work and life. MNCs often focus on some aspects to attract talents such as: paying special attention to the health and well-being of employees; several large companies have a policy to pay for health insurance of the employees' family members; balancing and controlling workload design; choice of convenient location for traffic; providing comfortable and convenient workplace design; giving safe and healthy lunch at work, allocating between work and rest in a scientific way; paying attractive leave incentives help employees rebuild their labor service and return to work with a new spirit and vision.

Google has been in the top six for Fortune 100 companies worldwide. Google has long been a destination for human resources in the field of IT to join. Not only because of its reputation, but also the company has provided its employees with a variety of practical

utilities such as: (1) food and drinks are available to staff through the design of canteen with self- comfortable service; (2) the office are decorated with aesthetic color to make employees feel more and more comfortable. The interior design at Google is rated as youthful and dynamic, similar to the office of Facebook, Twitter in contrast to the solemn and luxurious decor at the office of Microsoft; (3) employees are adequately cared for. Inside the Google workplace, there is a 24-hour gymnasium with state-of-the-art facilities for employees who stay at the office to help them get hours of physical activities after working long timewith computer. In addition, the company also arranges doctors to check for employees when they are tired; (4) employees could relax at any time through the athletic facilities, massages, or prayer rooms; (5) it always finds ways to meet the needs of employees; (6) offers free annual travel to employees; (6) every Friday, holds a staff meeting with management to raise questions and requests; (7) yearly, employees will receive gifts from the company on special occasions. Additionally, the company regularly hosts casual parties for no reason to motivate and encourage employees to work. These are aspects that motivate candidates not to hesitate to race to become Google members.

Facebook has just over 10 years of operation, but the company has become online with more than a billion users and has the second-highest traffic just behind Google. Facebook also attracts human resources by the quality of work and life extremely well. According to a PayScale survey, 93% of Facebook employees are satisfied with their workplace, while Google is only 84%. The level of employee happiness is measured by many factors, but the special thing on Facebook is that they trust their employees. A former Facebook employee shares with The Wall Street Journal that if compared with organized and managerial Google, Facebook puts employees in the environment in which they could develop their strengths, are encouraged to question and criticize managers. Maybe this freedom has helped Facebook develop a collective solidarity. The company also provides a young, dynamic working environment with good compensation policies such as providing free daily staffing, medical benefits and a top-notch pension scheme and even providing Both laundry modes for the staff. Moreover, Facebook's recruiting process is less difficult. That takes an average of 6 months,candidates always evaluate the Google interview process more difficultthan that of Facebook. Jobs in Facebook are less stressful than in Google. Specifically, 11% of Facebook employees think their work is less stressful, while Google employees are 9%.

*Fourthly*, define the clearly career development path for employees. MNCs commit to giving their employees the opportunity to grow through the delivery of training programs, self-portraits, experiments, friction, and a wealth of experience in international environment. In addition, the MNC always identifies "career path" for new employees so they know the path to growth and motivate their potential to achieve personal goals. According to CareerBuilder's survey of the top ten employers in 2015 in Vietnam, found that providing career development opportunities (95.4%) was the most important factor in creating the ideal employer brand.

Unilever always offers a variety of training programs, including the "Trainee Management" program to develop leadership for potential employees. Young employees

who are recruited will have time to learn and experience specific work in departments, in different work environments with the aim of maximizing learning and opportunities to develop them to be future leaders with both talent and virtue. The company always maintains fair values, respects, boldly empowers; welcomes new things, new people; different ideas are factors that help employees associate with the company; commits to find the best way to support the employee's development.

**Table 3: Key factors that make up the ideal employer**

<i>Criteria</i>	<b>Rate (%)</b>
Opportunity for career development	95.4
Diverse working environment without discriminatory	94.0
Attractive salary/wage, bonuses and benefits	92.9
Comfortable working environment	89.5
Ensuring job stability	88.4

*Source: CareerBuilder 2015*

P&G is always interested in selecting talented employees, training and sending them to work abroad, giving them the opportunity to experience the challenges and show their abilities. They are equipped with the knowledge and experience to become steadfast managers in the future. At P&G, young people always have the opportunity to undertake, do the job which they love, develop their own capacity, and cultivate knowledge and experience to grow more on the career path.

*Fifthly*, develop and implement a fair and attractive salary, bonus and benefit policy. According to Watson Wyatt's annual survey of employees' attitudes towards their workplace and employers reflected the views of 12,750 workers at all levels and across all major industries. Some issues at work, including reward work, research results show that honoring and recognizing performance has become an important issue for employees and they need to know their efforts and contribution whether appreciated timely.

Towers Perrin has surveyed 22 major US employers for policies to attract and retain employees. Respondents surveyed in a year are people from the companies with employees ranged from 2,500 to more than 364,000 and revenues ranged from \$ 1.6 billion to \$ 58 billion. The result of this study identified the correlation between stimulus measures through attractive pay and retention of qualified staff.

According to Glassdoor (2015), Facebook usually pays 17% more than the market, while Google pays 10% above the market. An intern at Facebook earns an average of nearly \$ 7,400 monthly, while making Google earn \$ 7,200. Although it is a small difference but also affects the attraction differently.

*Sixthly*, there is a team of talented and enthusiastic leaders. Leaders are the people who give their subordinates the “fire” through their suitable and inspiring leadership style. That could lead to the employees' efforts to accomplish the goal in the best way. Apple, Facebook or Google are successful businesses because of knowing to use suitable and talent leaders. Facebook's CEO Mark got the highest rating from employees, up to 99%,

followed by Google's Larry Page (96%) and CEO Jeff Weiner of LinkedIn (91%). Leaders of Facebook always show the friendly and open leadership style that adds to build the flat culture for Facebook including listening to employees directly, regularly opening meetings with executives and non-executive employees and giving employees the power to make changes and build their ideas.

**Table 4: List of companies paying an average salary to employees above \$ 120,000/year [12]**

Rank	Company	Average Salary (USD)	Evaluation of Employee (points)	Note
1	Juniper Networks	153.624	3.6/5	The world's largest paid technology company with \$153,624 per year. Juniper is now the "land of promise" for employees interested in building equipment and protecting computer networks.
2	Google	153.150	4.4/5	Not lucrative as one of the most attractive technology companies in the world. In addition to the friendly working environment, many of the employees here have a "terrible" income at \$ 153,150.
3	Salesforce	151.512	3.9/5	Salesforce is the dream of many employees who have a dream salary of more than \$ 150,000.
4	Facebook	146.120	4.4/5	Facebook is the world's largest employer of social networking sites favoring its employees to pay them an average salary of \$ 146,120.
5	Broadcom	145.084	3.5/5	Broadcom has an average employee salary of \$ 145,084 - a small number.
...	....	...	...	...
10	Yahoo	137.011	3.5/5	Yahoo's business has been getting worse lately, but employees at the company still have an average salary of \$ 137,011.
11	Microsoft	137.000	3.8/5	Technology giant Microsoft with the main products are Windows operating system, Office applications, Xbox games and other devices. Microsoft is paying its employees an average salary of \$ 137,000.

#### 4. Conclusion and recommendation

Globalization and economic integration makes the labor movement much easier among the countries in the world. That brings both opportunities and challenges for organizations to attract and retain talents. If the attracting policy of Vietnamese businesses is not suitable that will lead to not only lacking of opportunity to have suitable people but also facing the circumstance that talented people will be attracted by other reputable companies. The reality is that Vietnamese MNCs are currently only in the early stages of

international market penetration, setting up business in some overseas markets. In order to attract human resources to meet their business objectives, MNCs in Vietnam should pay attention to the following aspects:

*Firstly*, human resource strategy and plan should be formulated both in the long run, the medium term and the short term in line with the production and business strategy and plan. It should clearly outline the human resources measures: when need, how much, for what position, requirements for job applicants; they come from inside or outside, they have nationality from the home, host or the third country. Based on that, the main responsible department for the attraction (human resources department) has to make planning and budgeting and choosing the most appropriate search and recruiting methods.

Often when beginning to penetrate foreign markets, Vietnam MNCs should appoint senior experienced positions to expand the market and set up a professional system. Candidates should be from internal sources who are managers with participation in previous stages of an international business project such as finding new locations for production or a potential market, knowledgeable about the culture of host country and ready to go on business. Highly qualified technical staff should also be recruited internally or recruited in the host country to train for foreign projects. New entrants are young, energetic, willing to grow and learn, unmarried. For lower-level career positions, businesses should recruit local ones because they do not have the high level of technical skills required so they do not spend too much on on-the-job training. It also promotes good relations with local government and society.

In the business development phase, the company needs more middle management and operational management. The company should select among the excellent, loyal, competent and potential employees in the branch to foster and appoint them. Moreover, it is possible to search for candidates who are from home country studying in the host country after graduation because they are equipped with international qualification and well-grasped with legal, media and language in the host country.

Once the local staff is well-versed in their work, the Vietnamese department heads are repatriated and will be assigned to the head office as agreed before traveling abroad. At the same time, the branch conducts the training and promotion of indigenous talents in replacement of the directors appointed from Vietnam. When global business is in orbit, Vietnam MNC needs to focus on building an international administrator team through global training programs to identify potential leaders. It can take on a significant position in any branch and always overcome the barriers of cultural difference, bridge the headquarters and branches, and be a senior administrator in the future.

*Secondly*, we always attach importance to the development and maintenance of the company's reputation through commitment to the quality of our products, services and the quality of our global after-sales services, to create a resonance for the enterprise, commitment to social responsibility such as labor law-abiding, not polluting the environment. In addition, companies need to convey the message of a leadership team with talent, a professional working style, a well-rounded mind and respect subordinates- this is a powerful weapon that not every business has. Word-of-mouth advertising from employees

to outsiders will be a great attraction for talented applicants to apply for a job because they think it's the best place to be present themselves.

*Thirdly*, it is necessary to build a dedicated human resources department from headquarter to branches/joint ventures with talents, professionalism, dynamism, strategic thinking and internal and external environmental impact analysis to human resource activities. It is important that they are dedicated to the profession. In doing so, they have successfully implemented effective global human resource consulting, service and control roles, helping the company to establish and maintain a human resource meeting organizational goals in a struggling global environment.

*Fourthly*, it is important to have a clear job analysis in order to develop job descriptions (tasks, responsibilities, working conditions) and job specifications (physical and mental requirement) to determine the eligibility selection criteria because only the right people are selected - the right thing to do to retain them, otherwise they will leave the organization to find another ideal destination.

*Fifthly*, build and maintain a compelling policy to promote the "ideal employer" image. Specific business needs to build a professional working environment; invest in improving working conditions; develop and commit to the policy of compensation, competitive and attractive benefits by position, capacity and performance and compliance with labor legislation in the host country; It provides opportunities for training and career development, along with the development of a "clear career path" so that workers can make plans for themselves when starting to work in the company.

*Sixthly*, build a strong and distinctive corporate culture - the foundation for building human resources wholeheartedly for the purpose of the organization. Develop a unified culture from top to bottom across the system, shared values and beliefs, and reflect the commitment to personal development of workers in relation to development the organization's value. Specifically, creating joy and connecting employees to make them feel the business as their home, paying special attention to the health of employees through health insurance and relaxation; Flexible work planning and designing with work-life balance; Establishing a regular dialogue between leaders and employees to identify problems in a timely manner; Promote internal communication to provide timely information to employees on company policies and programs.

*Seventhly*, it is necessary to utilize the power of communication channels to promote the employer's brand to potential candidates. In order to maximize the efficiency and effectiveness of the company's recruiting website, the prestigious recruiting site on the internet to online media channels, combining private communication (on empty vacancies) with general broadcasting about the policies, the success of the business with the attraction of talent in accordance with the source of candidates that enterprises want to search and financial ability to pay for the recruitment.

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# REVIEW 10 YEARS OF AGRICULTURAL EXPORTS WITH SOCIAL ISSUES IN VIETNAM

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## Abstract

*Greatly influenced by Vietnamese governmental policy renewals in the context of renovation and international economic integration, total agricultural exports of Vietnam have been steadily increasing over the past 10 years, reaching US\$ 25.82 billion in 2017, which had a positive impact on the country's socio-economic development. However, most of Vietnam's agricultural export products are in the raw or semi-processed form or packaged under foreign brands with low added value. As a consequence, the farmers still suffer and face difficulty in everyday life because of low returns. Therefore, this paper will assess the actual situation of agricultural exports in Vietnam and propose some solutions in order to increase the added value of agricultural exports of Vietnam, contributing to improve the life standard of Vietnamese farmers.*

**Key words:** Agricultural exports; International economic integration; Social issues.

## 1. Introduction

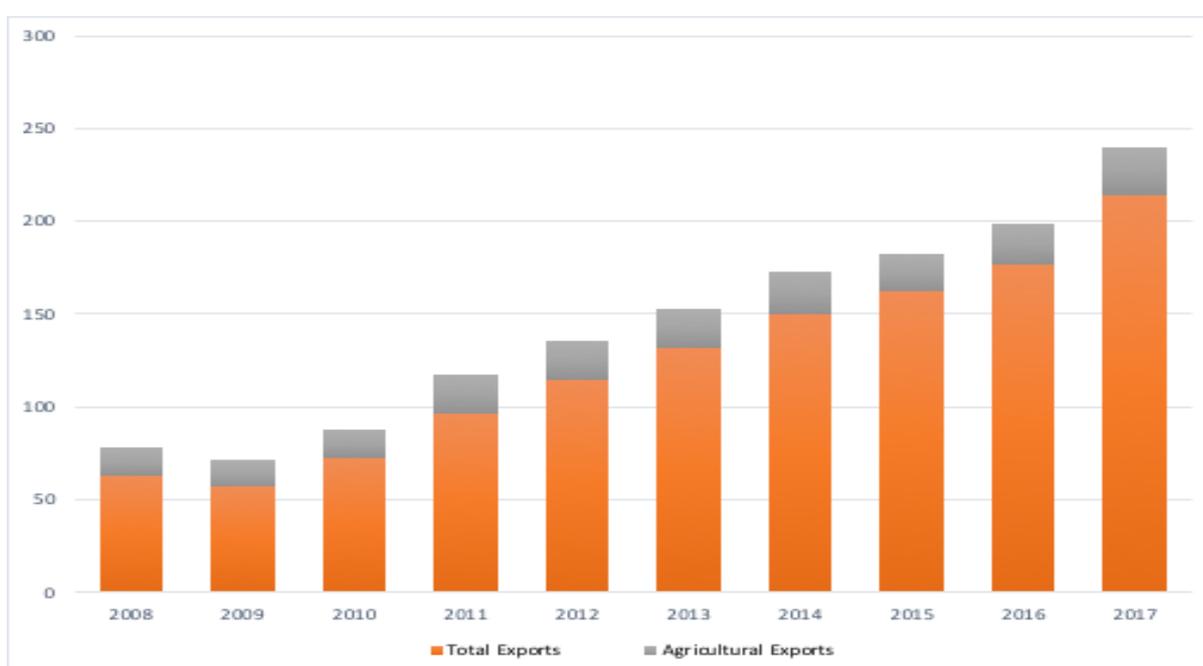
With approximately 64.9% of the Vietnamese population (60.8 million people) currently live in rural areas, accounting for 66.6% of the working age population of the country, and 91% of the poor live in rural areas, agricultural export development associated with social development plays a very important role in contributing to solving unemployment, improving the living standard of especially farmers, and alleviating poverty (General Statistics Office, 2016; World Bank, 2016). In the past 10 years, since Vietnam's accession to the WTO, along with the process of general innovation and international economic integration, the development of agricultural exports has made important contributions to the growth of total exports and contributed to the socio-economic stability of Vietnam. However, the development of agricultural exports of Vietnam is not very sustainable due to many social issues arising from exporting activities such as income and employment opportunities in export industry; increased inequality in export benefits sharing; the gap between the rich and the poor which tends to increase with the trend of trade liberalization, etc. Therefore, in order to harmonize the relationship between the development of agricultural exports and the social issues in Vietnam in the up coming time, the paper will focus on three main issues: (i) Current situation of Vietnam's agricultural exports in the past 10 years; (ii) Assess the relationship between the development of agricultural exports with social issues in the past 10 years; (iii) Conclusions and policy recommendation for the period 2018-2020 and towards 2030.

## 2. Current situation of Vietnam's agricultural exports in the past 10 years

In the past 10 years, the value of Vietnam's agricultural exports has rapidly increased, contributing significantly to the total value of goods exports and economic growth of the country. Export turnover of agricultural products has continuously increased from USD 16.01 billion in 2008 to USD 21.56 billion in 2012 and continued to increase to USD 25.82 billion in 2017 (the highest ever, 1.6 times higher than in 2008). In terms of export share, Vietnam's agricultural exports, although tending to decrease in line with the shift in export structure of Vietnam, still account for 12.06% of total exports of the whole country in 2017 (Figure 1).

**Figure 1: Agricultural Exports of Vietnam 2008-2017\*<sup>4</sup>**

Unit: USD billion



Source: General Statistics Office (2017) and Ministry of Industry and Trade (2018)

Exports of agricultural products are more manifold and diversified, with a number of agricultural products being among the key export items of Vietnam and ranking at a high position in the world market. According to the report by the Ministry of Industry and Trade (2018), in 2017, Vietnam had 29 export products that has value worth over USD 1 billion, including 08 agricultural products, which are seafood accounting for USD 8.32 billion; cashew nuts (USD 3.52 billion); vegetables (USD 3.5 billion); coffee beans (USD 3.24 billion); rice (USD 2.62 billion); rubber (USD 2.25 billion); black pepper (USD 1.12 billion); cassava and cassava products (USD 1.03 billion). Remarkably, vegetables and fruits have the best growth and stability, exceeding the crude oil export turnover for the first time in 2017. Besides, some agricultural products of Vietnam are in higher ranking position in the world market in terms of both volume and value (Table 1).

<sup>4</sup> Only Agriculture products and Fishery Products

**Table 1: Global Rank of some Agricultural Exports of Vietnam**

<b>Products</b>	<b>Ranking in Export Volume</b>	<b>Ranking in Product Value</b>	<b>Ranking in Top 10 Exporting Countries</b>
Cashew nuts (without shell)	1	1	6
Black pepper	1	1	8
Coffee bean (green)	2	2	10
Rice	3	4	10
Rubber	4	4	10
Green tea	5	7	10

*Source: World Bank (2016)*

*The quality of agricultural exports in Vietnam has improved in recent years, but the value added is low.* Up till now, Vietnam has not found any product that can create great value added on the basis of applying high technology and using skilled labor. Most of Vietnamese agricultural products are exported in raw or semi-processed form under foreign brands (accounting for 82.7% of total exports in 2013) (World Bank, 2016). Due to low quality and heterogeneity standard, some agricultural products in Vietnam are ranked high in the world market but have to sell at lower prices than other competitors, including Vietnamese specialty coffee (cappuccino), 25% broken rice, and other substitutes (coffee, white rice or aromatic rice) (World Bank, 2016). Therefore, the value added from export is low and trade is risky because prices of raw agricultural commodity in the world market tend to sharply decrease and frequently fluctuate with high margin, causing financial harm to the farmers in the production process and export of agricultural products.

*Vietnam's export markets are increasingly expanding and changing.* So far, Vietnamese agricultural products have been available in more than 180 countries and territories. Besides traditional markets such as China, ASEAN and Russia, Vietnamese agricultural products are gradually penetrating into the markets with not only high purchasing power but also strict quality control such as the United States, the EU, Japan, Canada, Australia, and New Zealand. China is currently the main import market for Vietnam's agricultural products (mainly raw and semi-processed products such as rubber, cassava, cashew nuts, fresh fruits and vegetables, seafood), accounting for about 20% of total export value of agricultural products of Vietnam. However, the overwhelming reliance on this market always bear the risks of sudden changes in China's import policy. The United States and Japan are the second and third largest import markets for agricultural products in Vietnam. But these are the markets with many complex trade barriers, strict competition, so it is not relatively easy to increase to volume of Vietnamese agricultural products export to this market.

## **2. Assess the development of agricultural exports with social issues in the past 10 years**

*The high growth rate and stability of Vietnamese agricultural exports in recent years have contributed to economic growth, thereby contributing to higher incomes and poverty reduction in Vietnam.* In fact, Vietnamese per capita income has risen from USD 1,064 in 2009 to USD 2,215 in 2016 and is estimated at USD 2,385 in 2017 (more than

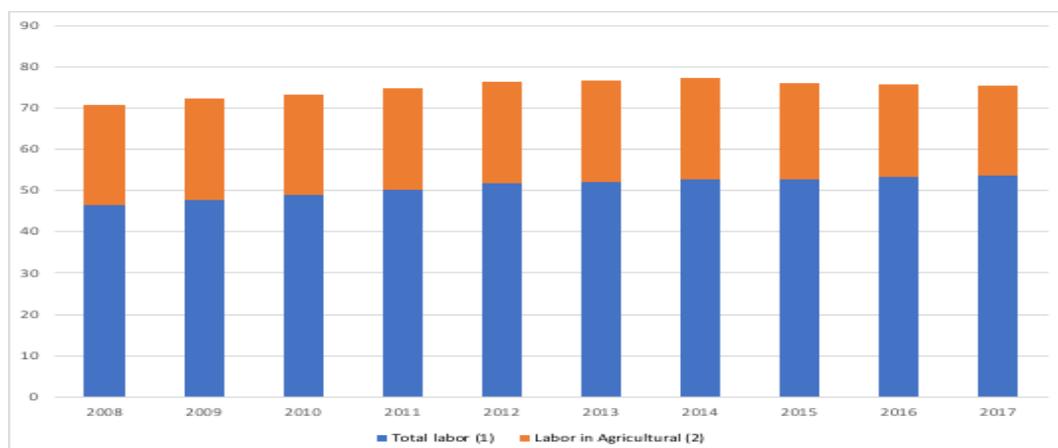
double compared to that of 2009) (General Statistic Office, 2017). As people's incomes have increased, the percentage of poor households has remarkably decreased from 12.1% in 2008, to 11.3% in 2009 and to 9.6% in 2012 (Irish Ministry of Labor, Invalids and Social Affairs, Irish Aid, UNDP, 2015). However, in terms of the multidimensional approach adopted for the period 2016-2020, the poverty rate in Vietnam remains high at around 10% in 2016 and 8% in 2017 (General Statistics Office, 2016, 2017).

*Along with the growth of agricultural exports, economic growth and state support policies, the poverty rate has declined, but the gap between the rich and the poor, inequality in income distribution tend to increase.* The absolute income gap between urban and rural areas tends to show a change in the proportion of urban and rural incomes in the past years, in turn: 2002 (2.3); 2008 (2.1); 2010 (2.0); 2012 (1.9) (World Bank (2017). The income gap of rural residents has also increased, with the per capita income of the 20% richest to the 20% poorest rising from 6 times in 2002 to 8 times in 2012. According to GINI (measuring the income gap between 0 and 1), the GINI coefficient has been reduced from 0.420 in 2002 to 0.385 in 2012 in urban areas. At the same time in rural areas, during the same period, the GINI coefficient has increased from 0.360 to 0.399 (World Bank, 2016). It is worth noting that the poor are distributed nationwide but are concentrated in rural areas (82% of the near poor and 84% of the 40% poorest group in 2014). Ethnic minorities account for 60% of the total number of poor people, and account for a high proportion of the population in the future (World Bank, 2017).

*The expansion of agricultural production and export of Vietnam in recent years have created jobs for people and gradually improved the level of labor.* Along with the restructuring of the rural economy in the direction of increasing the share of the non-agricultural sector, the proportion of workers from age 15 and above working in agricultural sector has declined but still accounts for 40.3% of total labor force of the whole country (21.64 million people) in 2017 (Table 2).

**Table 2: Laborers Working in the Agricultural Sector for the Period 2008-2017(\*)**

*Unit: Million people*



*Note: (\*) Labor from age 15 and above.*

*Source: General Statistics Office (2017); General Statistics Offices, Statistical Yearbook 2010, 2013, 2016*

Vietnam's labor productivity has improved in recent years but remains low. The percentage of trained workers in agriculture is very low, accounting for only 4.1% of the total agricultural labor force in 2016 (Table 3). Specifically, in 2016, up to 84.1% of the total number of labors in rural areas (31.02 million people) either have not been fully trained or their short-term training is not certified. Only about 4% (1.23 million people) have graduate and postgraduate degrees. 11.53 million people (72.1%) out of the total of 15.99 million rural households have not been through any training program (National Agriculture Census Steering Committee, 2017).

**Table 3: Percentage of Trained Workers Aged 15 Years and Above Working in the Farming Sector<sup>5</sup>**

Unit: %

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017*
Whole country	14.8	14.6	15.4	16.6	17.9	18.2	19.9	20.6	21.5
Labour in Agriculture	3.9	2.4	2.7	3.0	3.5	3.6	4.2	4.1	-

Note: (-) n.a

Source: General Statistics Office; General Statistics Offices, Statistical Yearbook 2010, 2013, 2016, 2017

Agro-based export growth is largely based on low labor quality, which is a major obstacle to improving labor productivity and income level. Compared to some countries in the region, despite rapid increase in agricultural productivity in Vietnam, there has been a decline in productivity growth in agro-based industry. As a result, the gap in labor productivity between Vietnam and other countries is rising and the proportion of agricultural labor productivity per capita income in Vietnam is also decreasing at the fastest rate in Asia (Table 4 & Figure 2).

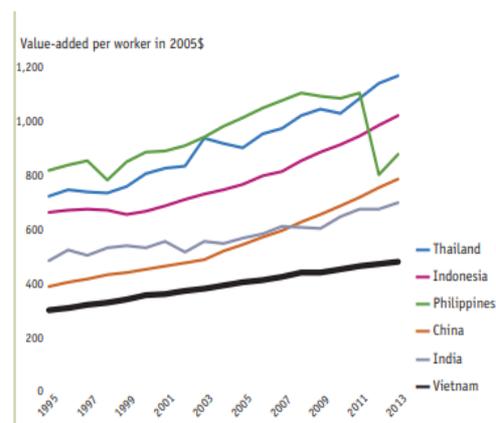
**Table 4: Growth in Agricultural Value-Added per Worker** Unit: %

	1990-1999	2000-2013
Korea	6.6	7.1
Malaysia	0.9	4.5
Bangladesh	2.4	4.0
China	3.5	4.3
Indonesia	0.7	3.2
Thailand	1.9	3.2
Vietnam	2.7	2.5
India	1.8	2.0
Philippines	0.4	0.6

Note: Data in constant 2005 USD

Source: World Bank (2016)

**Figure 2: Agricultural Value-Added per Worker**



<sup>5</sup> Trained employed workers are those who have ever attended and graduated from a school/class/center of technique and qualification training of the educational level or the equivalent level of training belonging to the National Education System for 3 months and over (with degree or certificate of training results).

## **4. Conclusions and some policy recommendations for the period 2018-2020 and towards 2030**

### ***4.1. General conclusion***

Over the past 10 years, since the accession to the WTO and the implementation of FTAs<sup>6</sup>, Vietnam's agricultural exports have been growing fast in terms of both output and turnover, which have contributed significantly to increase income level, reduce poverty and stabilize society in rural areas. Some of Vietnamese key export agricultural products have a large market share and are taking the lead on the world market (shrimp, rice, coffee, cashew nuts, pepper, etc.). However, the export value of agricultural products in Vietnam is still low due to lower product quality and heterogeneous. Most of Vietnamese agricultural products, when exported under foreign brands, only benefit from the lowest level in the global agri-food chain. In addition, the income gap between agricultural and non-agricultural sectors as well as inequality in rural areas has increased. In order to ensure the development of Vietnam's agricultural exports, bringing more value added, while reducing negative social impacts arising in export activities, besides the efforts of the people, enterprises and the state should simultaneously implement policy solutions to address this issue in the coming time, contributing to the successful implementation of socio-economic development strategy 2011-2020 and vision 2030.

### ***4.2. Some policy recommendations***

*Firstly*, the growth of agro-product export should closely relate to the demand for the shift of agricultural products towards improved quality, higher added value, and thus contributing to improve income level of farmers. Accordingly, the government needs to continue reviewing and adjusting the agro-product production process and planning in the direction of forming large-scale agricultural production, which can utilize the competitive advantages and competitiveness of products in each region and in each consumption market. In addition, the government should have specific incentive policies, specifically to form the link between farmers and enterprises in the value chain based on the application of modern technology, branding strategy and have full control over production process to export of agricultural products.

*Secondly*, to increase investment in high technologies and clean technologies from production and processing process to the export of agricultural products in the direction of ensuring the quality and meeting the increasing numbers of requirements of the market, especially in markets like USA, EU and Japan. To do so, the government should have more incentive policies for domestic and foreign-funded enterprises so that they have the inducement to invest in new technologies and clean technologies in the production process and export of agricultural products. Moreover, the government should actively negotiate with other countries and international organizations to sign bilateral and multilateral agreements to expand the market and boost export of agricultural products.

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<sup>6</sup> To date (20 January 2018), Vietnam has passed 10 bilateral and multilateral trade agreements, including ASEAN Free Trade Area (AFTA), five ASEAN+1 FTAs, and FTAs with Japan, South Korea, Chile and the Eurasia Economic Union.

*Thirdly*, the development of agricultural exports is accompanied by the development of high quality human resources in agriculture. The use of advanced technology in agricultural production and export will increase labor productivity, thereby increasing income levels and contributing to reducing the gap between rich and poor between urban and rural areas. In order to achieve this, the government needs to develop a training strategy and formulate a workforce with technical, professional and disciplinary skills that meet the increasing demands of the industrialization and modernization process and international economic integration of Vietnam. It is necessary to continue to renovate and improve the quality and effectiveness of education and training in general, and particularly vocational training for rural laborers. In addition, it is necessary to encourage organizations and enterprises to participate in supporting and training for the labor market.

*Fourthly*, exacerbate the supply of information on agricultural commodity markets and international commitments of Vietnam to the people. In the context of price fluctuations in the world market are unpredictable and Vietnam is actively negotiating, signing and implementing FTAs, if the government can provide sufficient, timely information and forecast on agricultural commodities markets, it will help professional agencies, enterprises and farmers orientate and adjust production and export of agricultural products in accordance with market requirements and reducing risks. In addition, provision of information such as Vietnam's roadmap and commitments on economic integration, along with trade barriers of partner countries, incentives for agriculture and farmers in Vietnam in the coming time will help businesses and farmers understand and learn how to take advantage of these opportunities while minimizing the challenges to boost agricultural exports.

*Fifthly*, the development of agricultural exports goes hand in hand with the development of social welfare systems across the country. Consequently, the government should continue to review, adjust and supplement current social security policies and closely coordinate with other policies to encourage the ability to access to basic social services for people, especially poor farmers, and ethnic minorities in rural areas. In addition, the government needs to mobilize the resources of the entire society and international organizations for social security; encourage and create a favorable environment for the development of a diverse range of social security models based on community participation and supervision in the provision and implementation of humanitarian activities, support and risk sharing for the poor and the disadvantaged.

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# SHIFTING TOWARDS THE CIRCULAR ECONOMY: SOME POLICIES FOR VIETNAM

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## **Abstract**

*The main aim of this article is to analyse the necessity of transiting the Vietnamese economy towards the circular economy. This paper will focus on analyzing the basic concepts of linear economy and its problems, the circular economy and the necessity of transiting the Vietnamese economy towards the circular economy. Expected result: Confirming scientifically the necessity of shifting the Vietnamese economy towards the circular economy and recommending some policies to support this transiting process.*

## **1. Introduction**

The global ecological environment is facing up to the unsustainable socio-economic development and lacking in attention to the management of natural resources and ecosystems. Natural resources are becoming increasingly exhausted, and environmental pollution is getting worse. Many countries have changed their development strategies to wards a clean economy-a circular economy for sustainable development to resolve these challenges. Vietnam is not an exception. As a developing country, Vietnam's economy is maintaining its traditional linear economy, meaning that the growth is still based on broad-based development factors, slowly moving to growth in depth. The production process still consumes a lot of raw materials, energy and discharges a massive amount of waste. The exploitation and utilization of natural resources are not suitable and economical enough which lead to the fact that the environment and ecosystem of many areas are severely polluted.

According to the Vietnamese Ministry of Natural Resources and Environment, raw material costs and average disposal levels of Vietnamese enterprises are much higher than the average level of the regional and all over the world. Besides that, everyday the urban areas in Vietnam discharge nearly 32,000 tons of household waste, while this figure in rural

areas is 12,000 tons(QDND, 2016). It is forecasted that by 2025, the amount of rubbish in Vietnam will be about 100 million tons per year, including the household, industrial, and medical waste. The status of garbage untreated before being discharged into the environment has become an urgent issue in the environmental protection of Vietnamese government.

In the face of the challenges of the natural resources depletion and environmental pollution, the concept of a new economy - the circular economy is receiving the attention and support of many organizations and governments all over the world. This economic model tends to reuse of raw materials, reduce raw material consumption, improve production efficiency and minimize the impact on the environment.

This paper will focus on analyzing the basic concepts of linear economy and its problems, the circular economy and the necessity of transiting the Vietnamese economy towards to the circular economy.

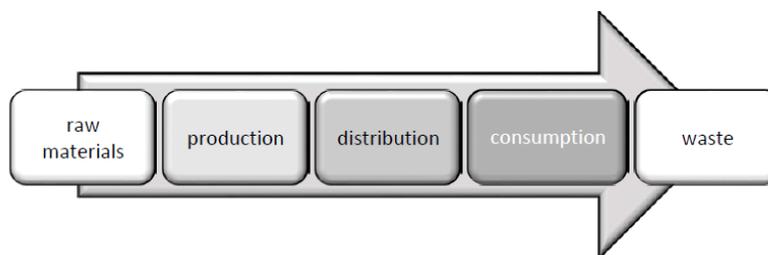
**2. Method:** This paper uses an overall and comprehensive approach to collect and summarize the recent studies and reports which are related to this topic. All the data and figures are obtained based on the secondary data provided by some public organizations like the Vietnamese Ministry of Health and the Ministry of Natural resource and Environment etc.

### **3. Results:**

#### **3.1. Linear economy and its basic problems**

The linear economy model is an economic model that has been widely applied in the early stages of industrialization in most Western developed countries and is also the current dominant model of developing countries. The characteristic of the linear economy concept is that waste, as a side result of the production process, is discarded directly into the environment (Figure 1). The concept is based on the principle: “take, make, consume, discard” and it assumes boundlessness and easy availability of material resources (Drljača, 2015). That is, take the resources you need, make the goods to be sold and make the profit and consume it and discard of everything you do not need – including a product at the end of its lifecycle.

**Figure 1. Phases of linear economy model**



It is undeniable that the linear economy is no longer a tenable model within the limits of our planet. The disadvantages of the linear economy outline the urgency for an alternative model, which can be further interpreted as opportunities for the circular economy. The main problems of a linear economy are found in the lack of solutions for the growing shortage of materials, increased pollution, increased material demand and the growing demand for responsible products. It can be classified into two types of disadvantages of this economic model such as supply risks and the increase of externality.

## Supply risks

In a linear economy, there are uncertainties about material availability because our planet has a limited quantity of materials and this availability depends on several mechanisms. These uncertainties are fueled by an increase in price fluctuations, the critical materials, the interconnection between products and processes.

### *Price volatility*

The variation in materials prices have increased since 2006 and significantly raised average prices. This not only induces problems for producers and buyers of raw materials, but it also causes increasing risks in the market, making investments in material supply less attractive. This can ensure the long-term increase in raw material prices.(Lee et al., 2012)

### *Critical materials*

There are some industries making extensive use of critical materials for their production. These are the metal industry, the computer and electronics industry, electrical equipment industry and the automotive and transport industry. Depending on critical materials will ensure that companies are dependent on fluctuations in material prices, are unable to make predictions, and are less competitive than less material-dependent competitors. (Lacy et al., 2014)

### *Interconnectedness*

Because of the expansion in trade activities, the interconnectedness of commodities has become increasingly sharper. For example water-scarce countries with a surplus of crude oil, trade oil for food, which results in a link between these products in the market. Besides, the production of many products is dependent on water and fuels. Because of this interdependence, scarcity of one raw material would have a widespread impact on prices and availability of more goods. (MacArthur, 2013b), (Lee et al., 2012).

### *Increasing material demand*

Because the growth of population and increases in prosperity, the number of consumers with a higher degree of material consumption will increase by three billion in 2030. The consumption of resources has doubled in the period 1980-2020 and will triple in the period up to 2050 when business-as-usual models are followed. (Macarthur, 2013c), (Fischer-Kowalski et al., 2011).

### *Increase of externalities*

Remaining to follow a linear economy will also induce negative impact such as destruction to ecosystems, the decrease in product lifetime.

### *Degradation of ecosystems*

Following the linear model of ‘take-make-dispose’ will create waste. The production processes will generate large streams of material that are not used but burned or left on a garbage dump. This will eventually lead to an excess of unusable material mountains overloading ecosystems. This ensures that the ecosystem is hampered in

providing essential ecosystem services (such as providing food, building materials and shelter, and the processing of nutrients). (MacArthur, 2013a)

#### *Decreasing lifetime of products*

In recent years, the life of products reduced grammatically. This is one of the driving forces behind the expanding material consumption in the Western countries. The service life of products is still declining, by process of positive feedback: Consumers want new products more quickly and are using their “old” products for a shorter period. This results in a decreased need for quality products that can be used in the long term, which stimulates consumers to buy new products even faster. (Bakker et al., 2014)

### **3.2. Circular economy and practical solutions**

#### **What is circular economy**

There are some points of view to define the circular economy. Some of the authors have provided resource-oriented definitions and interpretations, emphasizing the need to create closed-loops of material flows and diminish the consumption of original resources and its attendant harmful environmental impacts (Sauvé et al., 2016, Preston, 2012). Similarly, there is a scholar who claims that the circular economy “refers mainly to physical and material resource aspects of the economy - it focuses on recycling, limiting and re-using the physical inputs to the economy, and using waste as a resource leading to reducing primary resource consumption”(Zoboli et al., 2014). Another author(Morgan and Mitchell, 2015) goes further and emphasizes the importance in a circular economy of keeping resources in use for as long as possible as well as extracting the maximum value from products and materials through using them for as long as possible and then recovering and reusing them.

In the available literature, there are also several interpretations of the concept that attempt to move beyond the notion of management of material resources and incorporate additional dimensions (Heck, 2006, Su et al., 2013). (Bastein et al., 2013) emphasize the economic dimensions of the circular economy and suggest that this transition “is an essential condition for a resilient industrial system that facilitates new kinds of economic activity, strengthens competitiveness and generates employment”. According to (Ghisellini et al., 2016), the radical reshaping of all processes across the life cycle of products conducted by innovative actors has the potential to not only achieve material or energy recovery but also to improve the entire living and economic model.

One of the most-frequently cited definitions that incorporate elements from various disciplines has been provided by the Ellen MacArthur Foundation which describes the circular economy as “an industrial system that is restorative or regenerative by intention and design. It replaces the ‘end-of-life’ concept with restoration, shifts towards the use of renewable energy, eliminate the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models”. Under this framework, the circular economy aims to keep both types of these materials at their highest utility and value at all times through careful design, management and technological innovation(MacArthur, 2013a). The overall objective is to “enable effective flows of materials, energy, labor, and information so that natural and social capital can be rebuilt” (MacArthur, 2013b).

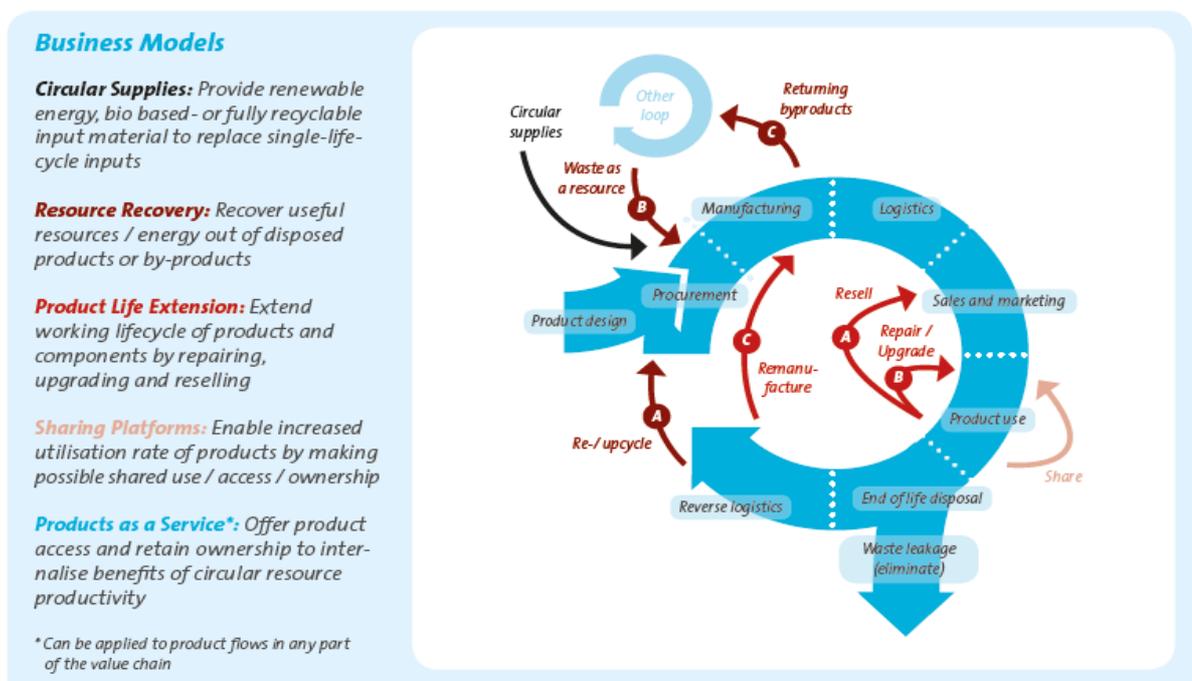
At the EU level, the (EC, 2015) has included a description of the concept in its Communication “Closing the loop - An EU Action Plan for the circular economy”. Specifically, the circular economy is described as an economy “where the value of products, materials, and resources is maintained in the economy for as long as possible, and the generation of waste minimized”. The transition to a more circular economy would make “an essential contribution to the EU’s efforts to develop a sustainable, low carbon, resource efficient and competitive economy”.

Based on these schools of thought above, it can be summarised that *a circular economy is an economic system where products and services are traded in closed loops or ‘cycles’*. This economic system is characterized as an economy which is regenerative by design, with the aim at low environmental impact and to maintain as much value as possible of products, parts and materials. This means that the aim should be to create a system that allows for the long life, optimal reuse, refurbishment, remanufacturing and recycling of products and materials.

### Circular solutions-Five business models driving the circular economy

According to the report, Circular Advantage, by the National Zero Waste Council Circular Economy Working Group in 2014(Accenture, 2014), there are currently five types of circular business models (see figure 2) such as Circular Suppliers, Resource Recovery, Product life Extension, Sharing platforms and Products as a Services. These types are identified in its analysis of more than 120 case studies of companies that are generating resource productivity improvements in innovative ways.

**Figure 2. The five business models of circular economy**



Source: Accenture, “Circular Advantage: Innovative Business Models and Technologies to Create Value in a World without Limits to Growth,” 2014. Design adjustments of graphs by Elmar Sander and Katharina Olma.

### ***3.3. The necessity of transiting towards circular economy in Vietnam***

During the 20th Century, the notation of closed-loop production was very popular in Vietnam, especially in the agricultural sector. At that time, there was a prevalent farming model named Vườn (Garden) - Ao (Pond) - Chuồng (Cage) which used waste from one activity as input for another one. For instance, organic garbage from growing vegetables, such as damaged vegetables, old leaves, etc., was used as animal food for fish in a pond or for poultry and livestock living in an enclosure (cage). However, in recent years, the production models which are environmentally friendly like the V-A-C have not received attention from most of the enterprises. As a replacement for these models, the use of chemicals (fertilisers, pesticides) and the application of automatic farming machines have not only broken the natural circle of materials but also generated more waste, even toxic waste, often released into the environment (Hoa, 2016).

#### **Environmental aspect**

Waste generated by industrial activities and urbanisation is one of the most serious environmental issues in Vietnam. Vietnam has been called as one of the top ten countries in the world with the worst air pollution since 2012 (EPI, 2012). On 6 October 2016, Hanoi - Vietnam's capital - was ranked the second worst city in the world regarding urban air pollution (Saigoneer, 2016). According to the Report on the state of the national environment in Vietnam in 2016, every year, Vietnam "uses" more than 100,000 tons of plant protection chemicals; generates over 23 million tons of household waste. Besides that, more than 7 million tons of industrial solid waste and over 630,000 tons of hazardous wastes are released each year, while there is a little amount of waste and wastewater treated before disposing to the environment.

Notably, there are 615 industrial zones, of which only about 5% have concentrated wastewater treatment systems. There are more than 500,000 manufacturing establishments; over 5,000 mining enterprises and about 4,500 craft villages, many of them using old technology which causes the pollution for the environment. Every day, more than 13,500 medical centres generate about 47 tons of hazardous waste and 125,000 m<sup>3</sup> of medical wastewater. Besides that, Vietnam currently has 787 municipalities releasing 3,000,000 m<sup>3</sup> of wastewater per day, but most of them have not been processed, and nearly 43 million motorcycles and over 2 million cars are operating. There are 458 landfill sites, of which 337 landfills do not ensure the hygienic standard and more than 100 small-scale domestic waste incinerators, which are in danger of generating dioxin, furan (OpendataVietnam). The conversion of forest land, mineral exploitation, hydropower construction, and exploitation of biodiversity resources have led to the narrowing area of natural ecosystems, the fragmentation of habitats and the decline of biodiversity.

#### **Human health aspect**

As a consequence, the number of people who are suffering from cancer, acute and chronic respiratory diseases and allergic reactions in some big cities of Vietnam is rising. According to a study in 2013 of the Hanoi-based Central Lung Hospital, 95% of patients

experience chronic obstructive pulmonary disease because of living in a polluted environment. Another 2013 study by the Vietnam Ministry of Health noted that of every 100,000 people, 4,100 or 4.1% have lung diseases; 3,800 contract inflammation of the throat and tonsils; and 3,100 have bronchitis, all of these diseases have certain relation to the environment pollutions. The most worrisome problem is that people of working age are those most often affected by air pollution (Vietnamnet, 2013).

### **Understanding of Vietnamese SME's about circular economy**

In June 2016 the Centre for Creativity and Sustainability Study and Consultancy (CCS), a spin-off of the EU-funded SWITCH-Asia project “Sustainable Product Innovation,” researched with 152 Vietnamese SMEs operating in a variety of sectors. 78.8% of surveyed enterprises said that they do not have any idea about the concept of circular economy. Only 13.3% of the surveyed company had some knowledge related to the circular economy like sustainable production and consumption, cleaner production, cradle to cradle and resource efficiency. The practice of Vietnamese SMEs towards applying these concepts in business is still insufficient. According to another report produced in 2014 by the Vietnam Environment Administration, only 0.1% (around 200 out of 200 000) of the company all over Vietnam have been applying cleaner production technology in their factories (VEA, 2014). Based on these facts, the demand for transiting Vietnamese economy towards a circular economy is more urgent than ever.

### **4. Discussion and Conclusion**

The circular economy model has been widely applied in many European countries and other developed countries in the world today. The benefit that this economic model can contribute to each county not only in economic sector but also in advancing the quality of the environment and protecting the diversity of the ecosystem. Based on the analyzes of the current state of the environment in Vietnam by the effects of traditional linear economic models above, it can be argued that the need to shift towards linear models is essential for Vietnam.

In recent years, the Vietnamese Government also has been aware of the negative impacts of the linear economic model on the ecosystem, and on human health, so there have been many policies and measures applied to protect the environment and develop socio-economy. However, to date, the principles of the circular economy are relatively new in Vietnam, and the government-level activities in supporting businesses to move towards a circular economy only stop at specialized conferences. So the Government need to build an action plan for the circular economy with the specific objectives to orient the economy towards sustainable development.

Besides that, to take advantage efficiently the circular economy concept and learn from the pioneering enterprises, the Vietnamese firms should consider the whole value chain to find possibilities for innovating their business models. Capacity building, an increase in productivity and especially the promotion towards factory workers and stakeholders along the value chain (upstream to downstream) are also necessary for

companies to apply a circular economy approach successfully in the longer term. Finally, a strong commitment to these long-term sustainable strategies is essential to ensure the development of circular economy business models and to convince investors to invest in new circular economy ideas.

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# OFFICIAL DEVELOPMENT ASSISTANCE FOR MIDDLE-INCOME COUNTRIES: THE CASE OF VIETNAM

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## **Abstract**

*Since the reconnection with international financial institutions in 1993, Vietnam has swiftly become one of the main ODA recipients from the international sponsors. ODA has significantly contributed to infrastructure construction, poverty reduction, institutional reforms, economic growth and socio-economic development. This paper examines the main features of ODA in Vietnam during the period 1993-2015, points out some new characteristics of the ODA flows in the middle-income status. It found that the total committed ODA and the level of favor have decreased sharply. The relationship between Vietnam and international donors has changed from “assistance” to “partners” relationship. However, the role of international non-governmental organizations in providing ODA is expected to increase. To pave the way for ODA graduation, Vietnamese government should encourage the oversight mechanism for civil society to monitor and supervise ODA projects, speed up the ODA disbursed rate and enhance the development of private sector.*

**Keywords:** ODA, middle-income, Vietnam, aid effectiveness.

## **1. Introduction**

Official development assistance (ODA) is defined as government aid designed to promote the economic development and welfare of developing countries. ODA can be provided bilaterally, from donor to recipient, or channeled through a multilateral development agency such as the United Nations, the World Bank or the Asia Development Bank. ODA includes grants, "soft" loans (where the grant element is at least 25% of the total) and the provision of technical assistance (OECD, 2017b).

ODA is the aid only for low-income countries and developing economies. According to the classification of the World Bank, low-income economies are defined as those with a GNI per capita of 1025 USD or less; lower middle-income economies are those with a GNI per capita between 1026 USD and 4035 USD; upper middle-income economies are those with a GNI per capita between 4036 USD and 12475 USD (WB, 2017). So, only aid to these countries counts as ODA. By the end of 2015, there are over 150 countries or territories with per capita incomes below USD 12 475 received support from international sponsors. In which, Vietnam, a lower middle-income country with GNI

per capita in 2015 of 1990 USD (WB, 2016), ranked as the fifth largest ODA recipient in terms of disbursed ODA, only lower than Afghanistan, India, Ethiopia and Syrian Arab Republic (OECD, 2017a).

In Vietnam, after 30 years of the Renovation, the country has made great achievements in economic and social development. Besides inner efforts, the official development assistance from the international community has played a crucial role for helping Vietnam to maintain the stability of the macroeconomic as well as to ensure social security. Accumulated to the end of 2015, with approximately 95 billion USD committed capital, 72 billion USD signed capital and 53 billion USD of disbursed capital; ODA has become an important source for the development of Vietnamese economy (GSO, 2017). Since 2010, Vietnam has become the middle-income country (MIC) with the average GNI per capita in 2010 of 1168 USD (WB, 2016). It has led to an immense change in aid policies for Vietnam. The scope, structure, and conditions of providing ODA for Vietnam have become stricter. Many donors have announced to cut down or stop offering preferential ODA program for Vietnam. England, Norway, Sweden have decided to stop preferential ODA for Vietnam since 2016, followed by the World Bank in 2017 and the Asia Development Bank in 2019 (FIA, 2016). This article aims to analyze the role of ODA in Vietnam in the period 1993-2015, and suggest the roadmap for ODA graduation for Vietnam in terms of the middle-income country.

## **2. Overview about ODA in Vietnam**

After a long time as a planned economy, Vietnam was one of the poorest countries worldwide, with GDP per capita in 1990 of fewer than 100 USD (WB, 2012). In the early 1990s, Vietnam experienced serious difficulties: hyperinflation, famine, sharp decline in Soviet aid, and a trade embargo by the western countries. However, between 1990 and 2010, Vietnam's economy experienced dramatic growth, with an average GDP growth rate of 7.3% annually, and the income per capita was almost fivefold. Since 2010, Vietnam has entered the MIC group, become a lower middle-income country with GNI per capita in 2010 of nearly 1200 USD (WB, 2016). The rapid expansion of the economy has been accompanied by high level of growth of international trade; large-scale inflows of FDI; and a dramatic reduction in poverty. Vietnam's transition from an extremely poor country to a middle-income country in less than 20 years was a successful story worldwide. One of the main reasons for the fairy tale, besides inner efforts, has been the great support from international donors. In 1993, Vietnam restarted relationships with the multilateral sponsors (the Asia Development Bank, the IMF and the World Bank) and bilateral donors, giving it access to large-scale of international aid. Since then, aid from international donors has played an important role for the development of Vietnam's economy. ODA has been an important channel of infrastructure, technical assistance and knowledge transfer, as well as a significant source for economic growth, accounting for 12-14% of the total state budget investment (UNDP, 2010).

In the period 1993-2000, the total ODA committed, signed and disbursed were 17.68 billion USD, 13.86 billion USD and 8.02 billion USD respectively. The average amount of disbursed fund was around 1 billion USD annually, accounting for only 45.4%

of total ODA commitment in the period. In the positive sign, the disbursed rate steadily increased at a high pace, from 24% in 1993 to 75% in 2000. ODA in this period was at a high level of favor, with almost half (49%) of the loans had interest rates lower than 1% annually and a maturity of at least 30 years, of which 10-year grace period. Another third of the loans was with the annual rate of interest between 1% and 2.5% annually (Le Q.H., 2007). In this period, most of ODA funds were invested in transportation (26%), electricity generation and transmission (20.3%) and agriculture (14.9%). The main donors in this period were Japan, the World Bank and the Asia Development Bank, which together comprised for nearly 79% of total committed ODA. However, the average size of an ODA project was small, stood at 13.51 million USD per project.

In the period 2001-2010, the total ODA committed, signed and disbursed were 46.64 billion USD, 31.88 billion USD and 21.74 billion USD respectively. The ODA committed and disbursed were 2.65 times and 2.71 times higher compared to 1993-2000 period. The average size of an ODA project was almost two times higher, reached 27.82 million USD per project. Notably, despite the international financial crisis in 2007-2008, the ODA commitment for Vietnam steadily increased over the period and reached the top of 8.0 billion USD in 2009, led Vietnam in the Top 5 recipients of ODA worldwide over the period (OECD, 2017a). Most ODA funds still invested in transportation with a wide range of projects such as Hanoi City Ring Road No. 3 Construction Project (245.27 million USD), sewage treatment facilities for Hue City project (182.48 million USD), North-South Expressway Construction Project Ho Chi Minh - Dau Giay section (145.43 million USD) (JICA, 2013). However, international donors paid more attention to agriculture and regional development with some key projects namely Infrastructure development in small and medium urban area in Central area (53.20 million USD), Rural development for Central area (91.3 million USD), Business development for the poor in Cao Bang and Ben Tre (411.86 million USD), Electricity for rural areas in Vietnam (150 million USD), Transportation for rural areas period III (131.65 million USD). Notably, the level of favor decreased sharply over the period. In detail, the non-refundable ODA comprised for just 7% of total ODA commitment, compared to 20% in 1993-2000 period.

**Table 1. ODA in Vietnam in the period 1993-2015**

*Unit: mil. USD*

<b>Period</b>	<b>Committed ODA</b>	<b>Signed ODA</b>	<b>Disbursed ODA</b>	<b>Value per project</b>
1993-2000	17677.5	13866	8017	13.51
2001-2010	46645.5	31886.6	21747	27.82
2011-2015	30988	26716	23625	49.28
Total	95311	7268.6	53389	32.52

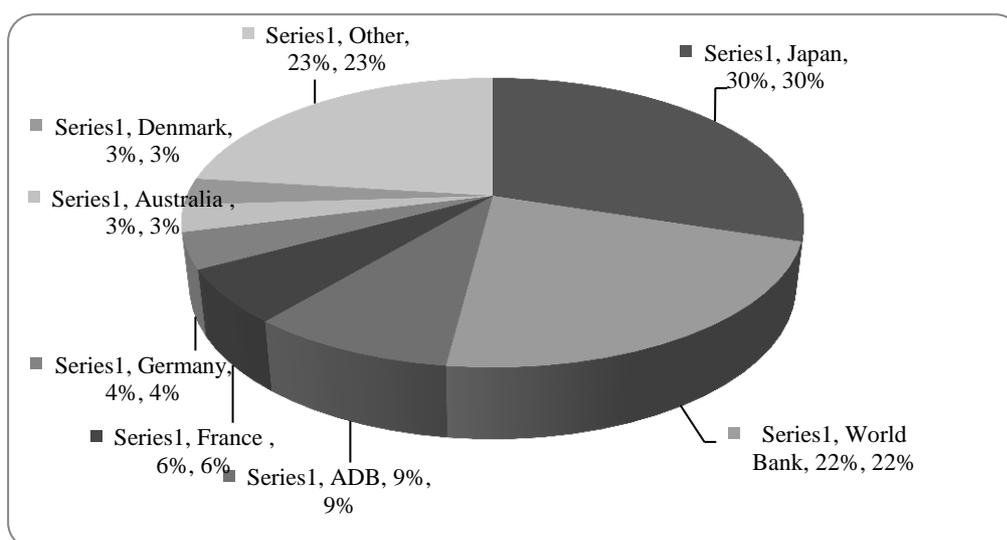
*Source: General Statistics Office of Vietnam, Statistical database, <http://gso.gov.vn>.*

In the period 2011-2015, Vietnam continued in the Top 5 of ODA recipients worldwide. The ODA committed, signed and disbursed were 30.99 billion USD, 26.72 billion USD and 23.63 billion USD respectively. Notably, the disbursed ODA over the

period increased steadily, reached 4.73 billion annually on average, or 88.4% of total signed ODA in the same period. However, ODA loan conditions have become stricter. The non-refundable ODA comprised for 3.6% of total ODA commitment over the period, nearly two times lower compared to 2001-2010 period. With the middle-income status, Vietnam has had to access with new types of loans, instead of concessional ODA. In detail, Vietnam is expected to graduate from World Bank's IDA assistance in July 2017, and new ODA from World Bank will come from IBRD, with much less favorable. ADB has decided to stop ADF (Asian Development Fund) for Vietnam after 2019, and Vietnam has to access OCR (Ordinary Capital Resources), with higher interest rate and less of grace period.

Regarding to ODA by donors, up to the end of 2015, Vietnam has had a large donor community with 28 bilateral and 23 multilateral donors; Vietnam also has cooperated with 300 Non-governmental organizations, which mainly focused on humanitarian, emergency aid and development assistance projects, with financial aid of around 200 million USD annually (Le, T., et al., 2004) In terms of bilateral aids, Japan is the most important ODA donor for Vietnam. Assistance provided by Japan reached nearly 28.6 billion USD (end of 2015), comprised for 30% of total ODA commitment, followed by France (6%), Germany (4%), Australia (3%) and Denmark (3%). As for grant aid, Japan, Australia and the USA are the Top 3 donors. For technical assistance, Japan, Germany and Australia claim the largest share. In terms of multilateral donors, the World Bank is the most important sponsors with 20.5 billion USD committed for Vietnam (by the end of 2015), comprised for 22% of total ODA commitment, followed by the Asia Development Bank (9%). Notably, several harmonization initiatives have taken place in Vietnam, such as: The Six Bank Group (WB, ADB, JICA, French Development Agency (AFD), German Development Bank (KfW) and Export- Import bank of Korea (KEXIM)), the LMDG Group (Like Minded Donor Group) and the United Nations Development Group (UNDG). These groups aim to establish the legal framework to manage the funds for ODA projects, harmonize the procedures, and improve the aid effectiveness in Vietnam.

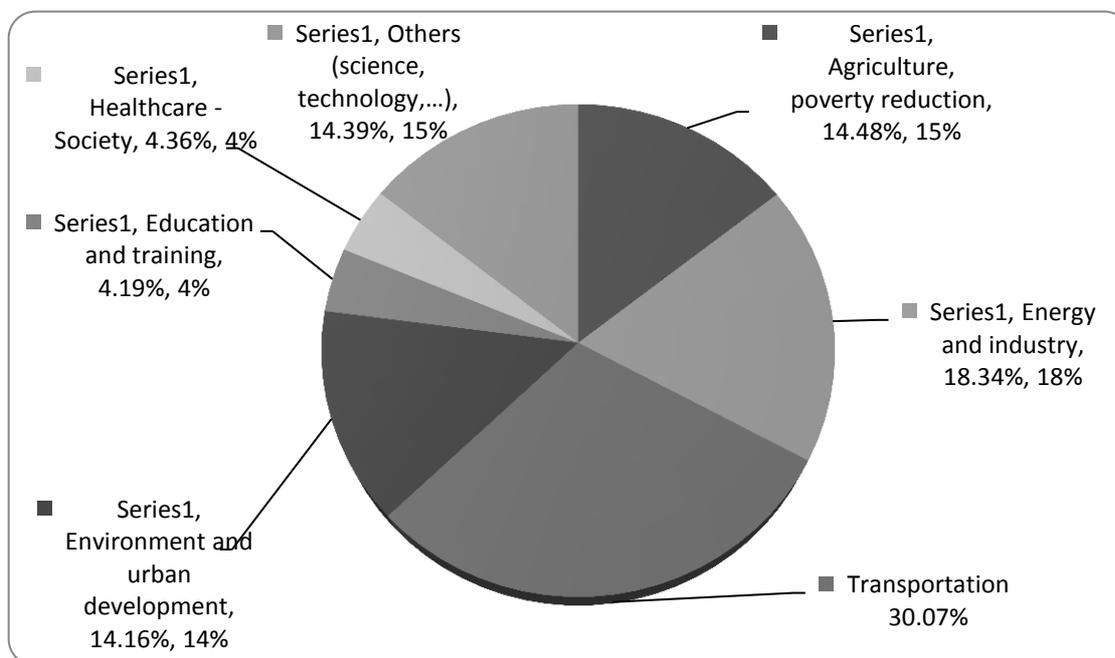
**Figure 2. International donors in Vietnam in the period 1993-2015**



Source: General Statistics Office of Vietnam, Statistical database, <http://gso.gov.vn>.

Regarding to ODA by sectors, transportation was the biggest recipient of ODA over the period, comprised for over 30% of total ODA loans; followed by energy and industry (18.34%), agriculture and poverty reduction (14.48%) and environment and urban development (14.16%). In transportation, ODA has been used for a wide range of infrastructures such as roads, railways, internal waterways, sea ports and airlines. These projects have played a crucial role for helping Vietnam solved the “bottle-neck” of development, paving the way for the new stage of sustainable economic growth in Vietnam. Notably, with the middle-income status, preferential ODA is expected to continue in only some specific sectors namely education, technical assistance, and poverty reduction. However, ODA will be soon no longer available in some key sectors such as infrastructure, energy and industry. This has been the main challenge for Vietnam’s economic development after ODA graduation.

**Figure 3. ODA in Vietnam in the period 1993-2015 by sectors**



Source: General Statistics Office of Vietnam, Statistical database, <http://gso.gov.vn>.

### 3. New features of ODA for Vietnam in the context of middle-income status

Vietnam, one of the least developed economies worldwide in the 1980s, has leaptfrogged to middle-income status in less than a single generation. Becoming a middle-income country, Vietnam is expected to be less depended on international assistance. In the new context, there are some new features for ODA in Vietnam.

First, new ODA commitment has fallen sharply. The downward trend started in 2015, with a remarkable decline in both committed and disbursed ODA, and expected to be continued. Some main donors, both multilateral (WB, ADB) and bilateral donors (England, Sweden, Norway, Belgium, etc.) have announced to cut down or stop offering traditional ODA for Vietnam. It has raised the question about the new resources for Vietnam’s economic development in the middle-income status.

Second, the level of favor has decreased remarkably. In detail, the non-refundable ODA comprised for 20% of total ODA in 1993-2000 period, but covered only 7% and 3.6% in the 2001-2010 and 2011-2015 periods respectively. Since 2010, Vietnam has had to access new types of loans, such as Ordinary Capital Resources (OCR) from ADB and IBRD from WB, Which have lower maturity time, lower grace period, and higher interest rate compared to traditional ODA from Asian Development Fund (ADF) and International Development Association (IDA).

Third, the type of cooperation has changed. The relationship between international donors and Vietnam has change from “assistance” to partner relationship, with a higher requirement on aid effectiveness. In the period 1993-2012, the Consultative Group Meeting (CG) was held semi-annually. CG meeting was a platform for discussion between the Vietnamese government and donor agencies on development policies and donor pledges. It served primarily as a platform for mobilizing Official Development Assistance (ODA) resources. This function of the CG was no longer relevant since most development partners established their own bilateral ODA discussions. Therefore, The VDPF (Vietnam Development Partnership Forum) was first introduced in 2013. Since then, VDPF has become an annual event for high-level policy dialogue and a forum to generate commitments among stakeholders towards Vietnam’s sustainable development and transformation priorities.

Fourth, the center role of the government in receiving and distributing ODA has gradually shifted to the straight relations between domestic and international parties. It means that international donors will directly contact and cooperate with Vietnamese partners, such as direct relationships between universities, institutes or research centers, organizations, individuals, localities, etc., of Vietnam and international partners. The movement from government-government relationship to direct cooperation between local and international parties has been a new channel for sponsors’ community to maintain the development relationship with Vietnam in the middle-income status.

Fifth, the role of international non-governmental organizations (INGO) is expected to be increased. In terms of middle-income status, an increasing number of international donors have noticed to cut off ODA program for Vietnam during the next two years. Sweden, England, Belgium, Norway, etc., have decided to stop offering new ODA packages for Vietnam. However, these donors can indirectly support Vietnam through INGO programs. It is expected to be a new channel for poverty reduction, rural development and sustainable economic growth in Vietnam.

#### **4. Policy implications for Vietnam in the middle-income status**

After more than 20 years of receiving ODA, Vietnam has become one of the most dynamic countries in South- East Asia, with an average GDP growth rate of about 5.94% in the period 2010-2015 (GSO, 2017). Based on the international practices, the graduation of ODA is inevitable when Vietnam has achieved the middle-income status and high economic growth. In order to effectively utilize ODA funds and access new sources for economic development, the Vietnamese government should concentrate on solving the following issues:

First, Vietnam should pay much more attention to speed up the ODA disbursed rate, which has been quite low and negatively affected Vietnam's credibility and development. Vietnam still has significant amounts of undisbursed preferential ODA. Up to the end of 2015, undisbursed preferential ODA for Vietnam is about 21 billion USD. Assuming that about 3 to 4 billion USD is disbursed annually, it will provide ODA flows for the next five or six years. Therefore, it is crucial for Vietnamese government to make the best use of these resources to smoothly transform to a greater share of other resources for economic development beyond traditional ODA.

Second, Vietnamese government should create an oversight mechanism for civil society to monitor and supervise ODA projects as well as government agencies. After more than 20 years as a large ODA recipient, Vietnam has experienced some complaints from international sponsors regarding to inefficient use of ODA funds and corruption (Japanese government suspended ODA for Vietnam for six months in 2008 after a prominent corruption case. In 2014, Tokyo halted its ODA to Hanoi regarding to bribery allegations on a railway project funded by Japanese ODA). Therefore, it is crucial for Vietnamese government to set up a new mechanism for ensuring transparency in ODA use. It can be done by an efficiently oversight mechanism for civil society in the battle against corruption, ineffective use of ODA and bribery.

Third, the government should build the road map for ODA graduation in Vietnam. As a lower middle-income country, Vietnam has received less ODA but still need a huge financial resource to maintain its economic growth. To be successful, Vietnam need to build plans to reduce ODA loans with short payment period and strict conditions, while attracting other sources for investments such as FDI and private sector. Specifically, Vietnamese government should encourage and support the private sector to approach ODA through the on-lending mechanism or participating in the implementation of ODA projects. Moreover, the PPP (Public Private Partnership) approach should be more encouraged to taking advantage from the huge resources of the private sector. The PPP is a suitable approach to reduce the pressure on government budget as well as create an additional space for the growth of the private sector. Therefore, the combination in PPP, including the ODA utilizing, is considered as an effective solution to maintain the economic growth in the context of upcoming ODA graduation.

## **5. Conclusions**

ODA has played an important role for infrastructure construction, poverty reduction, and sustainable development in Vietnam since the reconnection of Vietnam with international sponsors in 1993. However, the role of traditional ODA in Vietnam is expected to decline. Vietnam is looking toward ODA graduation in the next ten or fifteen years. With the new status as a lower middle-income country, several development partners have announced plans to scale down their activities or stop offering traditional ODA for Vietnam within the next 1-3 years. There has been a transformation of Vietnam's ODA to a smaller number of traditional development partners, with less grant and higher interest rate. While traditional sources of development assistance are declining, new

market-based sources such as IBRD, OCR etc., are emerging. In the new context, Vietnam should speed up the ODA disbursement and improve the transparency of ODA utilizing. Besides, Vietnam needs to rely more on domestic resource, especially from private sector to boost the economic growth.

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# THE IMPACTS OF HUMAN CAPITAL ON ECONOMIC GROWTH IN RED RIVER DELTA'S PROVINCES

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## **Abstract:**

*This research paper aims to measure the impacts of human capital on economic growth in Red River Delta by using regression model. The research focuses on identifying the human capital on the framework theory on growth models and examining the economic roles of the human capital regarding the representative parameters. The research shows that human capital has significant roles in economic growth in Red River Delta's provinces. In addition, the statistical test shows that the impacts of human capital are varied according to the GDP levels. From a policy perspective, the results urge Vietnam particularly the Red River Delta's provinces to have appropriate and focal policies for enhancing the quality of human capital.*

**Keywords:** Economic growth model, Economic development, Economic growth, Human capital.

## **1. Introduction**

Economic growth is an important goal for the most nations. It is a necessary condition for development of a country and for modern economic restructuring and creating a foundation of human development. At each stage of development, the growth pattern is marked by different emphases. Vietnam has recorded remarkable achievements on the development. From the backward agricultural country in which a large rural population accounting for almost 80% of the total population is engaged in agriculture, Vietnam has gradually built up its facilities and technologies to accelerate industrialization and modernization.

From 2001 to now, Vietnam's economic growth rate has continually maintained at a relatively high level compared to the region and the world. In addition, it can be seen that there are the suitable changes of economic structure and steady increase of human development index (HDI) in Vietnam over the past 20 years. The economic growth had achieved the significant rate of 7.51% per year around the period 5 years (2001-2005). This rate had been declined rapidly to 5.88% per year (2011-2015). In addition, Vietnam

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is facing high risk of middle-income trap due to the slow rise of a per capita income in recent years despite becoming a low-income country since 2008. To struggle with these challenges, Vietnam needs to have an appropriate growth model and a proper development orientation for sustainable development.

There are three factors which were often analyzed to explain economic growth, including capital, labor, and TFP. With regards to Vietnam, its growth achievements are mainly due to the accumulation of capital over the past 30 years. However, this economic growth is no longer appropriate as the result of the ineffectiveness of capital. In globalization, the physical capital still plays a crucial role but not much as in the past while the role of intangible capital, especially human capital, is growing. The intangible capital is a very necessary source of capital for companies as it is included in their value. Human capital plays an increasingly important role in the process of economic development: (1) it includes the skills created by education and training so that human capital is a factor in the production process combined with tangible capital and raw (unskilled) labor to create products; (2) it is the knowledge to create creativity, a fundamental element of economic development (Mincer, 1989). In addition, some studies provided human capital as an input to analyze economic growth and showed its positive effects like visible capital with a higher level. However, if the investment in human capital is not good, it will cause negative impacts which lead to reduce the growth. By approaching the GDP from the total income of the population, Borjas and George (2005) showed the positive effect of education on income. Waines (1963) argued that despite the plenty of resources, the lack of highly qualified labor force leads to slow development in developing countries. Thus, Vietnam needs to shift to a technology-based growth model and focus on developing human capital as a result of the higher efficiency of human capital than the physical one.

In Vietnam, there are also a number of studies on human capital from different perspectives, stages, and circumstances. In particular, the most recent significant study on the role of human capital in Vietnam's economic growth is "Factors affecting the economic growth of Vietnam's provinces and cities in the period of 2000 - 2006 " of Tran Tho Dat. This study suggests that there were different impacts of human capital on the economic growth of each region. In the South East and South Central, human capital played an active role in regional economic growth. In contrast, there was a negative effect at Red River Delta between 2000 and 2006. The results show that in the Red River Delta, where high qualified labor are trained, human capital has not had a key role. However, is that true for the Red River Delta at the present? As an important region in Vietnam, should Red River Delta's provinces change the growth model to contribute to the overall growth of Vietnam? In order to answer those questions, the study will examine the impact of human capital on the economic growth of the provinces at Red River Delta from 2011 to 2015.

## **2. Research Methods**

The study uses expanded Cobb-Douglas function to measure the role of human capital as well as other factors related to economic growth in the Red River Delta region 2011-2015.

$$Y_{it} = AK_{it}^{\alpha} L_{it}^{\beta} H_{it}^{\gamma} e^{\theta Z_{it} + U_{it}}$$

With  $Z_{it} = (FI_{it}, GnR_{it}, Pr_{it})$

Where  $i$  is the number of provinces (cities),  $t$  is the number of years,  $A$  is technological factor,  $Y$  is economic growth rate (using GDP value),  $K$  is physical capital,  $H$  is human capital,  $L$  is number of employees,  $Z$  is a set of variables contributing to output (including FI: Openness index, GnR: net non-agricultural sector income, Pr: poverty rate) and  $U_{it}$  is error term, indicating the effect of ignored variables

Besides,  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\theta$  are the coefficients for the effects of exogenous variables.

For the analysis of array data, there are three main regression models: Pooled-OLS model, fixed-effects model (FEM) and random-effects model (REM).

*Pooled - OLS model*:  $Y_{it} = \alpha_1 + \beta_1 X_{1it} + \dots + \beta_k X_{kit} + U_{it}$

Where  $Y_{it}$ : is the dependent variable of  $i$  in period  $t$ ,  $X_{kit}$  is the independent variable of  $i$  in period  $t$ ,  $\alpha$  is an intercept and  $\beta_k$  is the coefficient of  $X$ .

The model assumes that the intercept and the slope coefficient are stable over time. In addition, independent variables must be exogenous variables that are independent of the past, present, and future values of the random error. Therefore, this model can lead to phenomena such as multicollinearity and autocorrelation that reduce the accuracy of the regression results. Considering the correlation among independent variables, if the pair of independent variables has a correlation coefficient more than 0.8, the model has a serious autocorrelation. Also if there exist one or more linear relationships among some of the variables, the model will get multicollinearity. In order to solve these defections, fixed effects model (FEM) or random effects model (REM) are used.

*Fixed effects model (FEM)*:  $Y_{it} = C_i + \beta * X_{it} + U_{it}$

Where  $Y_{it}$ : is the dependent variable of  $i$  in period  $t$ ,  $X_{it}$  is the independent in period  $t$ ,  $C_i$ : the intercept for each unit of study and  $\beta$  is the slope coefficient of the variable  $X$

This model assumes the intercept  $C_i$  is different from each unit of study, but it was maintained over time. This assumption helps to find out the spatial effects of the data on the regression results, because of the particular characteristics.

*Random-effects model (REM)*: This model has the same starting point as the fixed-effects model (FEM) but instead of considering  $C_i$  as fixed, this model assumes that it is a variable random with the average value of  $C_1$  and the intercept  $C_i$  is calculated:

$$C_i = C_1 + \varepsilon_i \quad \text{where } i = 1, 2, 3 \dots n$$

Where  $\varepsilon_i$  is the random error term with a mean value of 0 and the variance is  $\sigma_{\varepsilon}^2$ . Therefore, the model is  $Y = C + \beta_{it} X_{it} + \varepsilon_i + U_{it}$

To examine whether the random-effects model is appropriate, *the Hausman test* is conducted. This test helps answer the question of whether there is a correlation between

the independent variables and the random factors of each unit in the model. If there is a correlation, the fixed effects model (FEM) will be chosen and vice versa. In case there is a correlation between  $U_{it}$  and independent variable, fixed-effects model will be used.

In this study, random-effects model is used to examine the impact of human capital on economic growth, based on statistics in the Red River Delta from 2011 to 2015.

### 3. Research results

#### 3.1. The economic role of human capital

Research indicates that three criteria for measuring human capital, including expenditure on education (EC), life expectancy (LE) and mean years of schooling (of adults) (S) have positive impacts on economic growth of the Red River Delta provinces (Table 1, 2 & 3). In particular, the influence of education expenditure (EC) on economic growth has a coefficient 0.161 (Table 1). The coefficient of life expectancy (LE) is 3.510 (Table 2) and of mean years of schooling is 1.420 (Table 3). The physical capital, labor force, non-agricultural income and trade openness have positive impacts on growth, while the rate of poverty is counterproductive.

**Table 1: Pooled-OLS regression with human capital measured by expenditure on education (EC)**

Dependent variable: LnY	Coefficient	P - value
<b>LnK</b>	0.442	0,069
<b>LnL</b>	0.325	0.196
<b>LnEC</b>	0.161	0.445
<b>FI</b>	0.009	0.020
<b>GnR</b>	1,85e-09	0.589
<b>Pr</b>	- 0.029	0.263

*Source: STATA 12 results of the research team*

**Table 2: Pooled-OLS regression with human capital measured by life expectancy (LE)**

Dependent variable: LnY	Coefficient	P - value
<b>LnK</b>	0.445	0.070
<b>LnL</b>	0.421	0.040
<b>LnLE</b>	3.510	0.605
<b>FI</b>	0.009	0.022
<b>GnR</b>	2.15e-09	0.529
<b>Pr</b>	-0.033	0.222

*Source: STATA 12 results of the research team*

**Table 3: Pooled-OLS regression with human capital measured by mean years of schooling in the workforce (S)**

Dependent variable: LnY	Coefficient	P - value
<b>LnK</b>	0.278	0.245
<b>LnL</b>	0.423	0.027
<b>LnS</b>	1.420	0.036
<b>FI</b>	0.011	0.008
<b>GnR</b>	4.08e-09	0.221
<b>Pr</b>	-0.04	0.023

*Source: STATA 12 results of the research team*

Of all three regression models with 3 criteria for measures, the conclusions about the coefficient of estimation are quite consistent. Measured by education expenditure and life expectancy, the human capital represents a positive impact on economic growth in the Red River Delta (the coefficients are 0.199 and 3.107). Whereas mean years of schooling of the workforce and trade openness variables are not reliable enough to conclude. In addition, the results show that while physical capital, labor and net revenue of the non-agricultural sector increase, the economic growth rises; however, the increase in poverty rate has the opposite effect.

### **3.2 Human capital and economic growth in the Red River Delta**

Table 4 summarizes the results of the regressions of human capital based on 3 criteria for measures: education expenditure, life expectancy and mean years of schooling in the Red River Delta.

**Table 4: Random-effects regression (REM) without FI**

Dependent variable lnY	Các thước đo vốn con người		
	Expenditure on education (lnEC)	Life expectancy (lnLE)	Mean years of schooling (lnS)
<i>Independent variable</i>	<i>Coefficient</i>	<i>Coefficient</i>	<i>Coefficient</i>
<b>Constant</b>	4.606	-9.433	4.619
<b>lnK</b>	0.272	0.280	0.276
<b>lnL</b>	0.417	0.625	0.632
<b>lnH</b>	<b>0.191</b>	<b>3.205</b>	<b>-0.176</b>
<b>GnR</b>	1.32e-09	1.81e-09	2.14e-09
<b>Pr</b>	-0.010	-0.017	-0.024
<b>Prob &gt; F</b>	0.000	0.000	0.000
<b>Adjusted R-squared</b>	0.8216	0.8171	0.8178

*Source: STATA 12 results of the research team*

In the Red River Delta provinces, 1% increase in expenditure on education in the local budget will make the province's income raise by 0.191% /year with constant conditions. According to actual data, Hung Yen province had the GDP of 2013 at 32,377,375 million VND and education expenditure was 1,234,286 million VND. In 2014, expenditure on education was 1.336.837 million VND, that increased  $(1336837-1234286) / 1234286 * 100 = 5.8179\%$ . As the above result of regression, GDP in 2014 of Hung Yen would increase by  $5.8179 * 0.191\% = 1.092\%$ . And in fact, the GDP results of Hung Yen in 2014 reached 34.741.584 million VND, an increase by 1.07302% as compared with 2013.

When human capital is measured by expenditure on education, the human capital effect is about 0.191%. This result is quite high with provinces having a low percentage of education expenditure compared to local budgets which is a fact in the Red River Delta provinces, where the share of education expenditure in local budgets is only around 13-15%, the highest is only up to 20%.

The result of life expectancy variable is also quite positive. The coefficient 3.205 indicates that 1% increase in life expectancy makes the local income raises by 3.205% per year (constant conditions). For instance, in 2011, the life expectancy in Hai Duong was 74.1 years while the GDP reached 45,32,000 million VND. Then the life expectancy is 74.446 years until 2012, an increase by  $(74.446-74.1) / 74.1 * 100 = 0.4676\%$ . According to the regression, the GDP in 2012 of Hai Duong would increase to  $0.4676 * 3.205\% = 1.4985\%$  and in fact, in 2012, the real statistic was 47,440,000 million VND. This result state that population health has a significant impact on the formation of human capital in each individual. It also shows that local public health concerns are one of the factors contributing to the improvement of the province's human capital as well as the positive effect on economy growth.

#### **4. Conclusions and recommendations**

By using a random-effects model, based on statistics in Red River Delta provinces, the reseach gets positive and significant results of human capital.

On the one hand, the results of research emphasize the positive and theoretical relationship between human capital and economic growth. It also points out this actual impact in case of Red River Delta provinces over period 2011 to 2015 as well as the different influences among regions.

From policies perspective, the results urge Vietnam particularly the Red River Delta provinces to have appropriate and focal policies for enhancing the quality of human capital:

Regarding expenditure on education, it is really essential to improve its efficiency in all provinces. Despite the increase in education expenditure, its impact on economic growth is the smallest of the three criteria for measuring human capital. As to invest more effectively, it is necessary to focus on renovating and modernizing training programs together with teaching methods. Each province also needs to pay attention to invest in teaching equipment and facilities more suitably. Besides, monitoring local budget should be implemented usually.

For life expectancy, improving the quality of health care need to be concerned to enhance the health of the population. Socialization of health care that let citizen directly participate in the monitoring process has been identified as a good solution to increase the efficiency of the public sector. As a high educational and high living standards area in the whole country, Red River Delta should completely utilize this solution. In addition, each province needs to invest in medical equipment and facilities, apply achievements of technology and implement policies to support, ensure the health care for the labor force.

Finally, to extend mean years of schooling, education for children of school age needs to be renovated. As children are the future workforce, who contribute decisively to the economic growth, investment in childhood education is the best way to get a long-term impact. Besides, technology must become the top priority even in education and training. The structure of training in Vietnam in general and the Red River Delta in particular still exist many shortcomings when the intellectual force with well training becomes more and more unemployed. It is time to restructure the education and training structure with more effective policies from government and provinces.

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# THE 4.0 INDUSTRIAL REVOLUTION AND CHALLENGES TOWARDS TOURISM'S LABOR IN VIETNAM: CASE STUDY IN THE RED RIVER DELTA AND THE NORTHEAST COAST

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## **Abstract**

*The quality of human resources is one of the most important factors in the development of tourism sector in Vietnam nowadays. According to the assessment of national offices and specialized organizations over the past years, the quantity and quality of human resources in the tourism industry has been continuously increased to meet the rising requirements of the socio-economic development process together with the international economic integration. However, in the tendency of the rapid development of the 4.0 Industrial Revolution, national human resources within tourism sector in general and the human resources within the Red River Delta and the Northeast Coast in particular are facing many specific challenges. One of that difficulties is in both shortage and weakness in term of quality labours which has not met the requirements of integration and development in the 4.0 era. This study explores the characteristics of the Fourth Industrial Revolution and its major impacts on human resources in the tourism sector (particularly in the Red River Delta and the Northeast Coast). On the basis of identifying the challenges faced by human resources in two these regions, we have proposed some policy recommendations for the tourism industry in two regions and nationwide to integrate and response effectively to the trends of the 4th Industrial Revolution.*

**Keywords:** Tourism, tourism human resources, The Red River Delta and the Northeast Coast, the 4th Industrial Revolution.

## **1. Introduction**

Nowadays, the world is dramatically developing the revolution with technology foundation 4.0 (TIR 4.0) with the breakthrough in technology, internet, digital, virtual reality,... Many experts said that TIR 4.0 will have a huge impact on: (i) the structure and level of economic development; (ii) economic growth; (iii) business model; (iv) Labor markets of many countries. Specifically for the labor market, the most basic thing will be the challenge between the quality of labor demand and supply as well as the labor force structure. When automation replaces human in many fields of the economy, workers will likely force to adapt quickly to modify in production that otherwise they would be redundant or out of work.

Throughout the "Vietnam Tourism Development Strategy to 2020 with a vision to 2030", "Master Plan for Vietnam Tourism Development to 2020 with a Vision to 2030", "Master Plan Develop tourism in the Red River Delta and the Northeast Coast to 2020 with a vision to 2030", tourism has always been identified as an important economic sector with the goal of becoming a key-leading economic sector which accounts high proportion in GDP structure, creates motivation for cultural and social development in modern and diversity direction. To achieve the set out objectives, we have to focus on developing all kinds of resources (resources, capital, science and technology, human,...), the first and foremost thing is human resource which determines the development of all nations in the era of 4.0.

## **2. Method**

The research mainly applies the method of descriptive statistics, comparing combined with analysis, evaluation based on secondary data sources which surveyed and collected from Department of Tourism; Department of Culture, Sports and Tourism of the provinces in the Red River Delta and the Northeast Coast; and data from the Institute for Tourism Development.

## **3. Results**

### ***3.1 The 4.0 Industrial Revolution and the change in labor supply and demand***

The concept of Industry 4.0 or the Fourth Industrial Revolution (4.0 IR) was formed on the basis of the third revolution - the digital revolution, the use of electronic devices, Information technology to further automate the manufacturing process [4]. 4.0 IR is not limited to automation, intelligent and connected systems, but also covers a wide range of developmental spans of breakthroughs in a variety of areas: genes to nanotechnology, 3D printing, from renewable energy to quantum computing [2, p10]. In other words, this is the fusion of these technologies and their interaction in the fields of physics, number and biology [2, p7] - this is the basic factor that makes 4.0 IR different from previous revolution. In particular, in this revolution, emerging technologies and broader innovations are diffused more rapidly and broader than they were in the past - considered the fourth major change with the strongest impact on modern manufacture [5, p5], after the revolution of the 1970s, the revolution of the 1990s, and the revolution of automation took place in the 2000s. According to Professor Klaus Schwab, 4.0 IR briefly understands a term that includes a wide range of modern automation technologies, data exchange trends, manufacturing and intelligent manufacturing. Afterwards, this revolution facilitates the creation of "intelligent plants" with a diverse and flexible structure in which virtual space physics systems will monitor processes, create out a virtual copy of the physical world.

Generally, 4.0 IR is a modern revolution based on three main areas: Digital: Include Big Data, Internet connection (IoT), artificial intelligence (AI); The Biotechnology: Applications in agriculture, fisheries, medicine, food processing, environmental protection, renewable energy, chemistry and materials; Physics: New generation robots, self-driving cars, new materials (graphene, skyrmions...), nanotechnology... It is easy to see that 4.0 IR

despite its beginnings but it is breaking the structure of most industries in every country, foreshadowing the transformation of the entire production, management and administration system. According to experts' forecasts, the 4.0 IR will be the foundation for a dramatic transition from a resource-based, low-cost labor-intensive to a knowledge-based economy.

According to research reported at the World Economic Forum in 2016, the 4.0 IR will create about major changes in labor supply and demand all over the world. A highly automated and innovative economy requires workers to adapt quickly to changes in production otherwise they would be redundant or out of work. In some areas, as predicted, with the arrival of robots, the quantity of employees will be reduced by one-tenth compared to at these time, so that the remaining nine out of ten will be displaced or unemployed; additionally, a plenty of old jobs will be lost. Labor markets in many countries as well as in the globe will strongly differentiate between low skilled and high skilled workers. According to reports here, the 4.0 IR not only threatens to low-skilled workers but also middle-class and high-skilled workers if they are not equipped with new skills - creative skills for the economy in the era of 4.0.

### ***3.2. Human resources in tourism in the Red River Delta and NorthEast Coast and some issues in the context of 4.0 IR***

#### ***3.2.1. Current situation of tourism human resources in the Red River Delta and North East Coast***

Human resources in the tourism sector are diverse, including the human resources involved in the development of tourism, including direct and indirect human resources. The direct tourism labours are those who work at national management agencies in tourism labour enterprises (business management officers, professional workers in hospitality, travel companies, tourism transportation,...), tourism trainees in vocational schools, tourism teachers in colleges and universities. Indirect human resource are employees who working in sectors and processes related to tourism such as culture, customs, transport, immigration, agriculture, industry, commerce, public services, environment, post and telecommunication, tourist activities community. Human resources are considered as valuable assets, directly affecting the competitiveness, business efficiency of enterprises as well as the sustainable development of the industry.

(i) *The quantity of tourism labours:* According to the survey and statistics from the Tourism Department, Department of Tourism and Commerce, Department of Foreign Affairs and Tourism in the localities in the region, the number of labours in the area increased rapidly. Indirect labours tend to increase on a larger scale, reflecting the role of tourism and the effectiveness of socialization of tourism. In 2011, there were about 108,375 employees in tourism sector, accounting for 27% of the country's labour force. In 2017, there were 178,671 employees, accounting for about 30% of the labor force in the country.

Employees in the hospitality account for nearly 55% of the total. This is in line with the realities of direct labours. In addition, labours in the business related to tourism such as travel, entertainment services, transport, logistics,... also witness for a relatively high proportion.

In terms of locality employment structure in 2017, Hanoi occupied over 51.5% of workers in the whole regions, this number in Quang Ninh accounted for 17.4%, Hai Phong accounted for 7.4%. In addition, some localities have developed tourism industry such as Ninh Binh, Hai Duong,... Other localities have less tourist work.

**The number of tourism's labours by provinces, 2011 - 2017**

*(Unit: people)*

	<b>Province</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
1	Hanoi	57.875	62.150	65.000	68.000	88.000	90.500	92.040
2	Bacninh	1.186	1.340	1.560	1.750	1.800	3.174	3.316
3	Hanam	950	980	1.050	1.120	1.250	1.270	1.290
4	Haiduong	4.000	5.460	6.195	7.020	7.500	6.000	6.125
5	Hungyen	2.260	2.680	2.910	3.080	3.500	3.650	3.780
6	Namdinh	2.745	2.990	3.010	3.200	3.500	3.620	3.640
7	Thaibinh	1.270	1.390	1.185	1.200	1.355	1.400	1.440
8	Vinhphuc	910	950	980	1.020	1.300	5.228	5.650
9	Ninhbinh	1.780	1.810	2.090	4.120	5.000	16.850	17.000
10	Haiphong	10.400	10.900	10.940	12.600	12.850	13.000	13.300
11	Quangninh	25.000	27.190	29.520	32.125	35.000	29.488	31.090
	<b>Total</b>	<b>108.375</b>	<b>117.840</b>	<b>124.440</b>	<b>135.235</b>	<b>161.055</b>	<b>174.180</b>	<b>178.671</b>

*(Source: Tourism Information Center - General Department of Tourism)*

*(ii) The quality of tourism labours*

According to the statistics of labours in hospitality in 2017, there were 25,137 employees with bachelor and post-graduation level, accounting for 14.1%, 22,189 employees with diploma and intermediate level accounting for about 12.4%; Other non-professional-tourism level have 26,264 employees, accounting for 14.7%; Unskilled workers account for 109,483, accounting for 61.2% of total employment in the region. In terms of indirect labour force, there is not enough statistics, estimated in 2017 is about 300,210 people, of which under primary level accounts for about 54%, diploma, bachelor and post-graduation level accounted for about 14.2%.

Foreign language and computer skills are relatively high. Human resources used language in the region account for about 70% of total human resources. English is the most popular to employees which are about 45%, Chinese, French and other languages with 10%, 8% and 10% respectively. On the informatics level, most of the laborers in the region know how to use the computer for their work.

*(iii) The structure of human resources by sector, profession and gender, age of the region*

State managers and tourism activities in the region account for about 2%, of which about 0.7% are state managers and 1.3% work in non-productive units. Human resources in the business sector account for 98% of the workforce, 20% for waiters and bartenders, 20% for room-catering, 10% for food and beverage processing, 10% for reception, 8.5% for tour guidance.

In term of gender, overall of female employees in tourism sector is about 52% and tends to increase, while this number of male employees tends to decrease. The structure of human resources among ages level tends to be stable, there is no big change. The tourism sector of the region has a young workforce of under-30-year-olds, accounting for 40-45%, people in the 31-40 age group consist of 35%, people aged 41-50 for 20%, and over-50-year-old accounting for 2-3%. The people in the area are "golden" enough to assume the task of developing the industry.

*3.2.2. Some issues with the tourism's labours by the region*

As discussed above, the quantity and quality of tourism's labour is on the rise. However, 4.0 IR with the application of the achievements about information technology, control and automation, the regional tourism in particular and national tourism labours in Vietnam in general in front of many issues in scope of quality. Specifically:

*First of all*, the technical level of the labour force remains low. As a service sector characteristic, the activity is mainly about serving, there are many fields that do not require high level of education, so the direct labour force operated at low level (staff serving chamber, notices, cleaning, plant care staffs, security man,...) account for a large proportion. This group has relatively high number of people who have not graduated from high school, accounting for 20-25% of the total human resources of the region. At present, there is no specific statistics and surveys, but preliminary surveys of the authors have found that in some localities such as Quang Ninh, Ninh Binh and Hai Phong, the level of technical expertise still keeps low. Incidentally, innovation and creativity at workplace of the labour persist not high. This can be seen as an obstacle to accessing modern technologies applied in the service sector of the region in particular and the whole country in the context of the 4.0 IR.

*Secondly*, knowledge of integration, foreign languages, computer science; creative capacity, leadership, management, administration and practical experience are not sufficient to meet the development requirements of the sector. A small part of employees is not active to self-learning, willing to raising up the level, so that labour productivity is low. Highly trained staffs in state management, business management, policy makers in research and development in the region are still thin and not tight. The quality of human resources in localities is not really equal.

*Thirdly*, technical skills and soft skills are weak. A wide range of tourism's labours in the region lack the prescribed professional skills standards, team-work, communication skills are not high as the limitations affect the quality of tourism industry.

#### **4. Some enhancements and solutions to improve the quality of tourism human resources in the Red River Delta and the North East Coast are consistent with 4.0 IR.**

The 4.0 Industrial revolution is an indispensable trend, it is both a challenge and an opportunity for development. Therefore, in the future, to improve the quality of tourism human resources to meet the requirements of 4.0 IR, The Red River Delta and the North East Coast should focus on the following basic solutions:

*Firstly*, it is necessary to improve the policy mechanisms, in line with the realities of the tourism human resources of the region in the new context. To be more practice, the solution forwards are formulating strategies for human resources development in the region's tourism, paying attention to the training of hi-tech human resources which push up the ability to apply information technology. Tourism authorities in the region need to focus on the forecast of human resource needs according to the structure of the industry and the level of training. Based on that, there are timely adjustments in training, in accordance with requirements of socio-economic development in each period.

*Secondly*, it is essential to improve the quality of human resources towards regional and international standards by announcing the need for qualified human resources and tourism to link and promote the forms of effective training: (i) For professional managers and administrators of tourism in localities should be trained, supplemented to ensure the ability to apply information technology, advanced process of working, the capacity to propose, advise on the development of strategies, orientations, policies and regimes, and perform the state management of tourism activities in conformity with the requirements of the economy in the conditions of international economic integration; (ii) For direct tourism's labours, it is necessary to be trained in accordance with professional standards in line with advanced programs in the region and in the world, to improve skills and professional skills to perform their high quality, professionalism, meeting the needs of operating management and mastering modern tourism technology systems. In addition, there should be a co-operation training among both national and international enterprises and training institutions to improve their qualifications; (iii) Indirect tourism's labours needs to have short-term training programs to supplement the professional and technical knowledge for those who serve in the industry.

*Thirdly*, it is necessary to interchange strongly by training and fostering of tourism human resources of the region with large both national and international tourism enterprises in the region. In the context of the 4.0 IR, human resources must be trained in accordance to meet the requirements of the business. In a simple way, we need to accelerate the development of training at enterprises, to foster schools in enterprises to train human resources in line with the technology and organization of tourism enterprises. At the same time, the strengthening of linkages between tourism training establishments and enterprises, on the basis of corporate social responsibility aimed at the real business is the "extended arm" in the operation. Its purpose is to facilitate the equipment and technologies of enterprises in the training service and formation of professional capacity for trainees in the process of training and internship enterprise.

*Fourthly*, it takes in consideration about strengthen international cooperation in improving the quality of tourism human resources in the region. Besides, multilateral and bilateral cooperation activities in the fields of tourism such as scientific research, academic exchange; training and fostering of teachers and managers should be strengthened. Moreover, the change begins from creating appropriate conditions for the legal and social environment for foreign investors to set up and operate high-quality tourist training establishments in the region and carrying out association and cooperation specialized in vocational training.

## **5. Conclusion**

The 4.0 IR with its broad application about the achievements of information technology, control and automation poses many challenges to the tourism human resources of the Red River Delta and the Northeast Coast. Training and development of tourism human resources is aimed to balance the structure of the industry, labor force at a high level at which is appropriate strategies, planning for developing tourism human resources. In addition, standardization of tourism human resources focusing on managerial and skilled scope plays an important task of the region in contributing positively to promote the sustainable development of enhanced the status and position of the tourism in region compared to the nationwide.

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# SOCIAL CAPITAL AFFECTS TO INCOME OF HOUSEHOLDS IN RURAL AREA OF VIETNAM

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## **Abstract**

*This paper focuses on social capital and its impacts to the income of rural household in Vietnam which is rarely studied in literature. In this research we contribute to literature the effects of two different factors, internal and external, of social capital on household income. The multivariate OLS regression model is used to analyse data of the Vietnam Access to Resources Household Survey 2014, with the participation of 3,648 households in rural areas of 12 provinces. This study found empirical evidence that local social capital makes a significant contribution to household income, other than human capital and other household assets, by illustrating four different variables: Interaction between family members, personality of household's head, trust and information collected from official institutes and associations. Our findings support a policy of the donors and governments to invest in social capital and provide a proof that there are many other determinants of social capital that are hidden in province-level.*

**Keywords:** household income, rural, social capital

## **1. Introduction**

The research of social capital and its impact in household's life is rarely studied in Vietnam. Moreover, rural areas plays an important role as it accounts for more than 67% of the total population in the country and 50% total workforces. In addition, Vietnam is in the process of industrialization to boost integration into the globe; hence, the Government necessary to introduce appropriate policies to develop rural areas. Therefore, social capital and its impact to household in Vietnam is an important research topic that can support the development of rural areas in particular and the whole country in general.

This paper targets two specific objectives: (1) Identify the components of the household's social capital and the variables of household income; (2) Determine the degree of impact of social capital on the household income in rural area of Vietnam.

Social Capital is a term that was introduced almost a century ago, but until the end of the twentieth century, it was widely used by many different authors (Hanifan, 1916; Jacobs, 1960; Bourdieu, 1986; Coleman, 1988; Fukuyama, 2001; 2002; Portes, 1998; Putnam, 1995, 2000). There are different ways to classify social capital. For examples, social capital can be divided into three main components (networks, standards and endorsements); scope (micro, meso and macro levels) and the characteristics or functions of social capital (binding, transitive nature, linkage) (Halpern, 2005). The remarkable definitions are listed in Table 1

**Table 1.** Remarkable definitions of Social capital

<b>Authors</b>	<b>The concept of social capital</b>
Pierre Bourdieu	A combination of resources (real or virtual) accumulated in an individual or group by owning a sustainable network of mutual relationships and mutual recognition.
James Coleman	These are aspects of the social structure facilitate the actions of individuals. They are not individual entities but multiple entities. There are specific goals that cannot be achieved without social capital.
Putnam	These are relationships in the network of individuals (that connect with each other), between individuals and societies that create reciprocity, mutual trust, norms formed from these relationships. With the meaning of things, social capital is closely related to the quality of citizenship.
Francis Fukuyama	Social capital includes the unofficial rules and standards, which encourage cooperation between two or more individuals (2000). Social capital includes the shared values and standards that promote social co-operation evidenced by real social relationships (2002).
World Bank	Social capital involves institutions, relationships, norms that shape the quality and quantity of social interactions. There is evidence that social cohesion is important for societies that can flourish economically and develop sustainably. Social capital is not only the sum of the institutions that make up a society - it is also the glue that binds us together.

Generally, there are three possible approaches to social capital: micro approach, macro approach and meso approach. Some of the measures are used commonly such as: through personal social networks, social security and the number of members of unions (Praag, Groot, & Brink, 2007), in the study "Structure of Social Capital, Household Income and Life Satisfaction: The Evidence from Beijing, Shanghai and Guangdong Province, China", (Yuan, 2015) examined the relationship between life satisfaction and the three dimensions of social capital structure these are network size, neighborhood cooperation and social participation or some authors used tool variable method to control the contradictory effects of income on social capital. The authors measured social capital

as a single variable, coordinating the number of local groups in a village, relative and non-income, and influential group (Narayan & Pritchett, 1999). The results of the studies usually show the significant impact of social capital on life satisfaction as well as household income (Praag, Groot, & Brink, 2007), the relationship between capital social and income distribution, and examine the relationship between social capital and household income distribution (Robison, Siles, & Jin, 2011). In opposite view, Portes (1998) illustrated in his study "Social capital: its origins and applications in modern sociology," social capital creates constraints within the group, closeness and maybe implicitly limit relations with people outside the group. Similarly, (Fukuyama F., 2001) in the article "Social capital, civil society, and development" also argues that social capital in kinship generates effective support for individuals in their time economic point of difficulty. However, this creates the psychological fear of expanding relations and lack of trust for strangers. Consequently, the economic development of households is very limited.

So far, the importance of social capital has been mentioned in the studies of many different authors in the world. Some point out that social capital has many positive effects, others think it has a negative impacts. According to Fukuyama F., in the economic activities, every individual will reduce the transaction costs due to their social capital (Fukuyama F., 2001). Grootaert C argued that social capital brings long-term benefits to households, especially the access to credit services to generate stable income in the study. , In other hand, According to Portes (1998) the social capital contained in it has at least four negative consequences or Fukuyama (2002), through his research, also pointed to the duality of social capital.

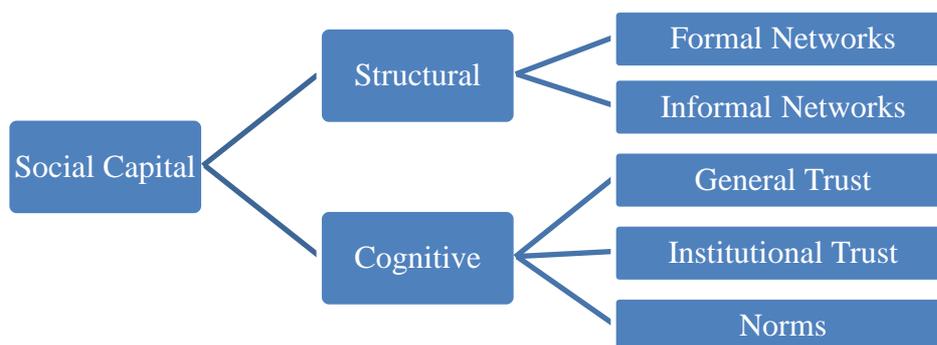
It is admitted that not many studies about the role of social capital on rural development in general and agricultural development specifically have been researched in transition economies so far. A very comprehensive overview about research on social capital in Central and Eastern Europe has been presented by Mihaylova (2004). While the number of studies about the impact of social capital on economic development is increasing, there are only a few focused on rural area or agricultural development.

This paper examines the determinants of social capital and its impacts to the social capital in rural area of Vietnam. This study provides a different way of looking at the household income in rural market and thereby advances our understanding of social capital. The remainder of the paper is organized as follows: Section 2 presents the research method, including the model, data and estimation techniques. Section 3 discusses the empirical results and Section 4 concludes the paper.

## **2. Method**

### ***2.1. Conceptual framework***

Theoretical literature mostly agrees that social capital consists of different components, which are more or less interrelated. The elements of social interaction can be divided into two parts: structural aspect, which facilitates social interaction, and cognitive aspect, which predisposes people to act in a socially beneficial way.



**Figure 1. Aspects of Social Capital**

The structural aspect includes civic and social participation, while the cognitive aspect contains different types of trust and civic norms, also referred to as trustworthiness. Although there has been some inconsistency concerning the relative importance of the cognitive and structural aspects of social capital, it could be assumed that these two sides of the concept work interactively and are mutually reinforced. Another important outcome of being involved in different types of networks is that personal interaction generates relatively inexpensive and reliable information about trustworthiness of other actors, making thus trusting behavior less risky. On the other hand, diffused interpersonal trust indicates the readiness of an actor to enter into communication and cooperation with unknown people. Based on these relationships, it could be shortly summarized that social interaction requires communication skills and trust, which, in turn, tend to increase through interpersonal collaboration. Therefore, various dimensions of social capital should be taken as complements, which all are related to the same overall concept of social capital (Parts, 2009).

Parts (2013) has divided the determinants of social capital into two main groups, which are a group of socio-demographic factors and a group of contextual factors. Accordingly, the first group consists of individual characteristics such as personal income, level of education, family, social status, personal experience and motivation to invest in social capital. Meanwhile, the other one is a collection of characteristics related to the community and nation, such as the overall level of development, quality and equity of formal institutional, resources allocation, social polarization and forms of cooperation and trust.

In this study, we consider the idea of Parts (2013) that divide social capital into 2 parts: socio-demographic factors and contextual but we redistribute all determinants of two group into two scope of analyze: internal-household and external-household social capital with hope that useful recommendations for both policy improvements and household decisions in each of different scope can be made based on the findings of this study.

To analyze the contribution of social capital to household income, we follows the conceptual framework of (Bourdieu, 1986) that social capital is seen as one class of resources available to households for generating income. The household owned an asset which can be physical (land, equipment, cattle), human capital (years of schooling and work experience) and social capital. The household combines these capitals to engage in productive activities, either in family business or in the external labor market. This process

involves making decisions about the labor supply of each household member and acquiring a number of productive inputs (agricultural inputs, credit) and services (education, health), which may need to be combined with labor supply in order to generate income. In this conceptual framework, household income will be modelled using human, social and to some extent physical capital, in a combination with regional and household specific characteristics (Grootaert and Bastelaer, 2002). The full specification of the model is as follows:

$$Income = f(H_j, Physical, Human, Social) + u_i \quad (1)$$

Where: Income = Total income per year of Household,  
 $H_j$  = Household others characteristics,  
 Physical = Household Physical Capital,  
 Human = Household Human Capital,  
 Social = Household Social Capital, and  
 $u_i$  = error term.

To delve into the impact of social capital on income under different analytical perspectives, we will shift the model (1) to:

$$\ln(Income) = f(InternalSC, ExternalSC, other\ capital, H_j) + u_i \quad (2)$$

The internal-household social capital group includes 6 variables related to inheritance, age, education, marital status, children; while the external-household social capital consist of 11 variables related to the community, level of development, formal institutional, forms of cooperation and trust.

## 2.2. Data

Data is taken from the Vietnam Access to Resources Household Survey (VARHS) of the survey 2014. The VARHS 2014 was carried out in the months of June and July of 2014 and had the participation of 3,648 households in rural areas of 12 provinces in Vietnam. These provinces have the similar rate of population who live in urban at around 20%, except for Lam Dong and Khanh Hoa. Furthermore, people living in these 12 provinces also have the same income level which is lower than the average figure of Vietnam.

Household survey is a critical part of data collection, which aimed to capture households' actual participation in local institutions, their use of services, and information that identifies the welfare level of households. The remarkable questionnaires can be divided into five sections: (i) Demographic information on household members; (ii) Household economy: income, expenditure...; (iii) Interactions of household member with their relationships; (iv) Participation in local institutions; (v) Perceptions of community trust and collaboration.

Table 2 in appendix provide definitions of variables and descriptive statistics.

## 3. Results

The households' characteristics were summarized in Table 2 in the Appendix. The average household's head is 51 years old, mostly female and married, have two children. Members in household generally take part in 2 community groups, and more than half of them think there are people who can't be trusted in these groups. About 20% of the

household's head is willing to cooperate with others in commune to work in farm. The results also show that 59% of them received information about farm from their kinships or friends, and about 40% obtained from media, local government. The internet is not common yet when only about a quarter of household use it.

As the panel data of VARHS is only for the year 2014, this study proposed multi variate regression OLS to estimate the impact of social capital on rural household income.

We test the hypothesis by the model of each kind of factors and then combine all the factors to get the final answer in Table 3.

**Table 3. Impact of Social Capital on Household Income**

<b>Ln_income</b>	<b>Coef.</b>	<b>Std. Err.</b>	<b>T-statistic</b>	<b>P&gt;t</b>	
Inherited_plot	0.01654	0.02553	0.65	0.517	
Age	0.02977	0.00560	5.32	0.000	
Age_squared	-0.00023	0.00005	-4.66	0.000	
Gender	0.12402	0.04420	2.81	0.005	
Marital_status	0.18797	0.04969	3.78	0.000	
Num_child	0.28315	0.02721	10.41	0.000	
Child_squared	-0.02996	0.00419	-7.14	0.000	
Education	0.12306	0.01254	9.81	0.000	
No_Diploma	-0.11329	0.03834	-2.96	0.003	
Num_group	-0.00975	0.01592	-0.61	0.540	
Trust	-0.05158	0.02685	-1.92	0.055	
Num_help	0.00238	0.00255	0.93	0.351	
Cooperate	-0.05636	0.03262	-1.73	0.084	
Mem_gov	0.17465	0.04892	3.57	0.000	
Friend_gov	0.07180	0.02875	2.5	0.013	
Info_relationship	-0.03587	0.03108	-1.15	0.249	
Info_media	0.05356	0.02967	1.81	0.071	
Info_gov	0.07788	0.03035	2.57	0.010	
Info_seller	0.06898	0.03103	2.22	0.026	
Internet	0.34039	0.04015	8.48	0.000	
Rural	-0.09329	0.05651	-1.65	0.099	
Poor	-0.46652	0.04150	-11.24	0.000	
Ln_lane	0.04163	0.01116	3.73	0.000	
Ln_living_space	0.24426	0.02921	8.36	0.000	
Intercept	8.08036	0.19169	42.15	0.000	
<b>Number of obs</b>	<b>=</b>	<b>3,648</b>	<b>R-squared</b>	<b>=</b>	<b>0.31</b>

According to the results described in Table 3, each internal-household social capital has a positive impact on household income. Specifically, households inherited from the previous generation will earn about 1.65% higher income, and if the head of household has

spouse and children, their income is higher than that of household's head who lives alone. In addition, household's head who are reputable by age and education will have a better life. The results show that people who reach the age of 60 are the best earners. However, as they get older, the marginal income ratio is negative (-0.002%), which decreases income. The lack of diploma makes the household income 11% lower than those with diplomas.

External-household factors also have impacts on the household's income. Households with family members working in public agencies have a 17% higher income than other households. Moreover, those who have relations with civil servants such as friends and neighbors also have a higher income than the normal approximately 7.2%. In addition, information related to production also significantly affects the living standards of households, which one receive information on seed, fertilizer, irrigation, disease, etc., from official sources such as the media, local authorities have high income - households who receive such information from friends and acquaintances have lower income than average for about 3.6%. Also from this, households that have access to the internet have higher productivity than others.

Some previous studies have suggested that the number of social groups that household members participate in will affect the wealth of the household, but our study shows that the number of these groups do not effect on household income in Vietnam.

As shown in Table 3, most of the factors of social capital have a positive effect on household income. The coefficient value of the Trust variable is negative, prove that people who are always wary of the social will lose the opportunity to cooperate with others to generate higher incomes. In addition, the negative value of the cooperate variable shows that some people are eager to collaborate with others but have yet to find opportunities so their income is still low.

The regression model used in Table 3 has two variables with the square of another variable, Age\_square and Child\_Squared. These two variables are included to assess the specific impact of that factor on income. The results in Table 3 show that these factors only have a positive effect on household income when it reaches a certain threshold. When crossing this threshold, it may reduce the income of the household. The age of the household's head increases from 20 to 60-65, the income of the household's head increases, but when the age exceeds 65, the income decreases as the age of the household's head increases. Thus, as the age of the household's head rises, they accumulate more social capital and increase incomes. However, when the working age is over, the labor productivity of the household's head will decrease and when the impact of this exceed the influence of social capital, the household income will be dragged down.

### **Impacts of Social capital on Household Income in term of access to credit**

Table 4 confirms the importance of financial associations and commune authorities for access to credit: Households accessing credit through these official organizations have higher incomes than those who access credit from other sources. When households are approached by unofficial organizations and advertised for credit, a high risk of fraud may occur.

**Table 4. Social Capital and Household Income, access to credit**

<b>Ln_income</b>	<b>Coef.</b>	<b>Std. Err.</b>	<b>T-statistic</b>	<b>P&gt;t</b>
Inherited_plot	0.02039	0.02589	0.790	0.431
Age	0.02839	0.00565	5.030	0.000
Age_squared	-0.00024	0.00005	-4.790	0.000
Gender	0.12382	0.04427	2.800	0.005
Marital_status	0.18592	0.05017	3.710	0.000
Num_child	0.11839	0.01206	9.810	0.000
Child_squared	-0.02996	0.00419	-7.14	0.000
Education	0.11582	0.01263	9.170	0.000
No Diploma	-0.10850	0.03806	-2.850	0.004
Num_group	0.00099	0.01625	0.060	0.951
Trust	-0.05213	0.02714	-1.920	0.055
Num_help	0.00339	0.00246	1.380	0.168
Cooperate	-0.05093	0.03389	-1.500	0.133
Mem_gov	0.18958	0.04852	3.910	0.000
Friend_gov	0.08061	0.02822	2.860	0.004
Info_relationship	-0.06619	0.03436	-1.930	0.054
Info_media	0.07405	0.03024	2.450	0.014
Info_gov	0.05043	0.03318	1.520	0.129
Info_seller	0.06985	0.03157	2.210	0.027
Internet	0.36404	0.03978	9.150	0.000
Rural	-0.09012	0.05720	-1.580	0.115
Poor	-0.47452	0.04246	-11.180	0.000
Ln_lane	0.06242	0.01156	5.400	0.000
Ln_living_space	0.24435	0.02909	8.400	0.000
<b><i>Info_credit</i></b>				
From commune authorities	0.06031	0.05529	1.090	0.275
From extension agent/meeting	-0.02590	0.05581	-0.460	0.643
From neighbours/friends/family	0.12546	0.05413	2.320	0.021
From radio, TV or newspaper	-0.07357	0.04712	-1.560	0.119
From financial associations	0.21741	0.08894	2.440	0.015

From all sources	0.16769	0.05545	3.020	0.003
Intercept	8.09566	0.19508	41.500	0.000
<b>Number of obs</b>	<b>= 3,648</b>	<b>R-squared</b>	<b>=</b>	<b>0.3225</b>

Households with access to credit from financial associations and commune authorities will have a higher income than other households, about 21.74% and 6.03%. Households access credit from other organizations and advertising can lead to financial losses, reduce household incomes.

### **Impacts of Social capital on Household Income - Provincial effects.**

In this section, we consider the provinces as a dummy variable in the model to examine the income difference in each locality. This may indicate that each locality also stockpiles a social capital, and people in the locality will benefit from this source of capital and increase their income. Dummy variable Province is higher level of social capital, which is different from the social capital provided in this article. This is an aggregation of other external-household social capital which the current study can not be determined.

**Table 5.** Impacts of Social capital on Household Income. Province Effects

<b>Ln_income</b>	<b>Coef.</b>	<b>Std. Err.</b>	<b>T-statistic</b>	<b>P&gt;t</b>
Inherited_plot	-0.01771	0.02696	-0.660	0.511
Age	0.02402	0.00559	4.300	0.000
Age_squared	-0.00021	0.00005	-4.150	0.000
Gender	0.12007	0.04331	2.770	0.006
Marital_status	0.19649	0.04860	4.040	0.000
Num_child	0.12221	0.01172	10.430	0.000
Child_squared	-0.02996	0.00419	-7.14	0.000
Education	0.10543	0.01322	7.970	0.000
No_Diploma	-0.10068	0.03731	-2.700	0.007
Num_group	0.03036	0.01558	1.950	0.051
Trust	0.01935	0.02904	0.670	0.505
Num_help	0.00382	0.00263	1.450	0.146
Cooperate	-0.04583	0.03205	-1.430	0.153
Mem_gov	0.17342	0.05011	3.460	0.001
Friend_gov	0.08335	0.03094	2.690	0.007
Info_relationship	-0.01345	0.02930	-0.460	0.646

Info_media	0.04998	0.03030	1.650	0.099	
Info_gov	0.02076	0.02947	0.700	0.481	
Info_seller	0.04534	0.03199	1.420	0.156	
Internet	0.34450	0.03952	8.720	0.000	
Rural	-0.05277	0.06204	-0.850	0.395	
Poor	-0.43669	0.04352	-10.030	0.000	
Ln_lane	0.04208	0.01343	3.130	0.002	
Ln_living_space	0.25415	0.02980	8.530	0.000	
<b><i>By Province</i></b>					
Dak Nong	0.19727	0.07212	2.740	0.006	
Dien Bien	-0.38635	0.06497	-5.950	0.000	
Ha Tay	0.16593	0.05895	2.810	0.005	
Khanh Hoa	0.11151	0.07389	1.510	0.131	
Lai Chau	0.04612	0.06569	0.700	0.483	
Lam Dong	0.24330	0.07951	3.060	0.002	
Lao Cai	-0.16472	0.05362	-3.070	0.002	
Long An	0.26839	0.06855	3.920	0.000	
Nghe An	-0.15550	0.06899	-2.250	0.024	
Phu Tho	-0.09655	0.05877	-1.640	0.100	
Quang Nam	-0.12832	0.05728	-2.240	0.025	
Intercept	8.30179	0.19112	43.440	0.000	
<b>Number of obs</b>	=	<b>3,648</b>	<b>R-squared</b>	=	<b>0.3418</b>

The results in Table 5 show that Long An and Lam Dong are the two provinces with the highest level of social capital at the local level, increase the income of local residents by 26.8% and 24,3% respectively. Provinces such as Dien Bien, Lao Cai, Nghe An, Phu Tho and Quang Nam have much lower social capital than average of studied provinces. As a result, people in these provinces also have lower incomes compared to other provinces.

#### **4. Discussion and Conclusion**

This study estimated empirically the impact of social capital on household income in the case of Vietnam. The focus was on households' relationships in community - determinants of social capital which is particularly relevant for households' day-to-day decisions affecting their income. The basic data indicated a positive correlation between social capital and household income: households with high social capital have higher income. Three models of household income were used which control relevant household and

location characteristics to estimate the contribution of social capital to household income. The underlying structural equations treat social capital as an input, together with human and physical capital, in the household's production function. The effects of social capital operate through (at least) three mechanisms: sharing of information among relationships, reduction of risk, disadvantage results and improved household decision making.

We measured social capital of the household along two aspects: internal factors (by inheritance, gender, age, education, marital status, etc.) and external factors (such as community, relationships, trust, etc). Among these, the strongest effects were found to come from:

**(i) Interaction between family members:** The household which has head's partner and children live together can earn a higher income than the other household by a proportion of about 18.8 and 28.3. This implies that, every household should have parent and children - This could push their motivation and even make them being satisfied about their life in both mental and physical aspects.

**(ii) Charisma of household's Head:** Higher education levels and having a proper diploma cause household's head to obtain charisma and then easier to earn higher income. The household' head who has not got any diploma has a lower income by approximately 11.3% than others. This recommends the members of household should persuade higher education to enhance their living standards in the future and it also suggests the authorities should improve education policy for the rural area.

**(iii) Trust and cooperation and relationships:** The household that always get precaution with others usually lose the opportunity to cooperate with other. This causes household to be isolated from social and lower their chance to earn money. According to the result showed on table 3, a decrease of about 5.15% in income happened to the wary household. In contrast, the one that having relationship with public officer earn 17.46% (in case of household member) and 7.17% (in case of friendship and other relationships) higher. This imply that, household should interact with many others to establish relationships and rise up the chance to cooperate because of the truth that it could benefit them in the future.

**(iv) Information collected from official institutes and associations:** In formal associations and institute, the potential pool of knowledge to be shared is larger, more accurate and hence the potential benefit to members is higher. This kind of social capital reduces the probability of being a victim of fraud and avoid the disadvantage result in business. Besides, the formal institutes like public authorities sometimes can orient household to achieve better. Social capital also have several long-term benefits, such as better access to credit and a resulting better ability to smoothen out income fluctuations by borrowing and/or accumulating assets. However, some kind of social capitals could deteriorate the household's status. For example, households sometimes receive information about access to credit in the informal channel like junk advertisement or from someone in the village, then they may access to the credit that provided by usurers. As a result, they are forced to bear the burden of repayment and continuously deteriorate their situation. In conclusion, we suggest that the household should make decisions based on official

information collected from formal institute or reliable sources other than rumors or subjective opinions of some acquaintances.

In summary, this study for Vietnam found compelling empirical evidence that local social capital makes a significant contribution to household income, other than human capital and other household assets. The use of household-level data in this paper to quantify the impact of social capital is rarely studied in the literature of social capital. This is also one of the first study which quantifies the effects of two different factors, internal household and external household, of social capital on household income.

Our findings support a policy by donors and governments to invest in social capital - either directly or by creating an environment friendly to the connection of local associations. Our findings also indicate that investments in local social capital deserve to be part of poverty alleviation programs since the returns of investment in social capital are larger than others for rural household. Lastly, our findings provide a proof that there are many other determinants of capital that are latent in province-level. Further researches should determine those factors to improve the knowledge about social capital structure. Along with that, other potential study should test the case on other countries to confirm the findings of the Vietnam.

## Appendix

**Table 2.** Definitions of variables and descriptive statistics

<b>Variables</b>	<b>Description</b>	<b>Mean</b>	<b>Std. Dev.</b>
<i>Dependent Variable</i>			
Ln_income	Natural Logarith of Total income	11.0625	0.9627
<i>Independent variables</i>			
<i>Internal household determinants</i>			
Inherited_plot	Agricultural plot from parent (1 = yes, 0 = no)	0.3410	0.4741
Age	Age of household's head (years)	51.2788	14.1220
Gender	Household head (1 = male, 0 = female)	0.2009	0.4008
Marital_status	Marital status (1 = married, 0 = otherwise)	0.8202	0.3841
Num_child	Number of children	2.0959	1.3965
Education	Grade finished (0 = didn't finish 1 <sup>st</sup> , 1 = 1 <sup>st</sup> , 2 = 5 <sup>th</sup> , 3 = 9 <sup>th</sup> , 4 = 12 <sup>th</sup> but no bachelor degree, 5 = bachelor degree obtained)	2.1911	1.3377
No_Diploma	No diploma higher than highschool (1 = yes, 0 = no)	0.7651	0.4240
<i>External household determinants</i>			
Num_group	Number of community group household take part in	1.6584	1.0355
Trust	There are people you can't trust in this commune	0.4348	0.4958

	(1 = yes, 0 = no)		
Num_help	Number of people that household believe that they could be asked for help	4.4789	4.9919
Cooperate	Household's head is willing to cooperate with others (1 = yes, 0 = no)	0.2078	0.4058
Member_gov	Member of household in Commune/Government (1 = yes, 0 = no)	0.0554	0.2287
Relationship_gov	Relatives outside household in Commune/Government (1 = yes, 0 = no)	0.4046	0.4909
Info_relationship	Information from relatives, friends (1 = yes, 0 = no)	0.5877	0.4923
Info_media	Information from media (1 = yes, 0 = no)	0.3978	0.4895
Info_gov	Information from government (1 = yes, 0 = no)	0.4515	0.4977
Info_Seller	Information from seller (1 = yes, 0 = no)	0.4613	0.4986
Internet	Household use Internet (1 = yes, 0 = no)	0.2464	0.4310
<b><i>Other variables</i></b>			
Rural	Household is living in (1 = rural, 0 = urban)	0.9583	0.1999
Poor	Classified as poor (1 = yes, 0 = no)	0.1875	0.3904
Ln_lane	Natural logarithm of the area on which household has rights to work	8.2811	1.4725
Ln_living_space	Natural logarithm of the space in which household live	4.2032	0.5430

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# RESEARCHING PRIORITY TECHNOLOGY OPTIONS: LESSONS LEARNED FROM LOCAL AND EXCELLENT LOCATION IN THAI NGUYEN PROVINCE

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## Abstract

*From the development reality of each country, each locality, due to its limited and scarce resources, can not simultaneously develop its branches and technical fields. Industry priority to develop in the most effective way, in accordance with the international context of each stage. To create a momentum for accelerating industrial development in the short term, it is necessary to identify and narrow down the scope of priority industries to focus on development, to avoid widespread investment. not tall. To develop priority industries in order to make optimal use of local comparative advantages, creating a spillover for the development of the entire industry.*

**Keywords:** *Industry, Job Priority, Leadership, Supporting Company, first development for development.*

## 1. Introduction

Industry is the main economic sector of the economy, industrial development is the indispensable task for successful implementation of industrialization and modernization of the country. The goal of our country is to strive to become an industrialized country in the modern direction. In order to achieve that goal, we need the continuous effort of all sectors of industry. However, it is not possible at the same time to develop all sectors of the industry effectively, which need to be selected, prioritized for development. They have to be the leader, have the strength and create the competitive edge to use the country's finite resources.

## 2. Theoretical bases for selection of priority industries

Due to the limited national resources, it is necessary to select priority industries to develop in the most effective manner in accordance with the international context of each stage. Choosing the development of industry priorities comes from unbalanced growth or "growth theory."

Extreme growth theory was proposed by French economist Francois Perrous (1903-1987) in 1955. In his view, setting up areas with large firms was a strong attraction, Economic activity in the most dynamic areas creates the "growth pole" of a locality. These growth poles will have the power to spread, attract the flow of goods, materials and labor

in other areas. It is this spillover effect that will spur the formation of the economic and trade linkage space as well as the formation of a set of economic links between the growth pole and the surrounding area. Each such pole of growth has a certain role, which gradually grows and spreads along other regions under the "oil spill." Growth and development can not be ubiquitous anywhere with a critical resource that first focuses on some of the more advantageous spots and then spreads across different channels with effects. Different for the economy.

A. Hirschman and F. Perrons argue that it is impossible and indispensable to ensure sustainable growth by maintaining an interdisciplinary balance structure for all nations. Unbalanced development will create investment incentives. Because if supply by sentence in all sectors will eliminate the investment motivation to improve production capacity. Therefore, in order to be able to develop, it is necessary to focus on investing in certain industries, creating a "push" to motivate and induce investment in other sectors in the form of number theory , which led to the development of the economy. At each stage of development, the role of "growth pole" of the sectors in the economy is not the same. Therefore, it is necessary to focus resources (scarce capital) on specific areas at a given time. In the early stages of industrialization, developing countries lacked sufficient production resources and were unable to simultaneously develop all modern industries. And so, unbalanced development is almost a mandatory choice.

The author argues that the theory of link development in his view is the formation of economic spaces, key economic sectors to promote development with the choice of the first polarized development, creating The spillover effect acts as the "head", pulling the development of other regions and branches, thereby creating conditions for the economy to develop strongly. This is authored to use your topics to your T2018-07-04. It can be said that the theory of growth has an important significance in choosing the sector structure and key areas for investment development. The formation of branches and territories that develop as development poles will provide the impetus for the whole economy to develop and to be a development choice appropriate to the conditions and resources of developing countries. Although there is a limitation in causing uneven development between sectors, regions and territories, extreme growth theory has contributed to the formation and selection of priority sectors and spaces. The key to development investment. Such branches and spaces as the poles develop, leading the way to attract the development of the remaining sectors. So, in the context of international economic integration, Francois Perrous's view of concentrating economic activity in the most dynamic regions to create "growth poles" is justified. Choosing the right industries in a right way, coupled with clever and effective incentives, will drive the industry.

The choice and development of priority industries are in industrial policy. Industrial policy is defined as all policies that support the production and development of industries within a country. When policy makers weigh the question of what industrial policy is good for growth and development, to simplify this discussion, two types of solutions are often proposed.

It can be said that the development of priority industries is a popular tool for implementing industrial policy. The development of priority industries to change the production structure of the priority industries. These are the basic, spherical and advantageous sectors of development. In the speech "Identifying Preferred Industries in National Industrial Policy" by author Vu Thanh Tu Anh, Fulbright University: The author has given some international experience of Japan, Korea, Taiwan on priority industrial development. The author argues that Vietnam should not pursue preferential policies for some specific industrial products. Instead, the Government should implement a policy of prioritizing the development of a number of "capacity areas" in line with the country's long-term development goals and strategies. The experience of countries in the world with many successes such as Japan, Korea, Taiwan (China), Thailand show that their industrial development process is in stages, The industry has a competitive advantage, in that precision engineering plays an important role in all industries. Based on analysis and comparison of development conditions across countries, the author mentions a number of principles for selecting priority industries for Vietnam based on 12 basic principles such as comparative advantage comparative, spillover effect, high growth rate, etc. The development of priority sectors for the development of priority industries is appropriate. the industry is strong, so that the nucleus pulls the development of other industries.

### **3. Experiences of some localities in the selection and development of priority industries**

#### **Experiences of Binh Duong**

Binh Duong is an industrial province which has high growth rate and high contribution in GDP. In 2016, the industry accounted for over 63% of the total economy. For the whole country, the industry contributes more than 10% of production value and accounts for 11% to 12% of export turnover (2016). In the process of economic development, Binh Duong is always interested in developing priority industries because it is a breakthrough for the province to develop rapidly and sustainably in the process of industrialization. Therefore, Binh Duong has implemented the development of priority industries. The province strives to become one of the major centers of the country in terms of producing industrial products to support the textile and garment and footwear industries and achieve high competitiveness in the region by 2020. In addition, the fields of pharmaceutical, electronics, telecommunication, informatics and mechanical engineering will become the main growth drivers of the industry and contribute significantly to the province's export turnover in the period. 2010 - 2020 period.

Corresponding to each stage, in order to be suitable with local development conditions, the province has developed appropriate priority industries. In the period of 2008 - 2010, the province has prioritized the development of major industries such as textile and garment supporting industries; supporting industry of leather and footwear industry; agricultural, forestry and food processing; chemical industry, rubber (basic chemicals, pharmaceutical chemistry, cosmetics, natural rubber products). In the period of 2011 - 2015, the province has prioritized the development of supporting industries in the textile

and garment industry; supporting industries in the footwear and footwear industries, agro-food processing industry; chemical industry, rubber (basic chemicals, pharmaceutical chemistry, cosmetics, natural rubber products). In the 2016-2020 period, the province shall prioritize the development of supporting industries in the textile and garment industry; supporting industry of leather and footwear industry; chemical industry (pharmaceutical chemistry).

The province has a number of policies to promote the development of priority industries such as land support, land promotion, trade promotion and budget support. The demand for land in industrial parks when new production projects are invested, expanded investment and in-depth investment. In terms of trade promotion, Toc always focuses on investing in brand building and development, providing cost-effective support to enterprises to develop international standards for quality management, introducing information brochures Products at fairs, exhibitions, websites, ... To provide a part of the budget with the maximum support for research and application activities related to priority industries, spearhead.

Visit the choice of the authorial suitcase for each stage, conditional handling of the state, industrys are published are taken. Các sector ưu việt giai đoạn 2016-2020 đạt được kết quả phát triển tốt. Chẳng hạn, lĩnh vực công việc hỗ trợ ngành dệt may có thể đảm bảo cung cấp sản phẩm nguyên liệu trong nước đạt tỷ lệ bình quân 40% năm 2010, tăng 50% năm 2015 và phấn đấu đạt 60% vào năm 2020. Năm 2016, tỉnh có 24/27 lĩnh vực công nghiệp xuất nhập khẩu tăng trưởng so với năm 2015; which has a 13 the group of product increase on 10%, the file of the leading row of the markets output and stable and the best of the growth of growth so với growth of growth như: ngành dệt tăng 14%; da và các sản phẩm có liên quan tăng 15,2%; sản phẩm điện tử tăng 20,1%; giường, tủ, bàn, ghế tăng 9,4%... Bình Duong (GRDP) increased 8.5%; collection of the first popular 108.6 million; Business establishments continue to perform in the right direction, in which the rate of industrial use is 63%, services 23.5% and agriculture only accounts for 4.3%. Over the past five years, the industrial index of Binh Duong has increased by nearly 11% annually. Total budget revenue in 2016 is estimated at 40,000 billion VND, gaining 103% of the estimate, up 9% over the same period, contributing to motivation for the new contest. The province's first environment continued to improve; Water absorption is the first to date to reach US \$ 25.7 billion; In particular, in 2016, the province attracted over US \$ 2, including a number of large-scale foreign projects that are important to the province in the newbie. In 2017, the province has 28 industrial zones and 10 industrial clusters; There are symbols for water in the construction of integrated facilities, together and representative, in terms of speed attraction, management products and environmental protection such as VSIP 1, 2, My Phuoc, Dong An ... has attracted 2.4 billion USD investment projects. To date, the province has 2,827 projects with total investment capital of US \$ 25.7 billion (13% of projects and 8.5% of total capital). Binh Duong is one of five provinces attracting investment of 20 billion USD.

In summary, thanks to the preferential policies for the development of industries suitable to each stage, the province's industry has overcome many harsh difficulties,

continuously maintaining and improving the pace of development, gradual transition from scattered production to concentrated production to form industrial zones and clusters; Strongly attracting investment capital to open new industries and products, forming large-scale enterprises, especially in the foreign investment sector, creating conditions to attract laborers and boost export. The industry is increasingly asserting its position as the key economic sector, the driving force for Binh Duong province in the current period.

### **Experience of Dong Nai**

Dong Nai is one of the three corners of the southern development triangle, including Ho Chi Minh City - Binh Duong - Dong Nai, with a strong industrial development in the south. In the period of 2006 - 2015, the province has shifted to develop the industry in parallel with the strategy of sustainable development, the industrial growth rate is 13-14% per year. Thanks to investment in the right direction, priority is given to the development of key industries with comparative advantages, which make up a significant contribution to the economy of the province. In the process of development, Dong Nai prioritizes the development of hi-tech industries, the production of accessories and auxiliary materials for import substitutes, and the processing of agricultural products and foodstuffs. At the same time, the province encourages labor-intensive industries in rural, remote and isolated areas; Transferring some industries from the form of processing to the production of finished products, direct export to increase the value. To restructure the industry with the priority of attracting investment in hi-tech industries and supporting industries; Applying technology to save raw materials, fuel, materials and energy. To concentrate on intensive investment in developing high-quality and competitive industries. From 38 factories operating in Bien Hoa Industrial Zone (now Bien Hoa Industrial Zone I), after the liberation of the South, the province has 13,700 industrial establishments operating by 2015, including: 40 state enterprises (Central 32, local 14); 12,940 non-state owned enterprises, 725 foreign-invested enterprises. The industrial production value in 2014 has increased 200 times compared to 1986. Over 30 years of construction and development, Dong Nai industry has grown in both quantity and quality and is moving rapidly into the field. high technology, supporting industries, high value added under the green growth strategy and sustainable. Up to now, the share of industry accounts for over 57% of GDP, playing an important role in the annual economic growth of the province.

In the period of development up to 2020, with a vision to 2030, the province aims to shift the industrial structure in the direction of prioritizing hi-tech industries, supporting industries and key industries in order to create high value added in industry, ensuring the sustainable development of the province; Appropriate industrial distribution and promotion of advantages of each locality; To effectively promote the foreign-invested economic sector and view this as a resource to accelerate the process of industrial restructuring. To concentrate investment on industrial development along the direction of giving priority to development spearhead industries: mining, building materials, mechanical engineering. Developing industries with comparative advantages in the locality such as: agro-food processing industry in association with local raw materials, shoe and leather industry,

textile and garment industry. To attach importance to attracting foreign investment capital to open hi-tech industries such as electricity, electronics and informatics which cause less environmental pollution. Encourage the development of traditional trades from households to meet local demand.

Particularly for priority sectors, the province has orientations and identified suitable development positions:

For agro-food processing industry: This plays an important role in the economic development of the province and has a strong impact on agriculture and rural areas. Create strong development of the agricultural sector, diversify agricultural products and increase the value of processed agricultural products.

For the mechanical engineering industry: To strengthen the linkage and cooperation between economic sectors, between the central and local levels, between the domestic economy and the foreign-invested economy, to focus on increasing the institutional capacity. Create machinery, equipment and repair services for the national economy. To attach importance to the development of the mechanical engineering industry in service of agricultural and rural mechanization.

For the mining industry and production of construction materials: This is a branch of the local strength, the products have advantages such as mining and processing stone, sand, clay, kaolin, leveling materials. To make materials for building materials such as bricks and tiles, ceramic tiles, porcelain tiles, sanitary ceramics, cement additives, lightweight concrete, fine art ceramics ....

For the textile, garment and footwear industry: It has been identified as a key export industry of Dong Nai province over the past time, the development of the industry contributes to the employment of laborers. attracts the most labor in the industry.

For the electricity and electronics industry: It is a high technology branch, associated with the modern scientific and technical level. Its products include electrical engineering products, electric and electronic equipment, electrical materials, communication equipment ...

For the chemical and rubber industries: Dong Nai's chemical, rubber and plastics industry is one of the industries with a relatively large proportion, with diversified products for production and consumption such as fertilizer, tire and tube products. , rubber products, pharmaceutical chemicals (for people and animals), consumer chemicals such as detergents, cosmetics, paints, plastic and plastic products.

For the wood processing industry, bamboo: Forest product processing is one of the traditional occupations of Dong Nai, the market is relatively stable, the labor force is technically and labor cheap, the product is beautiful, high quality, prestigious. Credit in the market at home and abroad. The wood processing industry is one of the fast growing industries in recent years, due to the market and the shift from some countries in the region.

Thanks to the right policy in industrial development, especially in determining the priority industries, in 2016 and 2017, Dong Nai will still maintain its position as one of the

leading localities in the country. on industrial development with a diversified and diversified industry structure, high growth rate, structure and distribution of industrial establishments in a more synchronized and rational manner, proportion of hi-tech projects, industry increasing support. 31/35 industrial zones have completed infrastructure, 4 industrial complexes complete infrastructure, 19 are investing in infrastructure. In 2016, gross domestic product (GRDP) increased by 8.2% compared to 2015.

In order to further strengthen the development of the industry and achieve the goals set for the development of priority industries, the province has put forward a number of measures such as: investment in and investment in industry , not to attract mass investment but to attract investment with conditions, prioritize investment in priority industries of the province, especially high technology and supporting industries, using less labor-friendly, environmentally friendly. Promote investment promotion, promote the potential and advantages of the province to large investors, potential investors. Regarding the planning, speeding up the completion of the infrastructure of approved industrial zones, sub-zones and industrial clusters. To organize the review, evaluation and adjustment of the annual specialized industrial plannings. To promote the development of industries in the southern key economic region in order to form raw material areas for the processing of agricultural and food products.

With the specific objectives and solutions proposed, the province's industrial structure will have positive changes in the direction that the province has chosen in the process of development.

### **Experience of Bac Ninh**

Bac Ninh is considered as a dynamic and modern industrial city in the northern part of Vietnam. Bac Ninh and Thai Nguyen are currently attracting large FDI projects, bringing about a breakthrough in industrial development. Significant development of high technology industry of Samsung Group - Korea in both provinces. In the last 5 years, Samsung Bac Ninh and Samsung Thai Nguyen have many relationships in the common use of labor resources, electronic manufacturing infrastructure. The province has set the target of striving to become a centrally-run city in the 20's of the 21st century towards civilization and modernity. In the 2016-2020 period, the total output of the province will reach 10.5% -11.5% / year, of which industry and construction will increase by 11.3% - 12.6%. In the period 2021 - 2030: industry and construction increased by 6.8% on average. To contribute to the economic restructuring in the direction of industrialization and modernization and trade in services of high level and quality.

Industries that are prioritized by the province include: Manufacturing of components and electronic equipment; Components and electrical equipment will prioritize the production of electronic products for industry, electronics, telecommunication, computer brands of Vietnam, mobile phones, electronic components for production and export; It can also be used in rural areas (through industrial promotion programs and supporting industry development programs). Machinery, equipment and metal processing industries are concentrated in manufacturing molds for the electrical, electronics and

automobile industries; motorbike; dynamo; Agricultural Machinery; Machines used in the agricultural, forestry and fishery processing industry; Rapid development of the software manufacturing industry. This is one of the areas with the highest levels of gray matter, creating great added value and not consuming resources, energy or polluting the environment. In addition, Bac Ninh also develops pharmaceutical, pharmaceutical and hi-tech industries such as nanotechnology, biotechnology and agro-forestry-fishery processing. To serve the export and domestic consumption, especially for the Capital Region and export with the quality of international standards to target Japan, the US, the EU, ASEAN and some markets. other. Major industrial products will be prioritized for development, including: electric and electronic products; Precision mechanical products: mold, molding, plastic injection, metal punching; Pharmaceutical and pharmaceutical products; Products processing agricultural and forest products, food. Thus, from a pure agricultural province, Bac Ninh has emerged as an industrial province and attracted investment from large corporations such as Samsung, Microsoft, Canon, Pepsico and became a dynamic industrial province. the country in recent years.

To promote and exploit the advantages of the province to attract investment, the province will prioritize the development of supporting industries. Enterprises operating in the field of supporting industries in the province developed quite strong in both quantity and quality, mainly in the processing industry. In 2012, the whole province of Bac Ninh has 126 supporting industries, accounting for 10.1% of enterprises in processing and manufacturing, but by 2017, the province has 418 enterprises, which is more than 3 times. The average growth rate of industrial enterprises was 27.1%. The province has focused on forming supporting industry enterprises capable of supplying to big corporations. The number of FDI enterprises in the province now has 272 enterprises with the investment capital of USD 3.1 billion, accounting for 87%, generating 78% of the total production value of the industry, attracting about 80,000 employees. dynamic; Meanwhile, state-owned enterprises have 146 enterprises, with the investment capital of \$ 0.5 billion, attracting about 10,000 laborers. At present, the province has formed a system of supporting industries in three key sectors: electronics, precision mechanics and hi-tech agricultural product processing.

If in 2010, the province mainly imported components, accessories, semi-finished products ... for assembly, so far there has been domestic production to replace imports.

The province always attaches great importance to speeding up the industrialization and modernization, economic restructuring associated with transformation of the growth model; promote comparative advantages, speed up the process of urbanization, continue to implement three strategic breakthroughs associated with economic restructuring, implementation of sustainable development; create breakthroughs to promote service development; To prioritize the development of hi-tech industry and supporting industries. Choosing the right industry in the right way, coupled with the skillful and effective incentive policies, has created a motive force for the whole province's industry. As a result, Bac Ninh's industrial production has jumped with rapid growth recently, making Bac Ninh

one of the leading provinces in terms of economic growth. GRDP average growth of over 15.7% per year. In the period from 2012 to 2016, the industrial production value of the province reached a continuous increase from VND 373,029 billion to VND 705,292 billion, 1.89 times higher than that of 2012. Average growth rate The industrial production value of Bac Ninh province in the period 2012 - 2016 is 17.26% and is the second largest industrial production value in the country, second only to Ho Chi Minh City. In terms of structure, the manufacturing industry has the highest proportion; in 2012 this sector accounts for 99.8% of the total production value of the industry. By 2016, this sector accounts for 99.88% of the total value. whole sector production. The productivity of industrial workers in Bac Ninh province has increased rapidly, with an average labor force of 1,731.4 million VND in 2012 and 2,462 million VND in 2016.

To achieve the goal of becoming an important "link" in the global supply chain of multinational corporations by 2020, in which electronic industry is the key industry; is a place where convergence of enterprises, multinational corporations; Highly competitive localities in international integration. In order to achieve this goal, the province has introduced many large and synchronous solutions. Supporting industry is defined as the main object of development policy as well as solution for sustainable development. Therefore, the province continues to attract FDI into hi-tech sector, research and development sector, do not pollute the environment; Supporting and encouraging domestic enterprises to innovate themselves and meet the standards of participating in the value chain brought by FDI enterprises. It is necessary to thoroughly promote the internal strength of the province and at the same time make full use of domestic and foreign investment sources in the form of joint ventures with foreign countries and with domestic economic sectors. At the same time, to formulate and promulgate flexible economic policies and mechanisms to encourage, attract and attract all economic sectors to invest in supporting industries of the province.

#### **4. Lessons Learned for Thai Nguyen in Choosing Priority Industries**

Thai Nguyen is a province in the Northern Midland and Mountain area with potential and strength in natural resources and has a long tradition in industrial development. In the past years, especially since the re-establishment of Thai Nguyen province (1997), the provincial leaders have grasped the opportunities, put forth guidelines and policies for socio-economic development, industrial development right there have been some successes in economic development. The economic structure of Thai Nguyen province has been shifted positively towards the gradual increase of the Gross Domestic Product (GRDP). In the general economic structure, industry plays an extremely important role, contributing significantly to changing economic structure of the province. The development of Thai Nguyen industry in recent years has achieved positive results and is highly appreciated. However, to date, the development industry has not matched the scale and available resources, low business efficiency, Thai Nguyen is still one of the poor provinces, some socio-economic indicators. lower than the national average. This was made by the author in his T2018-07-04 baseline study. A number of well-known

enterprises, which were the driving force behind the economic development of the whole province, also fell into recession, leading to the bankruptcy of Thai Nguyen Iron and Steel. Industrial enterprises are heavily dependent on foreign direct investment and there is no strong integration to create breakthrough developments, moving from satellite enterprises to integrating deeper into the supply chain. global response. Therefore, in the industrial development strategy, the province has focused on developing a number of areas, emphasizing investment in supporting industries.

Supporting industries in Thai Nguyen have been developed since 2005 to promote the advantages of an industrial province. In 2017, the whole province has 209 supporting industries. Among them, the number of FDI enterprises producing electronic components accounted for the largest number with about 50 enterprises; followed by the production of metal products, the production of ball mill products, steel pipes, cast iron, casting parts of cars, gearboxes. The average annual growth rate of the supporting industry is 59%, accounting for nearly 40% of the province's industrial production value. Manufacturers of supporting industry products can meet the demand for various industries and directly serve the enterprises manufacturing products in the integrated way from the beginning to the end. Typically like: Machinery Parts Joint Stock Company No. 1, Diepel Song Cong, Narime Machinery and Equipment Manufacturing Joint Stock Company manufacturing mechanical products and integrated industrial equipment ... From 2013, many foreign enterprises has invested in support projects for Samsung Group. Notable among them are Dong Yeon Industrial Co., Ltd. (Korea), which manufactures monitors, boards, memory card slots on mobile phones; Bujeon Electronics (Korea) Co., Ltd with electronics factory Glonics Vietnam specializes in producing headphones for mobile phone manufacturers (typically Samsung); Alutec Vina Co., Ltd. (Korea) with factory specializing in manufacturing, processing products from aluminum supporting the field of construction and manufacturing of mobile ...

The products of the supporting industries in Thai Nguyen include diesel engines, gearboxes, motorcycle parts, construction products, electronics industries, etc. Labor force operating in the industry accounting for 32.5% of industrial workers in the province (2017). In terms of quality, the labor force operating in the sector is judged to have a higher level of professional qualifications than other industries, because the characteristics of the SI require workers to be modernized. , specialization and high co-operation. The number of trained workers in this sector accounts for over 90% and has partly met the production requirements of enterprises. In terms of technology level, only 02 enterprises are operating in hi-tech industry. Currently, Thai Nguyen has more than 1,000 individual households involved in the production of SI products, however, the size of the households is very small, each household has an average of 2 laborers, mainly producing steel fabrication work. Construction, machinery, equipment, tools, small tools, semi-craft to serve the needs of the local.

At present, most of supporting enterprises in Thai Nguyen are only supporting satellite for big companies such as Samsung - Korea, Toshiba, ... but not deeply integrated

into the supply chain of supporting products. for large FDI partners to form a network in the global value chain. In 2018, a number of supporting companies such as Disoco will complete technology investments to meet the standards and meet the conditions required to join the global supply chain of major manufacturers in the world. Thanks to the large Samsung projects that are operating effectively in Thai Nguyen, there will be more opportunities for the province to attract Korean businesses to cooperate with local businesses to transfer SI technology. This will help local businesses gain access to new technologies to produce, upgrade their skills, and enable them to stand alone to produce SI to supply large production chains such as Samsung.

## 5. Conclusion

Prioritized industrial development is a right policy of the country and localities to focus resources to prioritize development in a selective way. Therefore, the first task is to identify the priority group of companies depending on each stage, each period of development. Such industries must be spearheaded by other sectors in order to exploit the inherent comparative advantages of the locality in order to bring into full play their comparative advantage, mobilize and efficiently use resources. , enhance competitiveness, promote economic restructuring in the direction of modern. On the basis of the selection of priority industries in a timely manner with the intervention of preferential policies will create the motivation to promote the development of the entire industry. This research will support a great deal in clarifying the research that T2018-07-04 is about.

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# THE POLICY AND DEVELOPMENT ON SUSTAINABLE AND ORGANIC RICE FARMING: A CASE STUDY OF RICE FARMER GROUPS

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## Abstract

*This paper presents the policy and development of sustainable and organic rice farming in Yasothon province in the Northeast of Thailand. The rice farming has been improved and organized by farmer groups and developed and supported by non-governmental organizations. The government has long been trying to implement the policy to promote farmer groups which is called “Yasothon Model”, featured as the platform for sustainable and organic rice plantation. In 1992, the Alternative Agriculture Network (AAN) had been established by farmers and non-governmental organizations (NGOs) as a national network focusing to mobilize resource sharing, network cooperation and lessons learned of their own experiences. Opportunity and development for sustainable organic rice farming in the areas of Yasothon province are also discussed and suggested.*

**Keywords:** policy and development, sustainable and organic rice farming, rice farmer groups

## 1. Introduction

In Thailand, there are all around 5.7 millions of farmer families of which by 3.7 millions or 65% are rice farmers (Rice Research and Development Division, Department of Rice, Ministry of Agriculture and Cooperatives, 2017). Otherwise, it can be said more than half of Thai farmers are rice growers. Especially in the Northeast region, around 9.611 million people or 43.85% earn their living on agricultural activities, such as rice farming, rubber plantation, cassava, maize, and sugar cane planting. But however, those farmers remain confronting a variety of problems, for examples: production cost, water shortage, price falls, being exploited by middle traders, health problems due to chemicals and pesticides, lacking managing skills to increase quality and safe productivity, as well as liabilities arising from agricultural proceedings. No less of them remain having some remaining cumulative debt, they need to borrow from Bank for Agriculture and Cooperatives or from local lenders. Previously and currently, most farmers are still poor and earning less when compared with others with different careers. From a survey, it was found that the size of land-holding by rice farmers tends to shrinking, whereas the production cost for every type of rice growing keeps rising. The Office of Agricultural Economics made a report that the cost for rice production in 2014 was around 4,323 - 5,968 baht/rai, which shows rice production cost keeps rising every year while the net

returns tends to falling, along with farmers get larger debt burden (Office of Agricultural Economics, 2014). Turn to workforce sector, it was found less new generation workers entered to agricultural sector, causing the average age higher in farming workforce due to rice farming has high risk from natural disasters, followed by several other problems from which farmers cannot raise their better living. The problems arising to Thai farmers are namely: 1) there exists limited irrigation system in farming areas, 2) outbreak of pests, 3) lacking quality seeds, 4) high production cost, 5) fickle rice pricing, 6) debt burdens, 7) lacking farmland, 8) less budget for research on rice production and development.

For such problems, many governments of various periods had made their policies for development and problem solution, but discontinuous. Some governments did even create problems rather than solving them, being unsustainable means, just for political gains, leading and causing disadvantage to the country and harming the rice price, and all eventually ended as political conflicts. While some other administration put their effort to enhance organic rice production but confronting with problems on investment capital and market place; whereas, consumers then assumed organic rice more expensive than that normally harvested with chemical use. Moreover, organic rice production needed dedication, attentiveness and knowledge on bio-fertilizer, self-made or bought. Most rice farmers used chemicals, attributing that it was rapid, easy, convenient and job prompt finished with their peers in the same area. No less of them acknowledged that utilizing chemicals and pesticides could harm their health and environment, but remaining the practice. Among them, there was criticizing on using chemicals as a careless means, just for higher return but the cost was also high.

Some NGO leaders with an experience of organic rice farming and who working in this field criticized that farmers, when themselves not really suffered, would not realize to change to the safe farming for their own and consumers, and to decrease production cost and farming debt. Several farmers witnessed exemplars who conducted organic farming which yielded safe and quality productivity, decreasing cost, being no debt or else able to return in due time. Most of those remained unchanged to new developed farming practice, still keeping their old habits and facing the same chronic problems. This is deemed as a socio-psychology of farmers, anyways. Their belief and practice followed traditions associated with commercial propagandas, served by chemical fertilizer traders and millers. Thai farmer practice did associate with official policy, missions of some state agencies concerning farmer development which envisioning attitude and perception on organic rice farming, related to economy, society and environment of the farmers. Thereby, the national 20-year strategic guideline (2017-2036) was drafted focusing on competitiveness relating to agricultural contents, namely developing production and service sectors, establishing stable and sustainable production platform, and promoting small-scale farmers to sustainable and environment-friendly agriculture.

In 2016 - 2017, the project had extended the successful “Yasothon Model” to various networks through integration with provincial agencies and operation in accordance with provincial plans to push ahead raise up efficiency to organic rice production, starting from farming grounds to procession process and marketing management, adjusting paddy

purchase into milled-rice trading to uplift rice prices, including upgrading farming practice for rice farmers to sustain their self-reliance. The targeted areas for expansion are following: 1) Ban Nong Souk Doa, Non Sung sub-district, Muang Udon Thani district, Udon Thani province; 2) Ban Bak Bung-Ar-ngoei, Na Norphai sub-district, Chumphol Buri district, Surin province; 3) Ban Nong Bueng, Chumphol Buri sub-district, Chumphol Buri district, Surin province; 4) Ban Khao Luang 11 (Koklam), Dong Ling sub-district, Kamalasai district, Kalasin province; 5) Ban Khao-insi-ban-hueb, Na Kham sub-district, Renu Nakhorn district, Nakhon Phanom province; 6) Ban Bodaeng Farmer-group, Bordan sub-district, Satingphra district, Songkhla province; 7) Rice-seed production farmer-group, Ban Cherng Sae, Cherng Sae sub-district, Krasaesin district, Songkla province; 8) Ban Sufficiency-economy, Ban Nong Thauy, Takria sub-district, Ranod district, Songkla province; 9) Jana Organic network, Paching sub-district, Jana district, Songkla province; and, 10) Sufficiency-economy Development Learning Center, Ban Nong Sao Thong, Kuan Roo sub-district, Rattaphum ditstrict, Songkla province, (Office of National Science and Technology Development, 2015).

## **2. Objectives of the study**

2.1 To study policies and development on Sustainable Organic Rice Farming of farmer groups producing organic rice in Yasothon province

2.2 To study opportunity and development on Sustainable Organic Rice Farming of farmer groups producing organic rice in Yasothon province

## **3. Research methodology**

This study was conducted using qualitative research methodology, secondary data search, field data collection, in-depth interviews and participant observation, including data analysis and interpretation

## **4. Research findings**

### ***B4.1. Background of policies and organic agriculture in Thailand***

Organic agriculture in Thailand is a merger of 3 main social tides. The first one is the wakening for alternative pathways for farming communities to exit circular chemical agriculture by having a main lead which is the networking for alternative agriculture, composing non-government organizations, academics and farmer leaders. An effort to present new agricultural guidance was set off, under which different names were called such as Natural Agriculture, Organic Farming, Agro-forestry, for example.

The network was established in 1989 by a gathering of NGOs and farmer leaders who were interested in pursuing for new alternative directions to develop agricultural practice in Thailand. At the initial stage of network establishment, main activities were focused on study visits and experience exchanges among NGOs and farmer leaders to find out a common ground for agricultural development in Thailand. By 1992, the network hold a convention in which learned lessons and experiences were analyzed and concluded, together with a guidance of organic agriculture was declared as a prime pathway for alternative organic agriculture in Thailand. The declaration was attributed as the official starting point of organic agriculture in Thailand.

The second tide was an awakening for health issue of consumers which leading to attitude change on public health concerning, and prioritizing daily living henceforth, such as exercising, meditation and eating awareness. The awakening on eating awareness itself did particularly encourage consumers to pay attention on selecting organic products by which the most safety was expected (from chemical agriculture and GMO food). From just the need of consumers, markets for organic products were established; and, the status of organic agriculture was raised from just an alternative production technique up higher onto an alternative means of agricultural and social development. The awakening of consumers had encouraged lots of agencies to seriously pay attention on developing market places for organic products. There had been several agencies set up for trading organic agricultural products, such as Im Boon Center in Chiangmai, Health Products Center in Songkla, for examples. During the same period, Green Net was established by the end of 1993 to act as a national office for distributing organic and natural products produced by small scale farmers to urban consumers, under the concept “Alternative Market”, which later being upgraded to “Fair Trade System” or Fair Trade.

The third tide was an awakening on environment, initiated from efforts to preserve natural resources and the environment, which later extended to the interest on chemical agriculture impacts, which affection to soil, biodiversity, as toxic chemicals, or even to green gas emission which causes global warming.

Convergence of the mentioned 3 tides helped initiate organic agriculture in Thai society since 1990.

Organic agriculture in Thailand has continuously grown up through 2 past decades and was transferred into the expansion phase, resulting from social, economical and political factors; whereas, the social factors could happen in both consumers and producers who began realizing the impacts to health by agricultural chemicals. Thereby, the consumers opted to more selecting food from organic farming, while the producers began to find ways for less chemical use. In the meanwhile, there had been new operators (especially young ones) finding opportunity and advantage in organic food business, which contributing organic agriculture businesses fast growing, whether in form of production, procession or marketing. The organic-based business tended to be stable and continued growing, even in the time of overall business fluctuating or regressing, co-incident with state policy and many international bodies turning to support organic agriculture with various reasons, regarding no matter economical resolution for rural farming, mitigation and prevention for environmental problems, or export opportunity.

Exactly in Thailand, social and political factors play no less important role to inspire organic agriculture to continually growing; especially, many agencies have heralded policies to support organic agriculture or proclaimed plans for organic agriculture projects. Public relations had been made widely onto rural levels; whereas in diverse groups or organizations, wakefulness in organic agriculture was spread rapidly. But anyways, it is a missing that the wakefulness could not much convince Thai society to perceive and understand organic agriculture correctly, due to the campaign was most done upon the

conception “Organic agriculture just replacing production factors”, which emphasizing specifically on production factors to replace chemical use (such as, using organic fertilizer to replace chemicals, using herbal products to eradicate pests, and using liquid fertilizer to replace hormone). There was less such campaigning to promote organic agriculture in accordance with the principle of organic agriculture (Vitoon Panyakul, 2012, pages 99-102).

**Table compiling conclusion on important events of Thai organic agriculture since the past to present**

<b>A.D.</b>	<b>Brief History of Thailand’s Organic</b>
1991	Chai Wiwat Agro-industry & Capital Rice Co started an organic rice project.
1992	- Alternative Agriculture Network’s first national conference, to promote sustainable & organic farming - Rice of First Rice Fair Trade in Surin was exported to Fair Trade groups in Europe.
1993	- Green Net established
1994	- Capital Rice began selling organic jasmine rice in Thailand and overseas
1995	- ACT was established, and first Thai organic crop standards were drafted.
1996	- Organic rice project was established in Yasothon. - IFOAM-Asia Workshop on Certification for Organic Agriculture and Alternative Market
1997	- ACT started organic inspection & certification
1999	- Thailand Institute of Technological and Scientific Research (TISTR) / Export Promotion Department and the Department of Agriculture co-drafted organic crop Standards.
2000	- ACT got IFOAM accreditation from IOAS - Cabinet approved US\$ 15.8 million (633 million baht) to support 3-year pilot project on Sustainable Agriculture for small-scale farming.
2001	- DOA gazetted organic crop farming standards - IFOAM Organic Shrimp Consultation was held in Thailand.
2002	- MoAC established ACFS (National Office of Agricultural and Food Commodity Standards) to enforce agri & food standards & accreditation - ACFS completed “Organic Agriculture: the Production, Processing, Labeling and Marketing of Organic Agriculture” covering crop, livestock, and aquaculture. - Swiss Govt. recognized ACT for organic inspection according to Swiss import regulations. - First produce bearing “Organic Thailand” label appeared in the Thai market.
2003	- International Organic Conference, co-hosted by FAO, Green Net-Earth Net Foundation
2004	- ACFS launched organic accreditation programme. ACT was first applied.

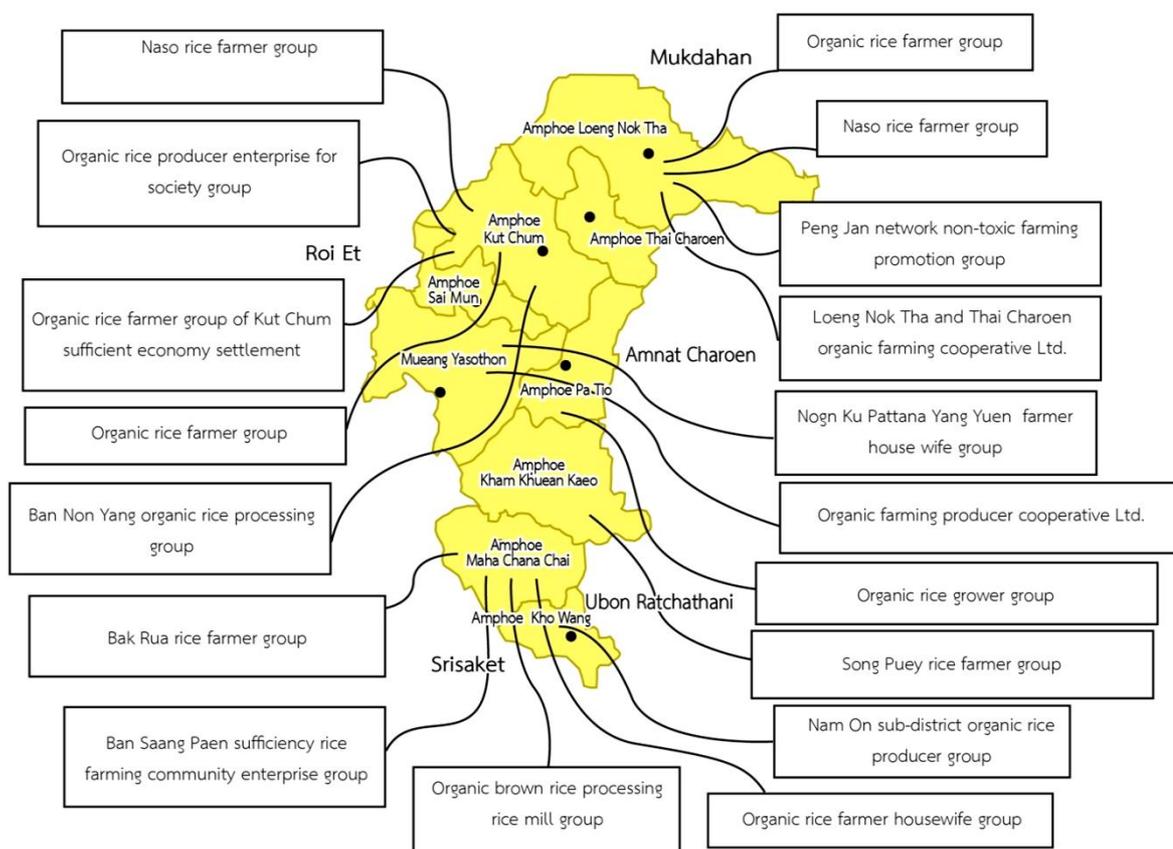
A.D.	Brief History of Thailand's Organic
	- Organic Agriculture Fair was organized by MOAC and the Cabinet approved organic agriculture as a part of the national agenda.
2005	National Agenda on Organic Agriculture was implemented, with little support given to OA sector.
2006	<ul style="list-style-type: none"> <li>- 1.2 billion THB was allocated for National Agenda on OA, mainly focusing on organic fertilizers.</li> <li>- Thai Organic Trader Association (TOTA) was registered.</li> <li>- National organic action plan was drafted.</li> <li>- Siam Paragon introduced Gourmet Market with organic ranges.</li> </ul>
2007	<ul style="list-style-type: none"> <li>- Political instability started with military take over.</li> <li>- National Organic Development Strategic Plan was established.</li> <li>- Certification Alliance (CertAll) was established.</li> </ul>
2008	<ul style="list-style-type: none"> <li>- Political disarray continued.</li> <li>- National Organic Action Plan was approved with over 5 billion THB budget, planned for 5 Years.</li> <li>- ACT applied for Canadian recognition (approved in 2009)</li> <li>- Political disarray continued.</li> </ul>
2009	<ul style="list-style-type: none"> <li>- TOTA started organic incubation programme to increase organic enterprises.</li> <li>- ACT applied for EU recognition.</li> </ul>
2010	<ul style="list-style-type: none"> <li>- ACFS-CNCA started bilateral discussion for equivalent recognition under GOMA Framework.</li> <li>- ACFS supported 2 organic projects, one on local green markets and another on database (implemented by the OAD Center Thailand).</li> <li>- MoC supported 2 projects on organic cotton and tea (Prince Royal projects).</li> <li>- TOTA-MoC-GTZ collaboration on local market developments</li> </ul>
2011	<ul style="list-style-type: none"> <li>- 35,824 ha (0.17% of total arable land)</li> <li>- 7,499 farms (0.15% of total 5.1 m farming families)</li> <li>- MoC initiated Organic &amp; Natural Expo and Organic Symposium, focusing on ASEAN region.</li> <li>- National Organic Development Strategy ended, no new plan was developed</li> <li>- In previous plan, 1.75 m farmers in Thailand (34%) were trained by various government agencies.</li> <li>- MoAC issued national organic standards for crops, livestock, and aquaculture and set up accreditation body.</li> <li>- No official recognition with any countries, but trying to talk to EU, US and China</li> <li>- Private sector did not support national regulations (organic as voluntary scheme).</li> </ul>

*Source: Vitoon Panyakul, 2011*

## 4.2 Groups and networks of organic rice farmers in Yasothon province

Yasothon province has long been promoted and developed on organic farming; whereas in 2015, the Office of National Science and Technology Development, by Genetic Engineering and Technology, supported 7 groups of Organic Rice Community Enterprise Group in Yasothon province by nurturing knowledge and technology to raise production level for cost reduction, increasing productivity and revenue, creating mechanism to mobilize activities of the groups and their networks, linking operative system in form of cooperation partners among the state, private sectors and community bodies to mobilize organic rice production into world community, which would help obtain the complete prototype of organic rice production. The effort resulted as to transferring technology on increasing biomass onto rice fields, and learning-procedure managing on the complete organic rice production. In 2016 and 2017, the project had expanded the success of “Yasothon Model” to networks through integration with provincial agencies, in accordance with provincial plans to push forward and increase efficient production of all levels, namely production grounds, processing platform and the marketing management. In addition, an adjustment was made by changing paddy purchase to milled rice trading to uplift the price, including expanding development model to ensure rice growers able to sustain their self-reliance. The expansion has been made to various areas in Yasothon province, as shown hereunder.

### Yasothon Province Map



### ***4.3 The policy promoting Thai organic products of Ministry of Commerce***

Ministry of Commerce has an aim to promote Thai organic products and businesses to be recognized and accepted in the country and abroad, and to convince that Thai government agencies have participated in campaigning to life-living relying to nature, restoring the environment conservatively, diminishing and quitting mono-agriculture and chemical use to quicken productivity; the effort was made to reduce worrisome and to raise consumer-confidence worldwide. The most importance is to campaign for health awareness among producers and consumers to better well being of all Thai people, as well, as long and sustainable as possible. Currently, health awareness and living in natural ways become acceptable worldwide, as to gain the quality of life physically; and also, everyone could gain better healthiness and disease-resistance immunized, followed by healthy mentality. Furthermore, ways of life living on organic agriculture could help nurture restoring ecology system go to its nature, balancing the environment, and reducing pollution. And otherwise, general people have now realized matter of fairness, and they then have thought of to more support organic agriculture farmers by themselves.

Therefore, most of now consumers have changed their behaviors to consume more organic or bio-agricultural products in forms of food and non-food products, and also choose services in preservative manner. Of all such products and services as mentioned, Thailand has its own readiness and high potentiality to develop and elevate to being production, distribution and service hub of the ASEAN and Asia. And surely of course, if all sectors, including the government, operators and production groups could join hands, exchange knowledge and experience among each other, make understanding in plenty of standards, and convert difficulty into a new alternative way for organic agriculture, Ministry of Commerce is confident that Thailand can ensure reliability to consumers in the country and those of the world. As a result, Thailand can be world kitchen exactly.

Thai government has imposed its policy in truly supporting organic agriculture to establish platform for agricultural and industrial sectors in the future. It has foreseen the importance in ways of life, production activities and consuming behaviors need being environmentally friendly, restoration and preservation for the nature and environment, adjusting mono-agriculture which just focusing productivity by chemical use, all that just to reduce worrisome and enhance consumer confidence; the most importance is to monitor and take care the health of farmers and consumers as well to better quality of life and well being for all. To implement the policy as to substantiate the outcome, the government has set a goal to promote and sustain organic agriculture for farmers to be able living their lives happily under the sufficiency economy philosophy, namely balanced, moderate, rational and immunized, in consistence with the social environment of each region and its native traditions. The practice just initiates from producing for household consuming, then furthers to exchanging and joining among groups to get strengthened and developed into commercial system, first just starting in community market then expanding to country level and finally going worldwide.

The concept on promoting rice farming for sale was based on using both chemicals and pesticides. Had it been aware of using knowledge, understanding and responsibility for

the society and environment, problems would not happen to such many; the fact was such that or not. For the organic farming, it is an alternative means of rice farming that beware health issue of farmers themselves and consumers, including the environmental impact, and revenue yielded from production. Many rice farmer families in Northeast region opted to grow rice and vegetables, manage the spaces and water to conduct farming in accordance with the royal new agricultural theory, Sufficiency Economy Philosophy. These groups of farmers had an idea to raise self-reliance and settle food security by developing their knowledge and capacity on aggregate farming, avoiding chemical and pesticide use, regarding ecology and nature restoring which could help cost reduction, debt lessened, ensure health safety and food security for family. Of all organic farmers who gathered as organic farming groups such as in Yasothon province, they have well been strengthened, well experienced, knowledgeable in managing organic rice for sale and to export abroad. Currently, citizens of some developed counties like to consume organic rice or non-toxic, or else chemical-free for health safety, to help enhance living a quality life and nurturing world environment as well.

Experienced in organic rice production from organic rice farmer groups in Yasothon province in 2015, Office of National Science and Technology Development, by Genetic Engineering and Technology Center, has supported 7 farmer groups of organic-rice community enterprise in Yasothon province by taking knowledge on science and technology to raise productivity scale for cost reduction and revenue increase, creating mechanism to mobilize the production at group-levels and their networks to push ahead the target to global stage, which would lead to obtain a complete organic rice production model. The mission on transferring technology to increase bio-mass into farming grounds, on management learning procedure for complete organic rice farming, and on utilizing portable information collecting technology to help approve organic product standards, these all were transferred to 4,565 farmers of the 7 groups, as following: 1) Rak Thammachat club, Na Sou sub-district, Kudchum district; 2) Khao Khunnatham group, Krajay sub-district, Pa Tiew district; 3) Bak Rua Rice Farmer group; 4) Nam Om Sustained Community Enterprise network; 5) Lerng No Ta and Thai Charoen Organic Agriculture Cooperative Ltd., Sam Yaek sub-district, Lerng Nok Ta district; 6) Withi Phuthai Organic Agriculture Community Enterprise group, Bung Kar sub-district, Lerng Nok Ta district; and, 7) Nong Yor Natural Agriculture group, Kam Mad sub-district, Kud Chum district, in the areas of 5 districts. They had generated the following amounts of products: 7,300 tons of international standard organic paddy harvested on the area of 10,528.5 rai; 10,960 tons of paddy yielded during adjusting into organic production, harvested on the area of 15,675 rai. Two categories of rice were processed into 3,650 tons of organic rice, worth 103.97 million baht; and, 5,480 tons of adjusting produce, worth 150.62 million bath, respectively (totally worth 254.59 million baht).

Due to the success of the project, the cooperation was conducted joining hands among the provincial authority, state agencies in the area, (Provincial Commerce Authority, Provincial Chamber of Commerce, Yasothon Provincial Agriculture Assembly, and Provincial Cooperative) to push forward for Yasothon Organic Agriculture Cluster to

be the network operating organic agriculture as a whole system. There provided 6 working strategies such as learning activity, capital management, marketing, network development, new management, and community welfare. In the same time, the project had cooperated working with researchers of Nation Metal Technology and Materials Center to assess rice mills of the 7 groups to provide status and information for improvement to reduce rice lost from milling process. The data obtained was presented to provincial governor, from which the groups received the budget to maintain milling machines, which helped reduce rice lost. In addition, the project offered supports to group member farmers growing organic plants after rice harvest, such as water melon, turmeric, sesame, and peanut to fill up income after annual harvesting (Office of National Science and Technology Development, 2015).

Due to problems associated with policy and development on sustainable organic rice farming of Thailand, by 1992 alternative agriculture network had held “Alternative Agriculture Convention” to call on the government to support alternative agriculture including organic farming. And later in 2011, there had been preparation of a national strategic plan for organic agriculture development issue 1, 2008 - 2011; and, another such plan was continually provided, to which governments did truly and not truly take action. But the organic agriculture of Thailand rose up as a blend of 3 social tides, namely a tide of awakening for new alternative agriculture to escape chemical-use cycle, being led by alternative agriculture network consisting of NGOs, academics, and farmer leaders; the second one was a tide of awakening for health awareness for consumers; and, the third tide was the one relating environment awareness, which being instigated by efforts to preserve natural resources and environment in Northeast local areas. The province in which there were movements conducted by farmer groups and NGOs, including continual supports from state agencies, is Yasothon or as called Yasothon Model. The province itself has put an importance on organic agriculture development, by manipulating the strategy on I-san pathway organic agriculture during 2016-2019, covering most provincial areas for its future sustainability.

## **5. Conclusion**

Opportunity and development for sustainable organic rice farming of the farmer groups who produce organic rice in the areas of Yasothon province are the following: 1) continuity of policy and development for organic rice of Thailand; 2) understanding of farmers on the principle of good organic farming, to apply for standard approval in accordance with the policy of the province; 3) administration and management in the groups and networks of farmers to maintain sustainable organic farming; 4) having producers and consumers learning, promoting and supporting group gathering for producing and processing roles, and supporting some partial production factors to ensure future sustainability; 5) cooperation and supports among farmers who produce organic rice and NGOs, especially upon the matter of international quality and standard; and, 6) promotion and network forming for organic rice market places and fair price for farmers domestically and internationally to ensure the stability and sustainability for all.

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# THE ROLE OF ECONOMIC COOPERATION FOR SMALL - SCALE FORESTRY PRODUCTION IN THE WORLD AND VIETNAM

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Tran Thi Thu Ha

## Abstract

*Economic cooperation in small-scale forestry production is needed in the context of globalization and cooperation. Farmers or farms are often limited by access to resources as well as input and output information for their products. While they have land and labor for production. On the other hand, the development trend of the forestry sector has been increasingly confirmed in the world. Because, The forestry sector provides not only economic benefits to individuals but also to the wider community. The purpose is to explore the role and necessity of economic cooperation for small-scale forestry production in the world and in Vietnam. The objective of this paper is to explore the role and necessity of economic cooperation for small-scale forestry production in the world and in Vietnam by synthesizing relevant literature.*

**Key words:** *economic cooperation, forestry production, small scale forestry ...*

## 1. Introduction

In the world, forestry in general and small-scale forestry production in particular have been developing and have the potential to bring significant economic benefits to landowners and communities. According to a report by MARD Vietnam 2011 - 2015, the forestry sector has achieved remarkable achievements. That is, the forest area increased rapidly and stable, with an average of 220,000 hectares per year. forestry production value increased sharply; in 2011, 3.4%, 5.5% in 2012, 6% in 2013, 7.09% in 2014, 7.5% in 2015; To step up the socialization of forestry as about 75% of the non-state budget investment capital for forestry. On the other hand, international forestry cooperation has been increasingly developed in the direction of multilateralization and diversification.

In the world as well as in Vietnam, forestry production is organized under different production models such as corporations, corporations, households, state organizations and other economic organizations... However, for small-scale forestation (household or farm type) there may be some discrete factors contributing to the production capacity. Many studies have demonstrated that the traditional type of production organization may not be effective for small-scale forestry, requiring a new strategic model - economic co-operation. Vertical economic cooperation is concerned with the seven potential elements of production needed for a successful forestry venture (land, labor, capital, silviculture, marketing skills, harvesting and processing skills and government). Horizontal cooperation Each partner can engage in a network with other partners in their field, thus representing economies of scale. This cooperation recognizes the importance of minimizing transaction costs, building trust, promoting healthy corporate governance, and ensuring ongoing communication between partners is a factor. Help the actors participate successfully.

This paper aims to synthesize all relevant studies to demonstrate the role and necessity of economic cooperation in small-scale forestry production both in the world and in Vietnam.

## **2. Research methodology**

- The secondary data collection method is mainly the synthesis and inheritance of secondary data from published reports and researches.

- Professional solution

- Statistical analysis method

## **3. Research results**

### ***3.1. The approach to economic cooperation.***

At the macro level, economic cooperation is expressed through the establishment of economic alliances between nations, regions or territories to form regional institutions at different levels. This cooperation has helped to establish broader, safer economic spaces for the economic activities of each participating partner on the basis of the division of labor and cooperation, the rational population distribution for the whole region. At the micro level of economic cooperation is achieved through the establishment of business cooperation relationships between actors in the economy. Promoting cooperation at the micro level, to a certain extent, will have a positive impact on macro cooperation. It promotes macro-economic relations to develop and transform in a way that facilitates micro-cooperation. In this context, we will focus on micro-economic cooperation.

#### ***What is economic cooperation?***

According to Le Xuan Ba (2003): "Economic cooperation is the establishment of relationships among business and production entities, possibly between enterprises in the same field of activity, between competitors. or between businesses with additional activities, to save time, save costs, gain greater efficiency, and open new markets".

Meanwhile, Que Hau (2008) has introduced the concept of economic cooperation on a more general level. According to Ho Que Hau, "Economic cooperation is the proactive awareness and implementation of objective economic relations between economic entities in the socio-economic, to implement the relationship of labor division and labor cooperation to achieve common socio-economic benefits"

In general, economic cooperation is one of the forms of cooperation at high levels of human resources in the production and business process, including regular cooperative and cooperative activities by voluntary economic units. To work out and implement the undertakings and measures related to the production and business activities of the involved parties in order to promote the production and business development in the most profitable direction. The principle of link implementation must be based on voluntariness, equality, mutual benefit. These facilities must be agreed upon, reflected in the contract signed between the parties and in accordance with the legal framework of the countries.

Whatever the form of development, economic relations are oriented towards the common goal of creating a stable economic relationship. Adopt economic contracts or operating regulations to carry out the specialized production assignment and cooperation,

in order to tap the potentials and strengths of each affiliated unit. Or to jointly create a common market, allocate output quotas for each member unit, price for each type of product to protect each other's interests and minimize and spread the risks if any.

***What is economic cooperation in agriculture and forestry?***

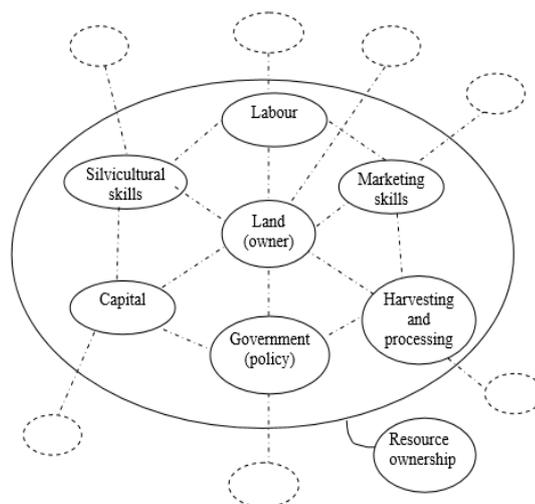
In modern agriculture, economic cooperation is essential. Economic cooperation in agroforestry is understood as cooperation between agricultural production areas in the inter-regional, between agricultural, industry and service sectors, and between farmers themselves, to increase the scale of production, reduce transaction costs, increase competition

***3.2. The role of economic cooperation in small-scale forestry production***

***3.2.1. General characteristics of small-scale forestry***

Forestry has the potential to bring significant economic benefits to both large landowners and the wider community. Forestry production in general and small-scale forestry production in particular have a relatively long business cycle and need to integrate all 7 resources, the chances of success are high. Of these, 7 resources required for forestry production are: land, labor, capital, silviculture, marketing skills, harvesting and processing skills, and government. The model of small-scale forestry production, mainly of households and farms. Most of them only have land and labor for forest plantation, and other resources are inaccessible and unworkable. Because of that, the result is not high as well as incurred high transaction costs, incomplete information ...

Afforestation of small-scale production forests may have disparate factors contributing to production capacity. Small-scale producers do not have the resources necessary for large-scale production organizations such as corporations, corporations, large-scale enterprises, etc. The organizational models are not suitable for small-scale forestry (Brian W. Sharp et al., 2004). According to the authors, there is a need for economic cooperation on small-scale forestry activities to promote the effectiveness of actors. The author also proposed a collaborative model of the seven dimensions needed to create a successful forestry production:



**Figure 1: Viewpoint of economic cooperation for small-scale forestry production**

*(Source: Brian W. Sharp et al., 2004)*

### *3.2.2. The role of economic cooperation*

The question is why there is economic cooperation in agroforestry and why is small-scale production necessary to link the development of agro-forestry production today? Most studies identify the key roles of economic cooperation, including: taking advantage of economies of scale, increasing comparative advantage, leveraging partner capabilities (technology, machinery, equipment, market, capital, labor force, raw materials, etc.), improvement of management system.

Nguyen Manh Dzung emphasized in his book "Agricultural cooperatives in the world - an important factor in linking production development of farmers", 2004. The most basic characteristic of agricultural production is the human impact on the land to create material wealth. The society has stepped up strongly in the process of industrialization and modernization, the level of competition in the consumption of goods produced more fierce. Farmers are vulnerable and vulnerable. Against this backdrop, they need to be reunited in different organizations to create the necessary strength. There are many forms of linkage between farmers, but history has shown that only agricultural cooperatives are the most viable form of linkage to their production.

#### **Economic cooperation helps farmers to take advantage of economies of scale.**

From this point of view, Michael E. Loevinsohn et al. (1994) argue that cooperation in agricultural production will enable households to increase their economies of scale so that technology can be upgraded to increase crop yields.

Australia develops forestry to conserve natural resources. According to S.R Harrison et al., 1999, the role of joint ventures between government and natural resource owners for the development of natural resources. By grouping the authors to develop resource-based industries that require capital and risk, long-term nature, and ecosystem sustainability issues as well as environmental management. A joint venture should be set up between the government and the private sector in forestry based on forestry projects. This approach overcomes the difficulty of accessing land to state forestry services. Attract many landowners involved in the project.

Recently in Lithuania, a country located on the Bantich coast of the former Soviet Union, after its independence, private forestry activity has developed and is in the process of restructuring the forestry sector. In 2005, Marius Lazdinis and his colleagues also pointed out that cooperation between private forest owners in Lithuania was necessary. Forest owners have a small area of forest, lack information on forests and forest management, and face bureaucratic government and need help. The author points out that cooperation between smallholders promotes forest consolidation, information provision, and active participation in the timber market, which may lead to successful implementation of other policies.

#### **Economic cooperation helps households to utilize production resources, create conditions for division of labor, and specialize production to increase comparative advantage.**

From the theory of resource dependency (Pfeffer & Salancik, 1978), no firm can exist alone. All economic sectors must interact with the surrounding environment in order

to mobilize resources and distribute products to the market. Economic cooperation helps economic sectors to control the market, protect from risks and ensure resources are maintained in a stable and timely manner.

In 2007, GF Ortmann and RP King also conducted a study, "Cooperatives can facilitate small-scale farmers in South Africa involved in input markets and products," the study's objective This study investigates whether agricultural cooperatives can facilitate smallholder access to input markets and products. The authors investigate two types of co-operatives, including traditional and new co-operatives, which co-operative form is appropriate for small-scale farmers in Kwazulu-Natal, South Africa to reduce the cost of delivery. It facilitates them to access market inputs and products.

According to a study by Lyne, 1996 and Matungul et al., 2001, it is suggested that small-scale farmers in South Africa and other developing countries have limited access to factors of production, Credit, and information, the market is limited by insufficient ownership and high transaction costs.

According to Williamson, 1985 transaction costs include information costs and costs associated with finding a trading partner, distance to market, and contract enforcement. This high cost is detrimental to the efficient operation and marketing of inputs and outputs.

### **Economic cooperation helps farmers maximize their production resources and minimize transaction costs.**

With the characteristics of small-scale forestry production in Australia in 2004, Brian W. Sharp and his colleagues also pointed to the need for a cooperative strategy in small-scale forestry economic organizations. According to the authors, traditional models of Australian forest economy are not well suited to the scale of small forestry production in North Queensland. The characteristics of small forestry production in North Queensland are the production of paper pulpwood, the short harvesting period. At the same time, the Government is making great efforts to develop high value timber forests with a 30-year exploitation period (Harrison et al., 1999 and Herbohn et al., 1999). Collaboration offers the opportunity to save on transaction costs and increase information flow through an alliance integration process for small forestry production in North Queensland.

In short, economic cooperation is inevitable in today's global alliance economy. Especially it plays a very important role in agro-forestry production. Characteristics are dispersed, fragmented, unoccupied, small scale, long business cycle, risk, and low level of labor, poor market access... and one These sectors make important contributions to the strategy for the development and protection of natural resources and the global environment.

### ***3.3. Economic cooperation in small scale forestry.***

#### ***3.3.1. In the world***

In summary, the studies point out the limitations of the traditional economic organization model that is not suitable for small-scale agro-forestry production. They are limited in terms of scale of production, less resources, inadequate property rights, high

transaction costs... it is difficult to access market inputs and products. In essence they do not have the resources necessary for traditional forms of organization such as corporations, corporations, etc. The theoretical form of cooperation can be a model suitable for small-scale production to take advantage of the advantages and resources of each agent (vertical link), reduce transaction costs, receive services more preferential. On the other hand, cooperation is likely to increase the scale of production or achieve a sizeable field (horizontal linkage) in order to achieve a size of resources that is consistent with new production conditions and maintains Sustainable sector in a region.

According to Michael E. Loevinsohn et al., In 1994, it was pointed out that cooperative farmer-oriented cooperation was in the development of farming systems in Rwandan Valley. The authors point out that the quality and scale of cooperation affecting the innovations in farming can be developed. Collective management makes a high degree of crop diversity, adopting greenhouse treatment technologies, thereby increasing yield.

The study by GF Ortmann & RP King, 2007, finds the underlying causes of traditional cooperatives in South Africa unsuccessful. This failure is due to subjective factors such as the type of co-ops that usually do not invest in long-term (improved) or intangible assets (training and research), poor management, conflict among members (due to poor service provision) and lack of funds. Many members of the cooperative do not know what cooperation is and what its purpose is. Thus, members lack knowledge due to incomplete information, lack of access to information, less contact with extension workers. In addition, due to external factors such as uncertain ownership (land, contracts, etc.), poor transport infrastructure, poor access to market information. In order to promote the efficiency of small scale producers, the authors point out in the research on the cooperative model between main producers being cooperatives (supply chain for the first two phases: production (assembly assemble / sort / pack)

With the characteristics of small-scale forestry production in North Queensland - Australia, Brian W. Sharp et al. (2004) also indicate that pre-existing forestry forms are not appropriate. The authors have also come up with an approach in the potential strategic alliance model that is horizontal alliance. Each partner can join the network with other partners in their field, thus achieving economies of scale or alliances (Child and Faulkner, 1998). Cooperation has the potential to offer the opportunity to save on transaction costs and increase information flow through the integration process within the strategic alliance. Horizontal alliance of forestland owners may be co-operative or similar arrangements

Also study the status of private forestry cooperation in the context of "restructuring forestry" in Lithuania, where privatization is a major factor. Marius Lazdinis et al., 2005 analyzed in detail the activities of private forestry cooperatives (FOCs). Research results show that the cooperation between private forest owners is slow, although cooperation can develop positively. Private forestry cooperatives are mainly established with the aim of private forestry, which focuses on providing commercial services to their private forest

owners in the most attractive conditions., link members and make a profit to members rather than attracting large numbers of participants. These cooperative activities focus on logging and trading. In providing services, forestry cooperatives are competing with state forestry enterprises and large private forestry companies.

According to Doug Brubacher, 1998, forestry development is the foundation for the emerging indigenous economy in Canada. But the reality is that when the forest industry brings wealth to governments and federations, indigenous Aboriginal communities become poorer and shunned with dependence on forest land. So, the author analyzes the assessment framework for forestry joint ventures, which consists of five elements. Case study shows that companies joining the forestry sector through cooperation with other people hold resources is very strong. This cooperation leads to people of different cultures working together in a certain area. The author argues that the value of indigenous communities needs to be reflected in the form of joint ventures

Research by Jeremy Boyd and Ronald Trospe, 2010 also confirms the role of joint ventures in forestry as a prerequisite for the economic development of British Columbia natives. The authors use the Aboriginal Development Framework (Anderson 1999). The in-depth analysis of two typical examples of joint venture demonstrates that indigenous communities have minimal control over forest management and harvest decisions. Both contribute to creating employment for community members and neighboring communities and also contribute to the development of Aboriginal skills in business management. However, joint ventures are fundamentally related to the Aboriginal community but do not meet all the elements of the AED - this is the means to keep the Aboriginal community moving towards the ultimate goal of the self-reliant and self-governing.

Another viewpoint in agro-forestry joint venture is also expressed between the government and private. It is shown in two studies by SR Harrison et al., 1999 and by Aine Ni Dhubhain and Thomas Kavanagh, 2003. Both examined the role of joint ventures in attracting households to participate in projects. and the Government's program for the development of natural resources.

According to GF Ortmann & RP King, 2007, the authors of the study at Impendle and Swayimana show the potential for high value tree planting, near-urban transport near ports and airports, Supply chain participation depends on minimizing total operating and transaction costs for each enterprise from a cooperative or investment-oriented company (IOF). Considering the entire supply chain in the study area, the study points to a "hybrid" model that combines a cooperative at the first two stages of the supply chain and an IOF. will bring efficiency. The optimum boundaries of a cooperative are production, assembly, sorting, grading, packaging, while the IOF's optimal boundary is to transport the product from place of manufacture to the market. They may be willing to advise smallholders on collective action and provide useful information such as input use, type of product, product quality required by the market. The members of the cooperative benefit from this information and reduce the transaction costs for the former traders.

### 3.3.2. In Vietnam

#### 3.3.2.1. Planted forest for household production in Vietnam.

The planted area has grown rapidly globally and provides about 50% of the world's total timber production. The World Food and Agricultural Organization (FAO) estimates that the total planted area In 2005, about 140 million ha (FAO 2006), an average annual increase of about 3 million ha. In Vietnam, plantation forest production has also increased rapidly in recent years. The total number of forest plantations in the country is divided into 9 different management entities. In particular, the area of plantation forest allocated to households accounts for a significant proportion

**Table 1. Planted forest area by households in Vietnam**

*unit: ha*

No	Object	Year 2014	Year 2015	Year 2016	<i>θbq</i> (%)
1	The whole country	3,696,320	3,886,337	4,135,541	105.77
2	Households	1,784,113	1,747,781	1,601,001	94.73
	% (2/1)	48.27	44.97	38.71	

*(Source: Ministry of Agriculture and Rural Development)*

The model of household forestry is small-scale production. According to research by Tran Thanh Cao et al., In 2014, survey of production forest plantation in the Region / Province shows the scale of production as follows:

**Table 2. Production scale of afforestation households in Vietnam**

*Unit: ha/household*

No	Region / Province	Max	Min	Average
1	The Southeast region	105	1.5	2 đến 5
2	The central coast	30	2.4	12.7
3	The Highland			
-	Lam dong	61.3	1	11.84
-	Gia Lai	5	0.46	2.4
4	The North East			
	Lang son	2.5	1	1.44
	Quang Ninh	2	1	1.23

*(Source: Tran Thanh Cao et al., 2014)*

#### 3.3.2.2. Economic cooperation of households for production forest

According to the results of the survey and survey of cooperative economy conducted by the General Department of Forestry in 2012, forestry cooperatives are formed and developed in localities with a clear distinction. Most of the southern provinces do not exist forestry cooperatives. Provinces in the Red River Delta have small forest areas or forests that are mainly used for special purposes and protection purposes. Therefore,

forest land and forestry activities are mainly provided by state organizations and units. . Provinces with forest cooperatives are mainly in the North East and Northwest and North Central (Lai Chau 15 cooperatives, Cao Bang 7 cooperatives, 9 cooperatives in Ha Giang, 23 cooperatives in Thanh Hoa, Yen Bai 32 cooperatives, Ca Mau 8). Most of them are agro-forestry cooperatives, mainly engaged in the production and supply of forest seed, purchase and processing forest products.

**Table 3. Activities of Forest Cooperatives in Viet Nam**

No	Criteria	Unit	2015
1	Amount	number	151
2	Production value / Revenue	Million VND/Cooperative/year	1000
3	Percentage of farmers participating in the cooperative / total farmer households	%	45
4	Average profit	Million VND/Cooperative/year	200
5	Average income	Million VND/member/month	1

*(Source: Annual Review Report - Department of Cooperative Economics and Rural Development)*

In the forestry production model cooperative groups are relatively common. Cooperative economic organizations are established by individuals and households with forest land. They linked themselves together to plant and protect the forest. Households who plant production forests contribute capital to purchase and process forest products. The benefits of the members of the cooperative group are expressed through the activities of contributing money to buy plant seeds and inputs when planting, exploiting and circulating forest products in order to save on transportation costs. machinery for production, labor for forest protection, pest and fire control.

According to the report of the General Department of Forestry, most cooperatives in the forestry sector now have very small scale production and business activities, less capital (less than 1 billion VND), low management level, active seasonal operations, narrow operation areas and unstable market. Most cooperative groups have not received support from local authorities. In addition, in the forestry sector, voluntary community forestry groups are formed. These are the cooperative groups established based on the support of the projects. These projects support the allocation of forest land to the community in collaboration with local authorities (FLICH project) in some provinces nationwide. This project has piloted land allocation and management to the community. Most of the activities of this cooperative group are forest management and afforestation under the project support plan and local government guidance.

Actual production of forestry has appeared effective cooperation models and links in the chain of production activities in the area of production of raw materials. For example, Vietnam Paper Corporation is affiliated with afforestation households; Planting organizations with Bai Bang Paper Mill in production and consumption of wood pulp.

Vietnam Forestry Corporation links with the afforestation households; plantation organizations with the Gia Lai MDF Plant on the supply and marketing of plantation timber.

However, cooperation and joint ventures are limited in reducing the efficiency of increasing the added value, income of individuals and participants, reducing the motivation for cooperation and linkages. Households and individuals have not been cooperated with each other to create the strength of investment, apply technical advances, organize production to create products in large quantity, high quality, stability, supply contracted. The relationship between production and consumption is usually through intermediaries, so the sellers are often unstable, lack transparency and price pressure. Many production contracts, raw materials supply between the producer and the factory may not be made due to the purchase or sale. In distribution of income (through price) for each stage in the production chain is lack of transparency, equity. Risk insurance due to production is not paid attention.

#### **4. Conclusion.**

The results show that in small-scale forestry production, economic cooperation is needed to successfully operate to bring high value and promote economies of scale, improve competitiveness and reduce costs. transact and utilize the resources of the participating actors. This cooperation can be horizontally integrated among forest landowners to increase the size of the economy. Or a vertical integration between actors in the discrete forestry production chain to leverage productive resources, enhance value, and reduce transaction costs.

On the other hand, economic cooperation in small-scale forestry production also contributes to promoting the development and protection of natural resources, and developing models of afforestation for high economic efficiency such as afforestation. In addition, economic cooperation helps countries around the world as well as in Vietnam to implement the policy of socialization of forestry. Objective of attracting private investment for forestry development with socio-economic value.

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# THE ADJUSTMENTS IN THAILAND'S AGRICULTURAL TRADE POLICY AND IMPACT ON AGRICULTURAL TRADE BETWEEN VIETNAM AND THAILAND

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## Abstract

*Thailand is Vietnam's second largest trading partner in ASEAN. Vietnam's main exports products to Thailand are crude oil, computers, electronic products and components, seafood, coal and plastic products. The trade of agricultural products between Vietnam and Thailand has also thrived. Agro-products currently account for 14-15% of the total trade volume between the two countries. In recent years, Thailand has made many changes in the policy of trade in agricultural products in the direction of modern, high technology associated with the restructuring of agriculture. These changes affect the trade of agricultural products between Vietnam and Thailand on both positive and negative aspects. This paper focuses on analyzing the current situation of this change and proposing measures to boost Vietnam's agricultural trade in the coming time.*

**Key words:** Agricultural commodities trade; Thai Agriculture; Trade policy of agricultural products in Thailand.

## **1. The current status of adjustment of trade policy of agricultural products in Thailand and affecting the export and import of agricultural products between the two countries**

In the context of trade liberalization, the Thai government has set a target for agricultural development orientation to increase productivity, yield, food security and farmers' income, restructure, sustainable development of agriculture and encourage the production of biofuels. Accordingly, Thailand's agricultural trade policy has changed a lot. Detail:

Thailand has implemented a policy of attracting foreign direct investment (FDI) into the agricultural sector. FDI projects in agriculture are entitled to 50% reduction of import duty on machinery and equipment. Thailand is targeting FDI in the exploitation of specialties of each region, even the most difficult areas. With investment projects in special difficult areas and export products, they are exempted from income tax for 5 years. This policy has enabled Thai agriculture to have advantages of quality and price in the world agricultural market and create a good brand.

Thailand Government also promulgate the policy of developing linkages is strongly encouraged. In Thailand, the state, scientists, traders and farmers work closely together, making production stable, effective and keeping price higher. The "Four Partners" relationship is based on a harmonious combination of interests. Scientists study super-yielding crops, improving seed quality through genetic engineering, breeding techniques,

genetic engineering and tissue culture technology. Improving the quality of agricultural products in the direction of sustainable development has been solved by scientists using biotechnology. More importantly, these research are recognized by the Thailand government and applied in the production and processing of agricultural products.

In rice exports, this linkage flourishes. The government has introduced policies to encourage rice production and export, as well as investors when the rice market is unstable by buying rice from exporters, bear the costs of storage, Shipping when world rice prices fall. The state also helps farmers by implementing a number of rice agreements with foreign governments.

**Table 1. Rice export volume of Thailand and the world**

*Unit: Mil. tons*

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
The world's rice export	28,0	32,0	29,6	31,4	31,8	30,4	38,4	37,4	50,0	41,3
Thailand's rice export	7,5	8,5	10,0	8,6	6,9	4,2	7,1	7,1	10,0	9,8
Thailand's share of the world (%)	26,8	26,6	33,8	27,4	21,7	13,8	18,2	18,7	20,0	23,7

*Source: VIETTRADE.COM.VN*

Tax and credit policies have also changed. The Thailand government has given more incentives for capital and increased insurance for farmers, and the agricultural tax was abolished. Rice farmers also enjoy other supportive policies, such as: buying fertilizers at low prices and free fertilizer transportation; suppling high yielding varieties; Borrowing capital with low interest rates from agricultural banks. For key crops such as durian, longan, litchi and rambutan, the government have price support to encourage farmers to focus on growing. In order to promote the production of processed agricultural products, Thailand has applied the policy of income tax exemption, business tax and profit tax for newly established processing establishments.

Trade promotion policy has many changes. Thailand has a strategic orientation for agricultural production is export, trade promotion policy has mobilized resources from many sides (the State, enterprises and individuals) to expand the market. The state plays most important role. The government launched large-scale trade promotion programs for Thailand agricultural products, such as: programs to build commercial centers abroad for Thailand agricultural products. The government also sponsor global advertising programs through fairs and media. For example, the program described "Thailand fruit is the best in Asia" has achieved much success and helped export of Thai agricultural products to the world market. The government also actively supports marketing programs, seeking export market for post-harvest and processing products through the government contracts.

Infrastructure policy has also been adjusted, making an important contribution to the success of agricultural production and exports in Thailand. The state electrified rural areas, building hydropower, ensuring all farmers can access the agricultural science and new farming techniques information. Roads and marketplaces are well planned, facilitating

the production and export of agricultural products. For fruit production and export, Thailand uses “One Stop Service” through a central market. The brokers collect of fresh fruit from the farms and then returns to the processing plants. Compared with the traditional way of doing business, people grow their own trees, harvest them and bring them to the market for sale, thus reducing the transaction costs and reducing post-harvest losses. The Perishable One Stop Service Export Center (POSSEC) in Thailand can meet all the requirements for on-site delivery. This means that exporters can complete customs procedures, receive certificates of origin (C/O), certificates of plant quarantine, safety and hygiene inspection, including irradiation services, warehousing packaging, market information, regulations... at POSSEC.

Policy of research and transfer of science and technology are also paid special attention by the Government. It can be seen that in recent years, on-the-spot courses in farming techniques and technology transfer have been expanded with a number of incentives to attract and improve the level of agricultural human resources, make many changes Thailand agriculture. Due to the efforts of both the Government and the people, modern technologies in the production, preservation and processing of agricultural products are implemented and applied throughout the country. In addition, farmers also actively seek out, strictly adhere in farming and processing agricultural products. The success of Thailand farmers is based on the skillful combination of traditional farming experience and the application of advanced science and technology.

The policy of international integration is also promoted by the Government of Thailand, creating a favorable environment for import and export of agricultural products. Thailand has actively participated in FTAs with Japan, Australia, India, Chile... In particular, Thailand has signed a free trade agreement with China, effective from October 2003. Accordingly, the two sides implemented liberalization for 8 groups of agricultural products. This has made Thailand's agricultural products enter the market in general as well as the Chinese market in particular convenient. Thailand also has a policy of penetrating its newly opened neighboring economies such as Vietnam, China, Laos and Cambodia. Geographic proximity has given Thailand a certain advantage over other countries. The good integration policy has enabled Thailand agricultural products to penetrate not only the Asian market but also the European and American markets. These markets ask for quality of export products as well as the accompanying standards such as origin, geographical indications highly.

Flexible adjustments in the policy of trade in agricultural products in passing time has helped Thailand become a major exporter of agricultural products in the world, far beyond Vietnam. These have had a significant impact on Vietnam's agricultural production and exports, including positive and negative effects:

On the positive side: First, the adjustment of Thailand's agricultural trade policy has increased the flow of agricultural trade between Vietnam and Thailand. Vietnam's yearly export turnover of agricultural products to Thailand has increased at an average annual rate of 36.8% per year for the period 2006-2010. Meanwhile, Vietnam's agricultural imports

from Thailand from USD 301.6 million in 2006 to USD 779.6 million in 2010, reaching an average speed of 25.5% per year.

Second, adjusting Thailand's agricultural trade policy raises the competitiveness of Vietnam's agricultural products in two ways. First of all, under the ASEAN Free Trade Area (ATIGA), most of Vietnam's agricultural products exported to Thailand are subject to zero tariffs. Lower tariffs will directly affect the competitiveness of Viet Nam's agricultural export products to Thailand compared to agricultural products from countries not covered by this Agreement; Secondly, Thailand adjusts agricultural policies in the context of integration, and at the same time raise the sanitary and phytosanitary requirements up. Thus, Vietnam has to restructure agricultural production in the direction of increasing the processed content, raising the added value, diversifying agricultural production and raising the quality of products, thus enhancing the competitiveness of agricultural products in world market.

Third, to create a more competitive environment for Vietnam's agricultural exports compared to Thai agricultural products in the Thai market due to the reduction of import tax.

However, besides the positive effects, there are also negative impacts such as:

In short term, Vietnam's agricultural products are under competitive pressure and risk losing market share for Thailand in the domestic market. Vietnam's agriculture is at a low level of development, the quality of many raw and processed agricultural products is not high. Meanwhile, Vietnam has been cutting tariffs as well as subsidizing production under commitments, so domestic production is facing many difficulties, especially in animal husbandry and food processing industries. Meanwhile, Thailand has invested in high-tech agricultural production, has many agricultural products leading the world market and has much higher international competitiveness than Vietnam, such as, rice, tropical fruit zone, vegetable... Therefore, when doing market opening, Vietnam not only did not take advantage of the opportunity to export to Thailand, but Thai agricultural products are overwhelming and occupying domestic market share. This is detrimental to domestic agriculture. In 2016, Vietnam imported US \$ 410 million, accounting for 44.3% of the total import value of Vietnamese vegetables and fruits from the world, 10 times higher than Vietnam's export turnover of vegetables and fruits to Thailand. In the first eight months of 2017, Vietnam's vegetable and fruit imports from Thailand amounted to \$ 618 million<sup>1</sup>, much higher comparing to Vietnam export turnover to Thailand.

**Table 2. Vietnam's agriculture product export-import with Thailand in 2016**

*Unit: Mil. US\$*

		Value	Annual change 2015 (%)	Share in Vietnam's total ex-im (%)
Export	Fishery	243	12,4	6,6
Import	Fruits and vegetables	410	98,7	4,6

*Source: Customs handbook on International Merchandise Trade Statistics of Vietnam 2016, P.101*

<sup>1</sup> <http://www.moit.gov.vn>

Secondly, Vietnam's agricultural products are still discriminated against and difficult to access to markets inside and outside Thailand, such as rice. Thailand still implements high protectionist policies and excludes international and regional commitments to rice. Thus, the opportunity for Vietnam's rice exports to Thailand is very low. Many other agricultural commodities have similar conditions. Vietnam has imported most agricultural products from Thailand, however, Thailand has only officially licensed dragon fruits, fabrics and labels imported from Vietnam. Moreover, Vietnam also encountered many disadvantages when approaching the non-Thai market. As for rice, Vietnam is a direct competitor of Thailand in some Asian markets, often losing out against Thailand. In the Chinese market, Thailand has an agreement on eight categories of agricultural products, in the Philippine and Indonesia markets, Thailand has government contracts. In addition, the support of the Thailand government to the rice sector is enormous, from supporting farmer production to trade promotion. Meanwhile, Vietnam has limited resources in implementing domestic support policies for agricultural commodities under the WTO Agreement on Agriculture, which further complicates the production and export of agricultural products.

## **2. Solutions**

With the aim of implementing the industrialization and modernization of rural agriculture orientation to export, Vietnam needs to affirm quality and brand name of agricultural products, avoid losses in globally trade transactions in general and in trade relations with Thailand in particular. Therefore, the following solutions need to be implemented:

*Firstly*, to perfect the policy of import and export of agricultural products in the following directions: Agro-product export-import strategy must be built and completed in the direction of market demand and efficiency of agricultural exports on the basis of capacity domestic production. The Government, in particular the Ministry of Industry and Trade, should announce the strategic direction of agricultural product import and export so that enterprises can take initiative in developing business plans and programs in line with enterprise resource preparation in the long term, medium term. Strengthening the capacity of processing agricultural products for export. In the context of the volatility of international integration, State management agencies must be dynamic and sensitive before the actual situation to timely adjust and supplement the export management mechanism is appropriate.

*Secondly*, balance the development of domestic market and export markets. However, the development of the domestic market is not only a temporary movement, but also a process of development, from understanding the demand, establishing a distribution system, branding... State create conditions for enterprises to participate in fairs in and outside the country to promote products; To set up agricultural transaction centers in concentrated commodity farming producing areas; Propagandizing Vietnamese people using Vietnamese goods by providing full product information showing the benefits of consuming domestic natural farm, and the harmful effects of consuming genetically modified products. This is consistent with the integration commitments and is also a condition for the development of a sustainable agricultural product market.

*Thirdly*, further promote trade promotion activities. Strengthen trade negotiations to sign bilateral and multilateral trade agreements to create conditions of equality, transparency and fairness for Vietnam's agricultural products to better penetrate the world market. Continuing to have mechanisms and policies to strengthen and support agricultural associations.

*Fourthly*, to step up research and forecast on the world market more deeply in order to timely make recommendations to support producers and exporters, especially on the situation of supply-demand, the price of agricultural products. Encourage and create conditions for businesses to build their brands for agricultural products. In the immediate future, it should focus on the famous specialty products by geographical area. Develop a National Action Plan to build a national brand for agricultural product with specific content and a clear allocation of resources, linked to key agricultural products to build a brand name for agricultural products.

*Fifthly*, continue to improve the agricultural trade policy with Thailand. In the framework of organizations that both countries join together, such as WTO, ATIGA, AEC, ACFTA. It is necessary to strengthen coordination and cooperation in agricultural trade policy with Thailand. The two sides should agree to achieve harmonization and mutual recognition of standards and regulations in order to expand market in Thailand as well other countries.

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# ECONOMIC TRADE AND INVESTMENT RELATIONS VIETNAM - THAILAND AND ENVIRONMENTAL IMPACTS.

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## Summary:

*By analytical methods - synthetic, real research, the article confirms: Vietnam and Thailand are two countries in Southeast Asia that have long-standing economic exchanges in history to date with international integration. Based on the analysis of the realities of trade and investment, the paper provides an overview of the achievements and the existence of trade and investment relations between Vietnam and Thailand over the past years. It then proposed some solutions to strengthen good relations between Vietnam and Thailand in the field of trade and investment in the context of international economic integration: The two countries must have a comprehensive and comprehensive two-way, comprehensive and coordinated government agreement on two-way trade in the new context; It is necessary to combine trade and investment with the advantages of each country according to the regulations of ASEAN;...*

**Key word:** Economic relations, Thailand, Trade and investment, Vietnam Posts complete

## A. Introduction

Implementing the foreign policy of independence, autonomy, openness and active international integration, currently, Vietnam has established diplomatic relations with 180 countries. On this basis, the trade and investment economic cooperation between Vietnam and Thailand has been constantly strengthened and developed, achieve great achievements and limitations to overcome.

## B. Contents

### 1. A study of actual situations of Vietnam-Thailand economic and trade relations

#### 1.1. Foundation for the relations

It is the similarity between the two countries in many aspects; economic policy; integration conditions; ...

**Table 1. The correlation between Vietnam and Thailand**

No.	Criteria	Quantity			Vietnam		
1	Area km <sup>2</sup>	513.115			331.699		
2	Population million	68			96		
3	Population density person/km <sup>2</sup>	120			308		
4	Percentage of Literacy	86%					
5	Percentage of Buddhists	90% Population					
6	GDP	406,84 billion USD			200,493		
7	Economic structure	Agriculture	Industry	Service	Agriculture	Industry	Service
		8.4%	39.2%	52.4%	17.4%	38.8%	43.7%

*(Source: built by the author)*

The two countries established diplomatic relations in 1976 and prospered in 1978. The relations was gradually improved and developed the most when Vietnam joined ASEAN. The two countries have upgraded relations to “Strategic Partners” by 2013. Many bilateral cooperation mechanisms have been adopted and implemented by the two countries.

## ***1.2. Actual situation of economic trade and investment relations between the two countries***

### *1.2.1. Economic trade relations between the two countries*

#### *1.2.1.1. The period before 1990*

Since 1976, the trade relations between the two countries has developed, based on the Agreement on Trade, Economic and Technical Cooperation (1 in 1978). Here, the political factor of slowing of trade relations between the two countries. Thailand has isolated Vietnam to maintain its cooperative relations with the West and ASEAN. But the trade relations between the two countries are not interrupted.

**Table 2. Import-export turnover between Vietnam and Thailand during the 1986 - 1990 period**  
(million USD)

Year	1986	1987	1988	1989	1990
Total turnover	4,7	7,5	13,0	63,6	114,7
Growth (%)		59,6	73,3	389,2	80,3

(Source: “Economic Relations between Vietnam and Thailand: 20 years of development”-  
Ha Huy Thanh - Journal of Economic Research No.224 in January 1997)

Since 1987, Vietnam has had a great turning point in domestic and foreign affairs. Trade between the two countries increased at the pace of transition to a market economy and the opening level of the economy. When Vietnam really moved to the market mechanism (1989), trade relations between the two countries have jumped, the trade growth in 1989 increased 389.2% compared with 1988.

#### *1.2.1.2. Trade relations from 1990 to present*

Since 1992, there have been favorable conditions for the development of trade relations between the two countries. Trade turnover between the two countries has increased rapidly.

**Table 3. Two-way trade turnover (1990 – now)**

No.	Year	Total two-way trade turnover (billion USD)	Ghi chú
1	2009	5,78	
2	2013	9,41	
3	2015	11,5	
4	2016	12,5	
5	4/2017	4,3	
6	2020	20	dự kiến

(Source: <http://bnews.vn/kim-ngach-thuong-mai-viet-nam-thai-lan-khong-ngung-gia-tang/53961.html> - 15-08-2017)

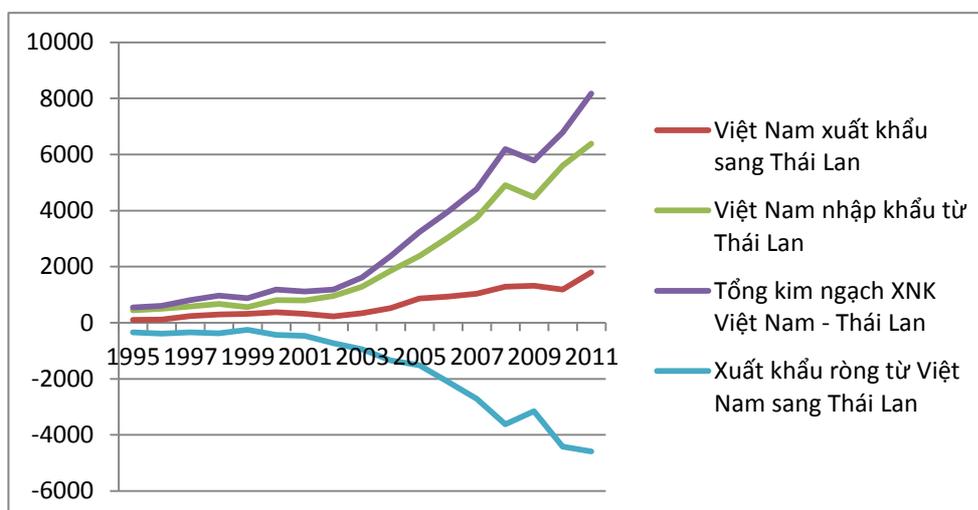
Products are diverse, rich types, to meet consumer demand and production

**Table 4. Major goods imported from Thailand in the first 7 months in 2017**

Goods/Products	7months in 2017	7months in 2016	% of compare
<i>Total turnover (USD)</i>	5.637.505.885	4.613.059.696	+22,21
Electrical appliances and components	590.809.009	629.099.053	-6,09
Vegetables	516.823.265	162.893.699	+217,28
Machinery, equipment, tools, spare parts	506.267.997	451.506.538	+12,13
Automobiles in complete units all types	393.659.348	343.189.464	+14,71
Plastic materials	347.800.700	299.285.368	+16,21
Computers, electronic products and components	305.445.675	211.031.745	+44,74
Car components and accessories	303.245.760	372.714.405	-18,64

(Source: <http://www.vinanet.vn/thuong-mai-cha/kim-ngach-xuat-nhap-khau-viet-nam-thai-lan-tang-gan-24-678227.html>)

**Chart 1. Import-export turnover of Vietnam - Thailand (1995 – 2011)**



(Source: General Statistics Office)

Thus, the import-export turnover between Vietnam and Thailand from 1995 up to now generally tends to increase. In 2011, the total import-export turnover has increased about 15 times compared with 1995, with the average growth rate of 19.7%/year. Vietnam exported mainly fuel and minerals,

**Table 5. Exports of Vietnam in the 1990-1994 period**

No	Goods/Products	Proportion %	Remarks
1	Wood, rattan	70	
2	Raw skin and leather	5,4	
3	Scrap	5,7	
4	Frozen Seafood	4,0	
5	Other products	14,9	
<b>Total</b>		100	

On export value norms in the following table

**Table 6. Value structure of Vietnamese goods exported to Thailand in 2011**

	Value (USD)	Proportion (%)
Total turnover	1.792.249.016	100
Seafood	106.042.940	5,91
Vegetables	14.477.386	0,80
Cashew	26.384.649	1,47
Coffee	34.416.720	1,92
Pepper	7.317.917	0,40
Confectionery and cereal products	15.820.654	0,88
Coal	31.882.420	1,77
Crude oil	42.497.093	2,37
Petrol of all kinds	51.609.082	2,87

(Source: General Department of Vietnam Customs)

The structure of exported products from Vietnam to Thailand has made more positive changes; from exporting raw products to diversifying products.

#### 1.2.2. Actual situations of Investment

##### 1.2.2.1. Thailand's investment in Vietnam.

Thailand ranked 10/116 countries and territories investing in Vietnam with 458 direct investment projects in force, with a total registered capital of nearly USD 8.2 billion, mainly in the fields of processing, manufacturing, trade and agriculture, forestry and fishery in 41 provinces and cities. Major investors: Long Son Petrochemical Company Limited, CP Vietnam Livestocks Company Limited and Vina Kraft Paper Company Limited.

**Table 7. Direct investment of Thailand into Vietnam  
In the 1995 – 1999 period (million USD)**

Year	1995	1996	1997	1998	1999
Projects Volume	13	14	11	2	1
Total investment	135,7	190	271	0,85	2,0

(Source: Ministry of Planning and Investment - Nguyen Tuong Lai, the relations between Vietnam and Thailand in the 1990s, Social Science Publishing House, 2001)

The investment volume of Thai into Vietnam tended to increase. In 1998, due to the impact of the financial crisis, the project volume is decreased rapidly.

**Table 8. Direct investment of Thailand by field (Million USD)**

	Investment Fields	Project volume	Registered capital	Proportion (%)
1	Industrial production and processing and mining of gem.	43	487, 3	46, 7
2	Hotel, Tourism	17	256, 2	24, 5
3	Bank services.	7	95	9, 1
4	Other fields.	11	204, 5	19, 6
	Grand Total	78	1.043	100

(Source: CATBD Department of Commerce).

Thailand has not yet invested in hi-tech industries with large amounts of capital. Due to: Thailand's economy is also in need of large development investment, for the modern industries; technical technology skills, management ability... between Vietnam and Thailand is not much difference; Vietnam's investment environment has a lots of restrictions.

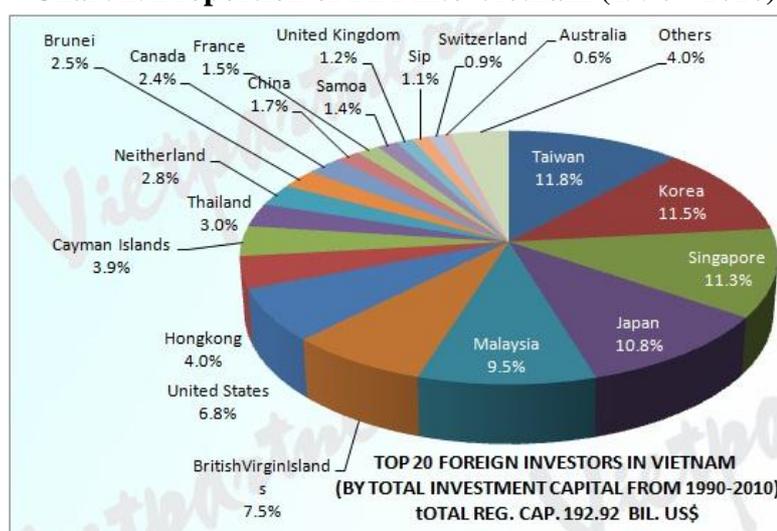
**Table 7. Thailand investment into Vietnam in the 2004 – 2011 period**

Year	2004	2006	2007	2008	2009	2010	2011
Accumulated projects volume	112	125	160	169	215	240	271
Total investment (billion USD)	1,376	1,5	1,56	1,66	2,96	5,84	5,8

(Source: according to [www.mofa.gov.vn](http://www.mofa.gov.vn) in 2009; and Annual abstract of statistics)

At this period, Thailand's investment into Vietnam increased both in terms of project size and total investment. Thailand ranked 10<sup>th</sup> position in more than 90 countries and regions investing in Vietnam and was the third in ASEAN countries (after Singapore and Malaysia). In 2011, Thailand had 32 projects with a total registered capital of USD 159.68 million. (Source: VCCI - Thailand market profile)

**Chart 2. Proportion of FDI into Vietnam (1990 - 2010)**



(Source: <http://www.vietpartners.com/Statistic-fdi.htm>)

Thailand is the first leader in FDI investing into Vietnam in many fields with the forms of: 100% foreign capital; Venture; BOT, BTO, BT. By investors: Siam Cement Group; CP Group; S Khon Kaen; Royal Company; Berli Jucker Public Company (BJC)

#### **1.2.2.2. Investment from Vietnam into Thailand.**

This process has not developed, until 03/2008, investment capital of 305.2 thousand USD, for: joint venture production and trading lubricants between Cuu Long Trade and Transport Company Limited and Inter Lube Trading Co.Ltd Company, Thailand produces and trades lubricants, capital of 150.000 USD; Project of Electronic and Information Joint Stock Company: 100% Vietnamese capital project of EIS Information Technology Joint Stock Company with the objective of designing and supplying informatics software with capital of 155.200 USD.

(Source: Vietnam-Thailand cooperation Report – 03/2008)

In addition, the two countries cooperated in the fields of national security, transportation, agriculture, culture and tourism; Strengthen cooperation in the field of environmental crime; v.v...

## **2. Comments and evaluates**

Under the specific conditions of the two countries and international schools, the trade and investment cooperation relations between Vietnam and Thailand has many achievements and limitations.

### ***2.1. About economic and trade cooperation***

2.1.1. *Achievements*: Constantly increasing with faster and faster speed, reflects the relationship of the two countries are growing strongly. Vietnam has gradually reduced the export share of raw materials and increasingly diversified the list of export products. This result is due to the positive impact of the opening policy and international economic integration of the two parties; Enterprises in the two countries have made changes in their market search activities; The role of the State is to support the removal of difficulties in policies and support for export promotion of both countries.

#### *2.1.2. Limitations*

(1) Vietnam is constantly trade deficit. Vietnam is still a supplier of raw materials (even in small scale) to Thailand and a potential market for Thailand's enterprises. Vietnam's export products to the Thailand market are facing a lot of difficulties, and has to compete with Thailand goods in the domestic market. Due to the similarity of the import and export structure of the two countries, Vietnam's goods are difficult to penetrate into Thailand at traditional channels. Meanwhile, the strength of its distribution system lies in the modern canal. The Thailand market is quite far ahead of Vietnam, with Thai people's awareness of the brand being very high; Vietnamese brand name is difficult to take place.

(2) *Thailand goods dominate the Thailand market, overwhelming Vietnam goods.* Distributors of Thailand goods are supported by suppliers to develop distribution systems, focusing on developing rural markets. Thailand enterprises are supported by the Government. In addition, Thailand's "pedestal" is the tourism industry.

### ***2.2. On investment relations***

#### *2.2.1. Achievements*

The investment relations between Vietnam and Thailand is on the rise. Due to the need to transfer capital from Thailand abroad to reduce risks, seek new opportunities. The birth of the ASEAN Economic Community is an opportunity for Thailand to penetrate deep into Southeast Asia. Vietnam's advantage is in cost and freight

#### *2.2.2. Limitations*

The investment relations between Vietnam and Thailand is not commensurate with the potential of both countries. Vietnam mainly acts as an investment receiving country from Thailand.

The main focus is on processing agricultural and marine products, producing construction materials, exploiting gems; hotel and tourism; banking services... Few

projects on heavy industry production or infrastructure upgrading. Technology transfer in the style of “flying saucer” from Thailand to Vietnam. As a result, the economy of Thailand itself is in great need of investment, especially for modern industries; technical technology, management ability...; Vietnam's investment environment is still limited.

### ***2.3. Discussing the environmental impact from the Viet-Thai commercial relationship***

The impact is expressed on three aspects: from goods; from technology and from trade structure

2.3.1. Environmental impact from goods: New products and equipment are more advanced than environmental protection, enhancing environmentally friendly goods. Turbulence and trade will affect the atmosphere and atmosphere, causing environmental incidents. From trade affects the over-exploitation of resources

2.3.2. Environmental impact from technology: in competition, improved technology, reduced waste to the environment. In contrast, importing new goods can pollute the environment

2.3.2. Environmental Impact from Trade Structure: Trade relations can change the structure of the national economy. The increase in production is based on natural resources or the production itself, potentially damaging to the environment.

### ***2.4. Discuss the environmental impact of trade liberalization***

Trade liberalization will increase both negative and positive impacts on the environment. The GATT says that commodity elasticities are based on income; liberalization of trade offers the opportunity to select green products; The state can increase the environmental standards. Trade liberalization eliminates subsidies, which will have a positive impact on environmental protection. For example CAP agricultural policy.

On the contrary, it is the negative impact of trade liberalization on the environment: maximizing resources, polluting the environment; Focusing on economic objectives, exhausting natural resources, causing environmental damage; changes in ownership and use of land threaten the environment.

Challenges for Vietnam: Increased pollution from FTAs; from FDI, Vietnam imports with high levels of pollution; export oriented, is the premise chon guy "muscle disease Netherlands"; counterfeit goods, low quality goods also contribute to environmental damage; power industry and industrial parks contribute badly to the environment

### ***2.5. Discussion on the enhancement solution***

That should be the overall solution from the State to business and the whole society in two directions, in the following directions:

(1) *Improving the legal framework and reforming administrative procedures.* The Vietnamese side needs to revise the legal system to adjust regulations that are no longer appropriate or transparent, towards consistency in tax policy. Accompanying the urgent and drastic reform of administrative procedures in Vietnam, creating psychological confidence for businesses, encouraging them to accept long-term investment.

(2) *Upgrading infrastructure and handling environmental impact.* Infrastructure currently does not meet the requirements of the modern business environment: upgrading seaports, airports, road transport systems; Completing the information system,

communication, Internet connection, Incorporation of environmental targets into the planning work from the central to local level; Transition of environmental management from imperative to economic solution; Strengthen control of species and quality of inclusion on environmental and socio-economic criteria.

(3) *Develop key export products and appropriate investment orientation.* Agricultural products likely to be exported to Thailand (coffee, vegetables, fruits, etc.) should be encouraged to invest in specialized production areas using advanced techniques and post-harvest technologies to improve design, quality and reduce costs.

(4) *Strengthen export promotion and human resource development*

Information should be enhanced for businesses through direct market surveys or through various forms of marketing. The understanding and mutual trust between the business community of the two countries is a very important factor to promote trade between the two countries.

(5) *Focus on Thailand market research,* In the spirit of: (i) grasping the needs of Thai consumers; (ii) lower production costs; (iii) Strictly commits to time and product quality.

### **C. Conclusion**

The leaders and people of the two countries jointly cultivated, consistent with the trend of regional and global development in the context of internationalization - integration, friendship and comprehensive cooperation of Vietnam - Thailand will grow. Basically, the two countries must come up with a two-dimensional, two-way trade agreement for trade and investment in the new context. At the same time, combine trade and investment with the advantages of each country in accordance with the provisions of ASEAN and related international conventions.

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# TRADE AND ENVIRONMENT IN INDONESIA: CASE STUDY OF EU-INDONESIA FREE TRADE AGREEMENT

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## **Abstract**

*This paper attempts to investigate whether environmental impacts, would increase or decrease with trade liberalization. Trade expansion, that is, Comprehensive Economic Partnership Agreement (CEPA) between EU (European Union) and Indonesia causes environmental damage in Indonesia. Trading activities between Indonesia and EU makes some negative externalities even the vision of CEPA included the concrete measures to promote the sustainability of environment of EU-Indonesia. Using industrial pollution projection system developed by the World Bank in 1995, it has been found that the estimated amounts of pollution have been increasing in Indonesia after three years of CEPA implementation from 2014 to 2016. Even though the share of export of most polluting sectors has been decreasing, its contribution on the pollution intensity remains the largest. Since chemicals become the most polluting sector with its rapid growing in export to EU countries, this sector needs to be considered in trade negotiations in order to lessen negative impacts of trade to the environment.*

**Keywords:** *trade and environment; liberalization; pollutions; Indonesia-EU CEPA*

**JEL Classifications:** *F18; F10; F64; F02*

## **1. Introduction**

In recent years, trade liberalization has brought the issue of the relationship between trade and environment whether it has positive or negative impact on the environment. The production of goods, either they are exported or imported, would have environmental impacts like other production. With expanded trade, it is generally believed that the trading nations would be beneficial through increasing efficiency and greater wealth. However, what if the expanded trade leads to environmental degradation? Since trade always involves two or more nations, the burden of environmental externalities can be transnational and it will cause significant problems when international trade agreements do not explicitly include any regulations for environmental protection.

There are many ways that expanded trade may encourage the entire world production which leads to increase the pollution intensity and environmental damage.

Trade activities always involve energy use to transport goods overseas resulting on air pollution. For example, the Kenyan exporters of horticulture products deliver the flowers to Europe by jet in which the energy consumed in jet fuel causes environmental issue. On the other hand, displacing peasant with larger-scale export agriculture and growing crops focusing on export also will damage the environment. They will use their economic power to demand environmentally damaging input subsidies which lead to over irrigate, over mechanize, and overspray (Harris, 2004). Over spraying the crops through pesticides will cause harmful effects for health. The harvested products will contain the leftover of hazardous chemicals which are dangerous to consume.

Even though expanded trade seems to have negative impacts on the environment, it also has beneficial effects. Based on theory of comparative advantage, trade encourages the trading nations to be more efficient in exploiting their resources and avoiding the waste. Trade expansion can spread the environmentally friendly technology to many developing countries through replacing the high-polluting power plants with modern, highly efficient ones. Transnational companies also play important role by introducing efficient technologies to develop cleaner process for industrial sectors. Hence, the relationship between trade and environmental quality is somewhat complicated and needs to investigate further.

Previous studies have discussed about trade liberalization and environmental issues since 1970s, particularly after some trade negotiation rounds. Trade expansion is strongly related to rapid growth of the global economy which leads to gradual degradation in the environment. The relationship between economic growth and environmental damage was theoretically depicted through *Environmental Kuznets Curve* (Grossman and Krueger, 1991). This concept predicted three stages of environmental decay that it would rise at lower income levels, attain a maximum level at turning point income, and then decline. During the first stage, the nation is positioned at the early phase of industrialization and development, which is characterized by exploitation of natural resources and dirty technologies for production, causing the environmental decay. As time goes by, quality of life improves since people wealthier and they tend to demand for an environment-friendly society, making the government to pay attention on how to preserve environmental quality. Shafik and Bandopadhyay (1992) confirmed this proposition by finding a consistent and significant relationship between income and environmental quality indicators. An initial rise in income would be followed by an increase in pollution matter such as sulphur dioxide and then declined once the economy attained a given level of income. Grossman and Krueger (1995) predicted that the turning point of income would come before \$8,000 income per capita. Generally, this relationship has been established only in some areas of environmental degradation with immediate and visible effects, such as air pollution.

The net effect of trade liberalization on environmental quality can be decomposed into three components, such as composition effect, scale effect, and technique effect (Grossman and Krueger, 1991). The composition effect occurs when trade is more open, causing specialization which makes a country to export products with abundant resources and import products with relatively scarce resources. The magnitude of the composition

effect is based on the comparative advantage of the country whether it is in pollution-intensive sectors or less polluting sectors. The positive impact on local environment would emerge if a country exports less polluting sectors after trade liberalization. The scale effect comes from enhanced economic activities which is hazardous to the environment since it produces additional emissions. The technique effect takes place when cleaner production techniques are introduced which lead to lower level pollution per unit of output. Then, the net effect for the environment is based on the combination of those components, not the individual component. It can be positive if the scale effect is less than the composition and technique effects, and negative if the opposite holds.

Some studies argued that trade liberalization has brought positive environmental consequences. Grossman and Krueger (1993) found that more liberal trade through easier access to US market has generated income growth in Mexico to the level that was powerful enough to encourage the government for environmental protection. Since Mexico was characterized by labor-intensive industry and agriculture sectors in their export, pollution reduction was inevitably to take place. Antweiler *et al.* (1998) supported the argument that freer trade leads to pollution reduction as shown by their estimation that a rise in GDP per capita by 1% from trade liberalization will decrease the sulphur dioxide concentration about 1%.

Meanwhile, opposite results have been found in other studies, particularly in the case of developing countries. Developing countries are likely to specialize and export pollution intensive sectors due to their characteristics of lack of environmental regulations with greater capacity to absorb pollution. In this case, trade liberalization could hamper environmental quality. Copeland and Taylor (1994) concluded that liberalized trade increases pollution levels in South countries with low level of human capital and decreases pollution levels in North countries with high level of human capital. Cole *et al.* (1998) estimated that the emissions in five pollutants (nitrogen dioxide, sulphur dioxide, carbon monoxide, suspended particular matter, and carbon dioxide) in most developing countries would increase after Uruguay Round of trade negotiations.

Based on the previous studies, trade liberalization may have positive or negative impacts on the environment depending on comparative advantage of the country. Policy coordination among trading partners is very limited and the environmental issues are generally neglected in trade agreements. Hence, linking better environmental management with trade negotiation is necessary to maintain the sustainability of the environment. This study will provide better understanding of the environmental consequences of Free Trade Agreements (FTAs) in the case of negotiation and implementation of Comprehensive Economic Partnership Agreement (CEPA) between EU (European Union) and Indonesia.

The relations between Indonesia and EU member states have been marked by strong economic relations: the EU remains the third largest destination of Indonesian exports, and certain EU member countries have consistently been the main sources of foreign investment in Indonesia. However, since EU has dynamic and larger economy with its growing demand for Indonesia products especially in furniture, vegetable oils and

footwear products. Creating new export opportunities in the ASEAN markets is a priority under the EU's Global Europe trade strategy. From China's perspective, China wanted to make ASEAN as its source of raw materials for industrialization (Bernardino, 2004).

As time goes by, negotiating directives obtained in 2014 by EU-Indonesia the scope of tariff reduction in an EU-Indonesia bilateral context is limited by the existing level of tariff liberalization especially within the framework of WTO and ASEAN. A simple comparative analysis of tariff lines shows that those already relative low. The simple average of MFN tariff applied, is 5,3% for the UE (2009) and Indonesia (2007) The Vision Group therefore recommends a move to zero tariffs for 95% of tariff lines (covering at least 95% of tariff line (covering at least 95% of trade value). Moreover, the Vision Group recognizes that in asymmetrical relationship the speed of implementation of tariff reductions takes into account the different levels of development. Still, as 60% of the tariff lines of the two parties are between 0 and 5% and 20% are already at zero, gains from tariff measures would be expected to be small.

Different speeds should apply to different products of different "sensitivities". The least sensitive ones should be liberalized faster with the greater parts of commitment implemented at the time of entry into force of the agreement. The most sensitive ones should be liberalized more slowly.

Finally, safeguards and provisions on sensitive sectors may be incorporated. At the same time, credibility and ambition would be negatively affected if such provisions and their application would not remain truly exceptional and subject to objective criteria.

In relation to this, little research has been carried out in the context of environmental consequences of free trade in a specific country. This study aims to fill this knowledge gap by assessing the possible implications of trade on the environment from the perspective of a specific country, which is Indonesia in this case. Then, Indonesia-EU CEPA was selected as a case study to estimate the possible impacts of FTA on any change in the trade flows and the environment through the use of trade-environment matrix.

## **2. Method**

To evaluate whether freer trade will lead to environmental degradation, the method has to be able to measure the environmental consequences of production activities caused by trade, and consider the interaction between trade, income, and environmental quality (Vutha and Jalilian, 2008). In this study, we employed an adjusted method to estimate the effects of trade on pollution levels based on industrial pollution projection system from Hettige et al. (1995) in World Bank. This method classified trade sectors into three categories based on the amount of pollution emitted by their production and developed trade-environment matrices to estimate pollution intensity. Through this method, we can indicate the impact of trade on one feature of environmental deterioration which is pollution. Even though this study realizes the shortcomings of using only pollution data to indicate the impact on the environment, this can be an initial point for further research.

The adjusted method in this study estimated industrial emission to the air, water and land and also the sum of emissions to all mediums using value of output, value added, and

employment. To measure the impacts of trade on pollution levels, we use pollution intensity levels for all media emitted by physical volume of output valued at one million €. Then, trade sectors are classified into three categories based on pollution emission using **polluting sectors**, referring to those with toxic pollution of less than 500 pounds per million € of production Harmonized System (HS) for product classification: **most polluting sectors** or pollution-intensive sectors, referring to those with total toxic pollution of more than 1,500 pounds per million USD of production; **moderately polluting sectors**, referring to those with total toxic pollution level of 500 to 1,500 pounds per million USD of production; and **least polluting sectors**, referring to those with toxic pollution of less than 500 pounds per million USD of production

Then, this study will construct a trade-environment matrix using data from the export trade matrices from Indonesia to EU by assuming that increasing exports will lead to increase production and a simultaneous change in pollution levels. In the trade-environment matrix, the rows classified traded sectors based on their level of pollution emission. The first column records time frames in the trade relationship between Indonesia and EU CEPA (2014). The second column depicts the relative share of the product to total trade, while the third column presents estimated pollution intensity (EPI), which is calculated from the World Bank study by Hettige *et al.* (1995) to measure the pollution level generated by the value of final products in million € .

### 3. Results

**Table 4. Trade-environment Matrix for Indonesia's Exports to EU**

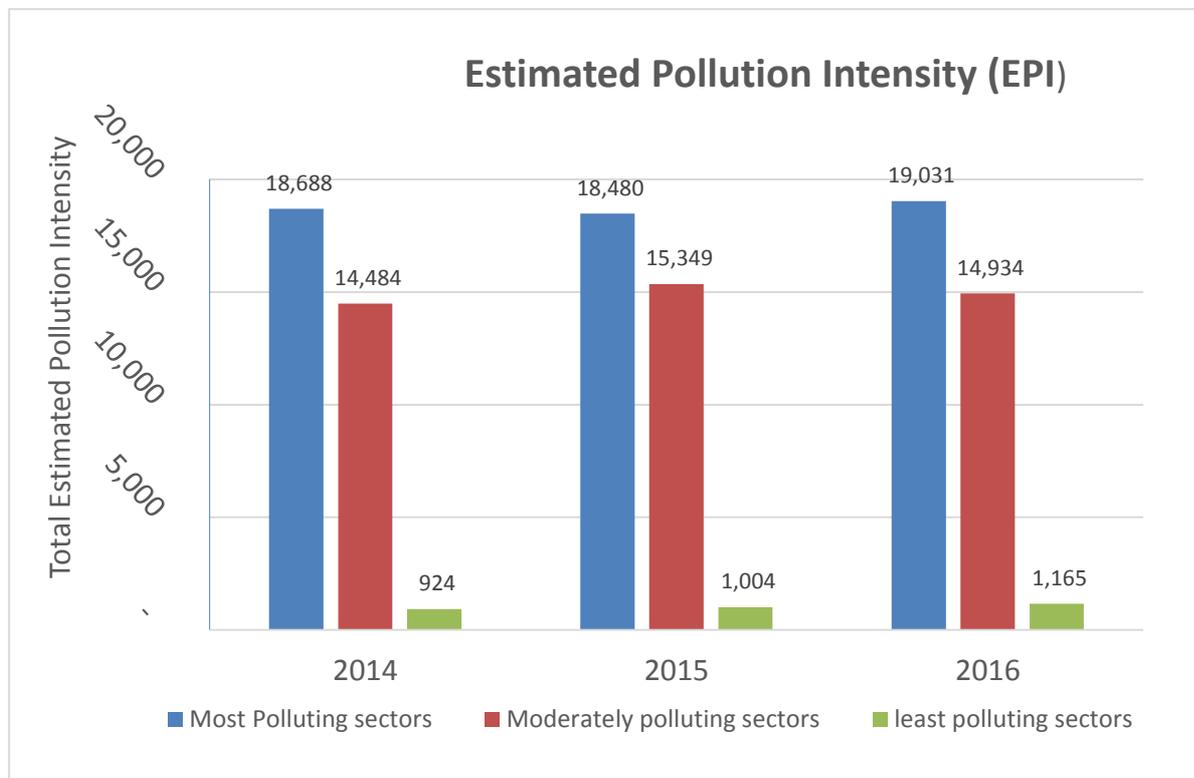
HS 2016 Section	Export in € Million			Share (%)			EPI in € Million		
	2014	2015	2016	2014	2015	2016	2014	2015	2016
<b>Total</b>	<b>14,436</b>	<b>15,317</b>	<b>14,626</b>						
28-38 Products of the chemical or allied industrie	912	887	1,012	6.3	5.8	6.9	11,400	11,088	12,650
40 Plastics, rubber and articles thereof	1,146	1,099	903	7.9	7.2	6.2	1,375	1,319	1,084
39-43 Raw hides and skins, and saddlery	117	133	136	0.8	0.9	0.9	585	665	680
71-83 Pearls, precious metals and articles thereof	54	53	41	0.4	0.3	0.3	486	477	369
71-83 Base metals and articles thereof	538	548	472	3.7	3.6	3.2	4,842	4,932	4,248
71-83 Arms and ammunition	-	-	-	-	-	-	-	-	-
<b>Most Polluting sectors</b>	<b>2,767</b>	<b>2,720</b>	<b>2,564</b>	<b>19</b>	<b>18</b>	<b>18</b>	<b>18,688</b>	<b>18,480</b>	<b>19,031</b>
25-27 Mineral products	684	742	392	4.7	4.8	2.7	547.2	593.6	313.6
84-85 Machinery and appliances	1,772	1,933	2,028	12.3	12.6	13.9	886	967	1,014
50-63 Textiles and textile articles	1,663	1,722	1,701	11.5	11.2	11.6	11,641	12,054	11,907
86-89 Transport equipment	202	297	307	1.4	1.9	2.1	141.4	207.9	214.9
93-96 Miscellaneous manufactured articles	603	664	620	4.2	4.3	4.2	482.4	531.2	496
97-99 Works of art and antiques	1	1	5	0.0	0.0	0.0	0.6	0.6	3.0
90-92 Optical and photographic instruments, etc.	345	444	456	2.4	2.9	3.1	138.0	177.6	182.4
64-67 Footwear, hats and other headgear	1,294	1,635	1,606	9.0	10.7	11	647	818	803
<b>Moderately polluting sectors</b>	<b>6,564</b>	<b>7,438</b>	<b>7,113</b>	<b>46</b>	<b>49</b>	<b>49</b>	<b>14,484</b>	<b>15,349</b>	<b>14,934</b>
1-5/ Live animals; animal products	209	218	230	1.4	1.4	1.6	41.8	43.6	46
6-14/ Vegetable products	451	583	507	3.1	3.8	3.5	9.0	11.7	10.1
1-5/ Animal or vegetable fats and oils	2,935	2,675	2,507	20.3	17.5	17.1	58.7	53.5	50.1
15-24 Foodstuffs, beverages, tobacco	792	785	849	5.5	5.1	5.8	15.8	15.7	17.0
44-46 Wood, charcoal and cork and articles thereof	419	518	512	2.9	3.4	3.5	167.6	207.2	204.8
47-49 Pulp of wood, paper and paperboard	166	179	227	1.1	1.2	1.6	581.0	626.5	794.5
68-70 Articles of stone, glass and ceramics	84	77	70	0.6	0.5	0.5	50.4	46.2	42
<b>least polluting sectors</b>	<b>5,056</b>	<b>5,035</b>	<b>4,902</b>	<b>35</b>	<b>33</b>	<b>34</b>	<b>924</b>	<b>1,004</b>	<b>1,165</b>
<b>TOTAL</b>	<b>14,387</b>	<b>15,193</b>	<b>14,581</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>34,096</b>	<b>34,834</b>	<b>35,129</b>

*Source: Author estimation based on data from UN COMTRADE.*

Table 4 presents a trade-environment matrix for Indonesia's exports to EU. It suggests that Indonesia exported about 2,5\$ billion of the most polluting sectors to EU in 2016, or 18% of total exports, with pollution intensity generated by the production estimated at 19 million pounds. Even though its portion of total exports has been

decreasing, its pollution intensity has been increasing after three years of Indonesia-EU CEPA implementation and its contribution to pollution intensity still remained the largest. This significant increase is mostly due to the dramatic acceleration of export growth in chemicals sector in response to greater demands from China.

**Figure 1. Diagram of Estimated Pollution Intensity (EPI)**



For the moderately polluting sectors, the total amount of Indonesia's exports to EU was \$7,1 billion in 2016, or 49% of total exports. Since the production activities in these sectors generate less pollution than the pollution intensive sectors, the pollution effects of these exports were less significant, as shown by the EPI level of 15 million pounds. Nevertheless, the amount of pollution emitted by these exports was larger after Indonesia-EU CEPA. This is mainly due to the improving export performance of animal and vegetables fats oil from rising prices with its peak in 2014, particularly coal as the major contributor in the mineral sector representing around 49% of the total export to EU.

The trade-environment matrix also demonstrates that Indonesia generated about one-third of its total exports to EU from the least polluting sectors. Even though the share of the least polluting sectors has been increasing after three years of the Indonesia-EU CEPA implementation, the future effect of these trade sectors on pollution levels is likely to be infinitesimal concerning that the estimated EPI of just around 1 million pounds.

#### **4. Discussion and Conclusion**

Based on previous research of Azizurrohman and Hartarto (2017), they found that in ASEAN-China Free Trade Agreement (ACFTA), the pollution levels of Indonesia has been increasing because there is no environmental regulation about the sustainability of

environment. Therefore, in this case, found that the pollution level in Indonesia has been increasing even CEPA has the sustainability of environment regulations.

This study has exposed the general relationship between FTA, trade and the environment through a case study of Indonesia-EU CEPA by examining the impact of Indonesia-EU CEPA from the perspective of Indonesia as the largest economies in ASEAN. It has been found that after three years implementation of Indonesia-EU CEPA, the share of the most polluting sectors in total export from 2014 to 2016 has been declining from 19% to 18%, the share of the moderate polluting sectors has been increasing from 46% to 49%, while the share of least polluting sectors in total export has been decreasing from 35% to 34%. However, the estimated pollution is still high from 34,096 million pounds to 35,129 million pounds over fifteen years. The significant rise in the estimated pollution mostly came from higher demand of the moderately polluting sectors especially on animal and vegetables products by EU particularly after the implementation of Indonesia-EU CEPA. It has been recorded that the export value of chemicals to EU has been gradually increasing, leaving the estimated pollution growing quickly. Even, the contribution of pollution generated by chemical sector toward total estimated pollution reached 45.8%. Since Indonesia-EU CEPA already contained agreement for cooperation on environmental problems due to trade liberalization, chemical sector is necessary to be considered in trade negotiations in order to mitigate negative impact of freer trade to the environment since it is categorized as most polluting sector with significant increase in the export production.

In conclusion, this study asserts that trade could be a source of environmental issues, particularly in countries without strong regulatory frameworks or management system. Hence, this study recommends that environmental issues need to be more considered in trade negotiations between Indonesia and EU in order to lessen any negative impact of trade to the environment.

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# “WILD FAUNA” PROHIBITED COMMODITIES: THE DEFINITIONS OF TRANS-BORDER COMMODITIES IN THE CONTEXT OF GLOBAL DEVELOPMENT\*

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## **Abstract**

*The objective of this paper aims to study the definitions of trans-border commodities between the border marketplaces of Thailand and Laos at Nong Mon village trade checkpoint, Nong Khai province. The data is applied for this study is from qualitative research methodological approach by collecting documentary data and fieldwork data. For the collecting data in field, the researcher interviewed the respondents by in-depth interview, also applied the participatory observation and none-participatory observation techniques.*

*The result of this study defines the definitions of forest products as wildlife and wild plant species which are trans-border commodities. The definitions have been being defined through the dynamic of ages affected by conductions of international relation policies in order to develop and regulate border areas which are influenced by supranational organizations' concepts and disseminated through the nations and local borders. Those influenced the forest products in the past that used to be “the traditional commodities” have become “the prohibited commodities” in the border marketplace.*

**Keywords:** Forest Products, Trans-border Commodities, Border Marketplace, Globalization

## **1. Introduction**

Developments in Greater Mekong subregion since 1992 has been driving international relationships to distribute prosperity and reduce poverty in the region with developments of transportation, economic corridors and trans-border trading and investment developments as well. (Sommai Chinnak, 2012) Thailand has the policies that

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matches those changes, very obviously with the policy name is “the policy of changing the battlefields into trade areas”, so that, countries in greater Mekong subregion cooperate each other and become the integration region where are full-filled with movement of migration, trading, immigrant workers and ideology these affected economic activities in many border towns have been expanding and grown. (Pathom Hongsuwan, 2010)

The developments influenced to establish new economic areas where are reflected through these things, for example, establishment of border towns, special economic areas, immigrations, customs and trade checkpoints, etc. (Sommai Chinnak, 2012) ,especially, the relationship developments of both sides of countries (Thailand and Laos) including to developments in economic, social and cultural aspects. These developments merge borders areas into national, regional, and global economic system. Due to economic, social, political and cultural changes under the cooperation of countries in greater Mekong subregion were based on new conformational special areas establishing where are regulated by state and supranational organization, so those changes affected to the border marketplace and Nong Mon trade checkpoint that used to have the traditional trade circumstance as the trade was conducted informally by bartering basis, especially forest products bartering. The effect of changes lead to separate the economic relationship of the old trade circumstance that used to be defined as “Trading” ,but then the new definition came to replace the old one and become “Smuggling” (Solomon, 1970). The trade smuggling cannot be happened without the establishment of nation-state boundaries which went to regulate the international laws in many ways.

Regarding the studies of boundary and trans-border trade in the past, the contemporary studies include a study of Appadurai (1996) describes that the trade liberalization was influenced by globalization concepts and affect to the national boundaries become liberalized borders as well as trans-border movement of people are more intensively. These influences of globalization enervate state and state boundaries, and state authority in the border areas will be weakened by trans-border circumstances which involve migration of people, media, technologies, capitals and thought. As a study of Walker (1999) “The Legend of the Golden Boat” focuses on free trade policies or economic liberalization that influence many countries have to be liberalized their borders in order to bear people movement and trans-border commodities. Notwithstanding, Walker describes that economic liberalization does not overshadow the state role, but the state just changes its role for controlling and facilitating in border areas. Moreover, Walker also has the idea of the state authority in border area that state is not be the only one who has authority to regulate the rules in border areas, but the border people who live and do activities in the border, they are absolutely actors who are able to create, encounter and negotiate through many activities. This study accords to the offer by Donnan and Wilson (1999) which try to relate the relationships between state and border, and describes that borders are not the marginal area by themselves, but they are marginalized by nationalization that aim to build the stabilities for the territory and establish national cultures for the unity through each institutes. However, by the diversity of identities in border areas, borders are the areas where have very wide meaning that are not only the

physical and political meaning, but the meaning is comprehensive as being the sociocultural areas. The management of border areas is not only the people immigration control and prohibited commodities control, but it is the control in meaning level. So the border areas are the areas of power contestation in the definitions of social relationships between local people, state and international organization.

According to these concepts review, the study is applied the conceptual framework along the Walker's concept and aim to ask the question from offer by Appadurai (1996) describes that globalization causes people, capitals, commodities, technologies thought and ideals movement intensively, and then overshadows state, in the other hand, state is decreased their importance. This offer is not all exactly, for the border marketplace at Nong Mon trade checkpoint between Thailand and Laos, even their cultures are quite similar, but if this is comprehended in more other aspect that is border areas are involved and controlled by many organizations such as local government officers, central government and supranational organization. This aspect is different from Walker's offer describes that state is too much unity. Therefore; the management and control in border marketplace is intense and flexible depend on context and time.

Thus, the researcher interest to study the definitions of forest products as trans-border commodities which have been changed their definitions from normal commodities or "legal" to become the new definitions as "Prohibited Commodities" and are smuggled across the border. This study is applied context analysis approach and interpretation approach. So the objective of this study is to study the definitions of trans-border commodities in Thailand and Laos border marketplace at Nong Mon trade checkpoint, Nong Khai province in order to explain to understand the factors involving the definitions of trans-border commodities which are dynamic in each time.

## **2. Method**

Qualitative methodological approach is used to investigate historical dynamics of the border market at Nong Mon village in Nong Khai province. In-depth interview, participatory observation, and non-participatory observation are applied to collect primary data from key informants who are community seniors, Thai government officers, Lao trans-border petty traders, and trans-border trading stakeholders. Unit of analysis comprises of individual, group, and community.

## **3. Results**

The findings can be explained and categorized into two parts which are 1) Context of the border marketplace at Nong Mon border trade checkpoint, Nong Khai province 2) The definitions of trans-border commodities in the border marketplace at Nong Mon trade checkpoint, Nong Khai province

### **1) Context of the border marketplace at Nong Mon border trade checkpoint, Nong Khai province**

A history of relationships between Nong Mon village (Thailand) and Xayyasee village (Laos) along the Mekong River exists for a century through kinship-based system

since they were from the same community until the establishment of the modern Nation-state. Kinship-based system was used to connect people from the both sides of the Mekong River. The village leaders of Thai and Lao communities played a role in negotiating mutual agreements in order to coordinate each other to sustain their livings. When the Cold War has ended, interaction of those two sides of people has temporary separated due to a contradiction on political ideology between Thailand and Laos. This resulted in a difficulty on trans-border movement when military officers came to patrol the border area strictly. However, some local people still interacted with their relatives secretly through limited channels. Regarding the trade circumstance, the trade was conducted informally by bartering basis such as people from Laos made an exchange of rice to Thai traders for clothing.

When the world began to diverge into the era of commercial cooperation. Tensions in the border area have been decreasing through the policy of international trade cooperation. Countries in region have an idea to merge their cooperation in order to strengthen regional economic efficiency based on the Neoliberalism. Thailand as well, Thai government establishes new economic zones, for instance, border towns, special economic zones, temporary border checkpoint, and the border marketplace also. This is an effort from the government to manage the border area.

Since the establishment of the Nong Mon checkpoint, the national law has regulated people movement in the border community. The government starts focusing more on the border trade rather than socio-cultural based relationship. Capitalism has played larger role in border area, and caused the changes among border people's livelihood. In addition, pattern of the border trade has changed, for example, in the past trade normally conducted based on household consumption. Later on, modernity has influenced the Laotians. Most of the Laotians are now traveling across the border on the market day to make trade or shop modern commodities, for example, the secondhand clothing, shoes, cosmetics, etc. Today the Laotians come across the border for several purposes. Most of them travel to make trade, while some cross the border to receive medical treatment, or participate in local ceremonies such as weddings, funeral ceremonies, boat races, Songkran festival, and etc.

The border marketplace at Nong Mon village, Nong Khai province situated opposite Xayyasee village cultural checkpoint in Borikhamxay province Laos PDR. The border marketplace is close to Phu Kao Kuay National Park in Laos, where is a tourist attraction site, and is resourceful of wildlife and plant species. Main products that Lao traders bring to the border marketplace are wildlife, plants, seasonal vegetables, handicrafts, etc. The checkpoint at Nong Mon village firstly opened on February 8, 1999, and on every Sunday and Wednesday from 08.30AM to 04.30PM. In 2013, the governor of Nong Khai province has discussed with the governor of Borikhamsay province in Laos to exchange cooperation in various fields, and they agreed to increase checkpoint's operational day into three days/week which are on Wednesday, Friday, and Sunday in order to facilitate people to cross the border for participating local traditional activities. The Nong Mon border marketplace covers 1.6 hectares (Northeast Regional Strategy Institute Khon Kaen University, 2014). Regarding geographical location, in the past the

market area was dirt. There will be mud and damp in rainy season so that it is not convenient for traders to conduct business. In 2008, the market infrastructure has been improved by constructing new trade facilities, and zoning the trade area.

The management of people movement focuses on border immigration process which is regulated by the government. The border marketplace operates three days a week on every Wednesday, Friday, and Sunday from 08.30 am to 4.00 pm. The Laotians are eligible for overnight stay in Thailand for no more than three days and two nights in case of funeral ceremony attending or medical purpose. In case of medical purpose, Lao people have to show medical certificate, issued by Lao hospital, as an evidence to Thai border officers in order to confirm the visiting purpose. In addition, in Nong Mon area, local regulations are issued based on agreement of local border community at both sides of the Mekong River. Local regulations are to allow people from the both sides, who participate in traditional events or medical events, to cross the border beyond the official date and time of border crossing. In such case, relatives from Thai community must present a guarantee as the trip's supervisor for Lao visitor. In case of medical purpose, people who cross the border for medical treatment in Thailand are able to cross the border at 08.00 AM and return to the border not exceed 16.30 PM. This regulation is flexible and convenient for Lao people who receive medical treatment in Thailand and need to return to Laos on a single day. Lao People who crossed Nong Mon checkpoint for other purposes, such as shopping or medical treatment in the provincial hospital in Nong Khai, are required to present the border crossing-related documents with a clear purpose of visiting.

In case of Thai people who want to visit their relatives in Laos, generally their Lao relatives previously inform Lao border officers about the visiting. Thai people only present the border pass to Lao officers.

In the border trade, in the past, people on both sides of the Mekong River started making trade by bartering system, since a trade purpose was for household consumption only. Nature-based products they brought to make trade were depended on local production mode in communities where were different geographically. For example, Thai generally brought rice to exchange with wildlife and wild plant, such as bamboo shoots, rattan, squirrels, wild boar, from Lao people. The exchanging value is depended on the satisfaction between both traders without monetary basis. Value of product is calculated based on the difficulty of product availability. In another word, the exchange occurred in the past was done in order to help each other rather than making wealth. If the household product was oversupply, they then made trade with neighbors for products they needed. However, nowadays each household aims to produce more productivity for commercial purpose due to the Capitalism that invades to every single area particularly in the border area.

In the past, the pathway that people from the both sides of the country used to cross over was the natural pass. People for the both sides were able to cross the border freely without any regulations. Government officers, the patrol police, operated as the observer

only to secure the safety. Major commodities was rice. However, the trade area currently is being developed as the trade checkpoint. Rice becomes a prohibited commodities, since the rice has to be registered and transported by customs clearance process properly. Rice trade sometime is allowed if traders are done with a small quantity and for household consumption only. At present, there is a state regulation on the prohibited commodities which is applied to all the checkpoints over the country. Drug is strictly prohibited, while other commodities, for example, rice, LPG, alcoholic drinks, are prohibited as well. The imported commodities such as illegal wildlife in accordance with the Convention on CITES, onion, red garlic, etc are prohibited as well. However, in practical, some regulations are omitted especially at the time of food shortage in bordering areas, or at time of less border concentration. At present, the border crossing over among people from the both sides are still based on kinship system and locally relation between communities. This result in some regulations are flexible to apply.

In conclusion, the context of the border marketplace at Nong Mon border trade checkpoint where previously was formed based on sociocultural-based trans-border issue until the establishment of the Nation-state boundary which separated people of two-sides of the Mekong River. In the past, trade activity was based on household consumption purpose, but later on purpose of the trade has changed into formal trading relation with monetary basis. Regarding the border marketplace characteristics, there are changes occurred since the Nong Mon checkpoint has established. The changes on both physical, social and cultural perspectives influenced to the border marketplace management in terms of the administration and the security. The establishment of new economic zone under the Neo-liberalism has resulted in the legitimate authority of government to regulate the border area. The findings suggest that the border marketplace currently could not be viewed as a single economic space. There are a variety of perspectives within the border marketplace that are blended together, and causes flexibility and intensity on border issue, for instance, the decreasing of border regulation intensity that allows people from the both sides of country to sustain their relationships, or the border management cooperation between Thai and Lao governments which produces trade benefits to both countries.

## **2) The definitions of trans-border commodities in the border marketplace at Nong Mon trade checkpoint, Nong Khai province**

In this section, the researcher analyzed the definitions of trans-border commodities which are forest products including to wildlife and wild plants. The definitions are defined in the different ways in each periods, and they can be distinguished the differences into 2 periods. This first period is “Forest Products” as the traditional commodities (before 1983), and the second period is “Forest Products” as the prohibited commodities (1983 - present). The criterions of distinguishing is considered by duration before and after Thailand participated in CITES’s member in order to elucidate the factors which affected to change the definitions of trans-border commodities under the context related to manage that involved the roles between local government, national state, and supranational organizations. The details are as follows.

## **2.1) “Forest Products” as the traditional commodities**

The trans-border relationships between Thailand and Laos has been started so long since 1961 before the great Mekong subregion cooperation was established. With these relationships, they were established by exchange aspect that in the past the trade relationship was conducted for bartering basis, especially wildlife trade was extensive and revealed commodities that was normal for people of the both sides of Mekong River. This can be seen from making an exchange of rice baskets to rice seeds, and sometimes, Laotian brought forest products which can be both of wildlife and wild plants such as bamboo shoots, rattan, squirrels, chipmunks, jungle fowls, grilled big lizards to exchange with Thai people. The exchanging value was not determined formally, but it was depended on the satisfaction between both of them. In the other hand, the exchange was occurred in the past that was done in order to help each other rather than making wealth.

In the period which Thailand did not still sign the Convention on International Trade in Endangered Species of Wild Fauna and Flora or CITES. This the convention aimed to control international wildlife and wild plants trade that is danger for species in nature, especially endangered wildlife and wild plants. (Department of National Parks, Wildlife, and Plant Conservation, 2016) Because Thailand and Laos were the trade partner which did not sign CITES, so trade and exchange trans-border commodities were independently. The regulations and laws were not regulated to manage and control for trading, forest products gathering that people of both sides exchange them to rice. This is a local livelihood between the forests along the border of Mekong River. According to their definition, that was only just a livelihood.

## **2.2) “Forest Products” as the prohibited commodities (1983 - present)**

When the world has been immersed into the stream of globalization, the capitalism diverges all the corners of this world. This affected to establish trading across the border of Nong Mon village, and then it has been developed to become economic relationships which is depend on monetary base. After the WWII ended (1975), the world was re-organized by cooperation of many countries around the word. In 1973, the International Union for Conservation of Nature (IUCN) convened the international conference in Washington DC in order to draft the convention on International Trade in Endangered Species of Wild Fauna and Flora or CITES. The convention is the convention between countries purpose to control and stop wildlife and wild plants trade which is danger for species in nature, especially endangered wildlife and wild plants. The convention has been in effect from 1 July 1975, in the cast of Thailand participated in CITES’s member in 1983.

And then in 1992, after Thailand associated in CITES, Thailand has enacted Wild Animal Reservation and Protection Act, 1992. The Act has provisions about import export and countertrade the species controlled by CITES. This convention has affected to separate old economic relationships of people in border marketplace area that used to be called as “Trading” between both sides communities of Mekong River to become the new definition as “Smuggling” trade across border and also be a state authority infraction. (Jakkrit Sangkhamanee, 2012)

The effect by defining of state authority is forest products trading has become illegal whosever import specified commodities in the account of CITES into Thailand will have quilt and must be punished by laws. Nowadays, forest products trade by Lao traders is very risk to contact the customers, and their income for treating household is affected and decreased as well as trans-border trade becomes stagnant because Lao traders are intercepted to gather forest products. The intercepted traders are usually who get income from forest products in order to dispend goods in Thai side and bring back to sell in Laos or use in household. Anywise, with the situation, Lao traders don't surrender to regulations which control trans-border trade, so they flounder and negotiate through an action is "spoofing". The spoofing cannot be occurred without the connive man or getting help from local government for trans-border trading and bring to trade in border marketplace like not unduly exposed to the public eyes by applying a sell seasonal fruits and vegetables strategy which are allowed to sell for concealing. For the illegal forest products, they are hidid completely, but if someone wants to buy they still can contact the traders always.

Although the state government officers have defined the definitions of forest products with the laws by supranational organizations which influenced to nations, and affected the definitions of forest products to become prohibited commodities that are sold stealthily in the border marketplace at Nong Mon trade checkpoint by Lao traders, but if this is considered by Lao traders' aspect about selling barking deers, marmots, big lizards, palm civets, etc. that means just a livelihood for providing to their family, and it is tradition which has been inherited for long time. Before the trade checkpoint has established and Thailand participated in CITES, wildlife trade is a part of their life which has been inherited since ancestors, and it's very hard to avoid stopping these activities. Because so many people in rural still rely on forest products gathering for making a living. So forest products in Lao traders' aspect is defined as local border commodities.

By the different definitions between Lao traders and the state government officers, these lead to negotiate the power of each other. Lao traders negotiate by making a good relationship to officers, spoofing, or giving a backhander in order to negotiate for commercial benefits of trans-border forest products trading.

#### **4. Discussion and Conclusion**

As mention previously, it reflects that participation in CITES affected and change significantly to the definitions of forest product commodities. Even though the definition of "forest products" has been changed from traditional commodities to be defined as the new meaning as "prohibited commodities" which is illegal things by the laws of international or supranational organizations ruling national sate in order to regulate and manage the border areas.

But actually, the border areas are the areas where have the special identities involving the long relationships of kinship and the long countries neighborhood before the separated national boundaries. These special identities of the border like the local conditions cause the border to be flexible and indulgent the regulations. With the local conditions, these help Lao traders are able to negotiate many groups of government officers, can continue their trans-border trade activities, even they are looked as illegal things by state. These activities are accepted by communities because they realize an attach importance to a livelihood. On the word of this social phenomenon accords to an offer of Walker (1999) and Donnan and Wilson (1999) in the issue of trans-border trading control and management by state including to definitions and regulations with laws, but in the same time, people in border can perform as actors to define their own definitions of trading activities as well as negotiate and encounter for the purpose of continuing trans-border trade.

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19. The Australian National University.

**PART 2: URBAN AND REGIONAL  
DEVELOPMENT**



# EVALUATING THE QUALITY IMPROVEMENT OF PUBLIC ADMINISTRATION SERVICE OF NINH BINH PROVINCE, VIETNAM

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## **Abstract**

*Currently, Vietnamese government attaches great importance to public administrative services quality improvement. The main question for public services organization are: to what extent public administration services meet the needs of citizens and what it takes to improve the quality of public administrative services? Employing the marketing mix model, this study was conducted in Ninh Binh province to assess the quality of public administration services and explore the factors that affect the level of satisfaction for different marketing mix components in public service sector. Through the data collected in 2013 and 2018, the study provides an overview of public administrative service quality in Ninh Binh Province and identifies its improvement over the period of 5 years. The results of the linear regression analysis (based on data collected in 2018) show the effect of items on the satisfaction of citizens for each marketing-mix factor. Based on the results of the study, the authors suggest several solutions to improve the quality of public administrative services of Ninh Binh province.*

**Keywords:** public administration service, quality of public administration service, public service marketing, one-stop-shop (OSS), Ninh Binh, Vietnam

## **1. Introduction**

Within the framework of the research project "Marketing solutions to improve public administrative services quality in Ninh Binh Province" funded by Ninh Binh Province People's Committee, public administration services quality evaluation was carried out in 2013-2014 period. This research result had been published on Journal of Mekong Societies in 2016. In 5 recent years, Ninh Binh has always been promoting and applying various measures to improve the quality of public administration services such as

improving and simplifying administrative procedures; improving the operation of one-stop services (OSS); intensifying training, inspection, supervision and support the contingent of public servants; strengthening the coordination between administrative agencies in order to reduce wasted time; strictly control and abandon the unofficial costs; enhancing waiting room and lounge at service agencies; strengthening the consult and support quality for citizens as well as promoting the technology application in public service agencies... The question is whether these efforts could improve citizens' satisfaction on public administrative services and to further improve the quality of public administrative services, which factors should the marketing activities focus on? To answer these questions, this study was conducted to: (1) Assess the improvement of public administrative service quality in Ninh Binh; (2) Indicate the factors affecting public administrative services quality in order to appropriately design the marketing activities orientation.

Based on the marketing mix model (Kotler & Keller, 2014) and public service marketing theories (Lee and Phillip, 2007, Proter, 2007, Vu Tri Dung, 2014), the authors had developed and adapted the model of public service quality assessment as follows:



*Source: Nguyen Hoai Long & Pham Hong Hoa, 2016*

The factor "Product - The satisfaction level of the product of public administration service" contains 8 items, namely Trust; Trust and accuracy; Complying with regulations and commitments; Assuring of service; The operational of OSS; Transaction time; Accepting the recommendations and suggestions from customer; Receiving and processing of citizens' comments.

The factor "Price - The satisfaction level of price of public administration service" includes 6 items, namely Publicity and transparency concerning costs; Reasonable transaction fees; Convenience of payment; No incurred costs; Time to get results.

The factor "Place - The satisfaction level of accessing public administration service" includes 8 items, namely Convenient and accessible location of the agency providing administration services; Regular working time; Ability to access and exchange information through the hotline; Ability to exchange information via email, internet; Ability to access information of procedure via internet; Ability to access form and

document on the internet; Possibility to apply online and get the result; Ability to apply record and receive the result via post.

The factor "Promotion/communication - The satisfaction level of communication activity" includes 4 items, namely Diverse and convenient communication methods; Well – informed Citizens with process, procedure and record; Properly and warmly received comments; Well – processed and responded complaints.

The factor "People - The satisfaction level of public servants" includes 7 items, namely Public servants with clear badges and name plates; Public servants have good professional qualifications; Public servants are friendly helpful; Public servants comply with work schedule; Public servants implement the procedures flexibly; Public servants enthusiastically guide and advise citizens; Public servants create the trust.

The factor "Process - The satisfaction level of procedure process" includes 7 items, namely Record and procedures requested are reasonable; Form are designed scientifically; Transaction procedures are simple; Transaction sequence is conducted reasonably; Guidance for unsatisfactory record is well stated; Clear appointment for results; Simple procedures.

The factor "Physical evidence - The satisfaction level of Physical evidence" includes 6 items, namely Convenient parking; Proper waiting lounge; Clear guidance diagram; Good support equipment (sanitary facilities, water, fan...); Clear information desk; Qualified computer system and other supporting devices.

This research model has been employed in both the studies in 2013 and 2018.

## **2. Research methodology**

In 2013, we had conducted a qualitative study in order to develop elements and design the questionnaire. Details about this study has been presented in the Journal of Mekong societies, Vol 12, No1.

This quantitative studies has been carried out in 2013 and 2018. The research sample includes 700 citizens awaiting transactions in the agencies providing public administration services. In both research, data was collected from 700 respondents. The valid response of the study 2013 was 631 after the removal of nonresponse rate while it was 656 responses for the study 2018.

The collected data is entered and processed by SPSS version 22. The mean of each items is calculated to analysis the current situation of public administration services. Bootstrap with 95% reliability is run to check whether the results of the sample to infer the overall or not. The analysis of Covariance matrix and Correlation coefficient between items belonging to each factor of public administration services, with calculation of Cronbach alpha coefficient is used to evaluate the correlation among items and eliminate the non correlated items. After eliminating the non - correlated items, the regression analysis is used to investigate the impact level of items to the factor that it belongs to (7Ps).

### 3. Major findings

#### 3.1 Product factor

##### Level of satisfaction with the product of public administration service

No	Items	Mean		
		2013	2018	% change
1	Trust	3.78	3.65	-3.55%
2	Trust and accuracy	3.8	3.68	-3.18%
3	Complying with regulations and commitments	3.84	3.71	-3.32%
4	Assuring of service	3.84	3.66	-4.57%
5	The operational of OSS	4.16	3.90	-6.22%
6	Transaction times	3.45	3.48	0.91%
7	Accepting the recommendations and suggestions from customer	3.75	3.89	3.83%
8	Receipt and processing of proposals and reflection	3.78	3.51	-7.24%

Source: Data processing result of authors, 2018

In 2018, citizen's satisfaction of 6 over 8 factors of the public services was lower than that of 2013. Despite a marginal decline, it still indicates that the authorities' efforts have not met with people's desire for service quality. Two factors are considered as improvement including "Transaction time" and "Scheme for recommendations and suggestions from the citizens". They, however, are not significant change.

##### *Regression analysis of the factors affecting to the satisfaction with the product of public administration services*

- All the items have correlation with the product of public administration services.
- The items not consistent with the overall regression model: (1) C2.1 - Trust; (2) C2.2 - Trust and accuracy; (3) C2.7 – Scheme of recommendations and suggestions.
- Regression models:

**The satisfaction level of product factor of public administration services = -0.132 + 0.206\*C2.3 + 0.323\*C2.4 + 0.133\*C2.5 + 0.116\*C2.6 + 0.271\*C2.8**

(C2.3 - Complying with regulations and commitments; C2.4 - Assuring of service; C2.5 - The operation of OSS; C2.6 - Transaction time; C2.8 – Scheme for recommendations and suggestions)

##### **Conclusion and recommendation**

✓ The level of satisfaction of citizens with the public service delivery has not been improved, and many factors have been assessed to be in a downward trend compared to 2013. This requires authorities to make effort in meeting the needs of citizens on public service products and focusing on service efficiency improvement.

✓ In order to improve the satisfaction of citizens on the element of public services, attention should be paid to the following factors: Assuring of service; Receiving and processing of citizens' comments; Compiling with regulations and commitments

### 3.2 Price factor

#### Level of satisfaction with the price of public administration service

No	Items	Mean		
		2013	2018	% change
1	Publicity and transparency concerning costs	3.94	4.00	1.52%
2	Reasonable transaction fees	3.97	3.92	-1.15%
3	Full charge receipts	4.07	4.07	-0.05%
4	Convenience payment	4.04	3.97	-1.75%
5	No cost incurred	3.84	3.89	1.42%
6	Time spent to get result	3.86	3.69	-4.37%

Source: Data processing result of authors, 2018

The results of the study in 2018 show that citizens' satisfaction with items belonging to the public element of public service has not improved compared to 2013. Only 2/8 items are considered to be improved but the level of change is not significant.

#### *Regression analysis of the factors affecting to the satisfaction with the price of public administration services*

- All the items have correlation with the product of public administration services.
- All the items consistent with the overall regression model.
- Regression models:

**The satisfaction level of price factor of public administration services =  $-0.169 + 0.079 * C5.1 + 0.309 * C5.2 + 0.103 * C5.3 + 0.43 * C5.4 + 0.056 * C5.5 + 0.073 * C5.6$**

(C5.1- Publicity and transparency concerning costs; C5.2 - Reasonable transaction fees; C5.3 - Full charge receipts; C5.4 - Convenience payment; C5.5 - No cost incurred; C5.6 - Time spent to get result)

#### **Conclusion and recommendation**

✓ The level of satisfaction of citizens on the price of public administrative services has not improved compared to that of 2013. This requires the authorities to pay special attention to solutions for the individual cost including both finance (official and unofficial), time and energy.

✓ To enhance citizen satisfaction on the price of public services, special attention should be paid to both convenience of payment and the reasonable transaction fees;

### 3.3 Place factor

#### Level of satisfaction with accessing public administration service

No	Items	Mean		
		2013	2018	% change
1	The location of agency of providing administration services is convenient and easy to find	4.14	4.04	-2.48%
2	Working time by regulation	3.87	4.01	3.68%
3	Ability to access and exchange information through the hotline	3.42	3.75	9.74%
4	Ability to exchange information via email, internet	3.12	3.48	11.65%
5	Ability to access information of procedure via internet	3.24	4.02	24.08%
6	Ability to access form and document on the internet	3.29	4.03	22.38%
7	Possibility to apply online and get the result	2.91	3.58	22.95%
8	Ability to apply record and receive the result via post	2.47	3.66	48.34%

Source: Data processing result of authors, 2018

By 2018, the level of satisfaction on the accessibility of the administration service has significantly improved compared to 2013. Except for the minor change in two items: "convenient and accessible location of agency providing administration services" and "regular working time", all of the remaining items have significantly improved compared to 2013. Administrative efforts in facilitating citizens' access to public administrative services are very effective.

***Regression analysis of the factors affecting to the satisfaction with accessing the public administration services***

- The item "Ability to access information of procedure via internet" have no correlation with the accessing the public administration services.

- Items "Convenient and accessible location of agency providing public services", "Ability to exchange information via email, internet", "Ability to access form and document on the internet" not consistent with the overall regression model.

- Regression models:

**The satisfaction level of place factor of public administration services = -0.63 + 0.3\*C4.2 + 0.308\*C4.3 + 0.205\*C4.7 + 0.214\*C4.8**

(C4.2 - Regular working time; C4.3 - Ability to access and exchange information through the hotline; C4.7 - Possibility to apply online and get the result; C4.8 - Ability to apply record and receive the result via post)

**Conclusion and recommendation**

- ✓ Overall, the level of satisfaction on accessing public administration service has been greatly improved. The two items "Convenient and accessible location of agency providing administration services" và "regular working time" need more improvement in the future.

- ✓ To enhance to satisfaction on accessing administration service, more attention should be paid to Regular working time; Ability to access and exchange information through the hotline; Possibility to apply online and get the result; Ability to apply record and receive the result via post.

**3.4 Promotion factor**

**Level of satisfaction with Communication of public administration service**

No	Items	Mean		
		2013	2018	% change
1	Communication methods are Diverse and convenient	3.29	3.54	7.71%
2	Citizens are provided information about process, procedure and record	3.73	3.67	-1.53%
3	Comments are accepted respectfully	3.44	3.50	1.74%
4	Complaints are settled simply and reasonably	3.45	3.52	2.07%

*Source: Data processing result of authors, 2018*

In 2018, only item "Diverse and convenient communication methods" shows a slight improvement while the other three remain stable. It reflects the weak and ineffective efforts in improving the communication activities in providing public services.

***Regression analysis of the factors affecting to the satisfaction with promotion of public administration services***

- All the items have correlation with the promotion of public administration services.
- All the items consistent with the overall regression model.
- Regression models:

**The satisfaction level with promotion of public administration services = 0.137 + 0.1\*C8.1 + 0.414\*C8.2 + 0.27\*C8.3 + 0.191\*C8.4**

(C8.1 - Communication methods are Diverse and convenient; C8.2 - Citizens are provided information about process, procedure and record; C8.3 - Comments are accepted respectfully; C8.4 - Complaints are settled simply and reasonably)

**Conclusion and recommendation**

✓ Overall, the level of satisfaction on the communication of public administration service has not improved. It, therefore, requires a greater investment in communication activities for the public services.

✓ To improve the satisfaction on public administration service, some factors should be taken into account, including Well - informed citizens và Proper scheme for suggestion and recommendation.

**3.5 Public servant factor**

**Level of satisfaction with public servant of public administration service**

No	Items	Mean		
		2013	2018	% change
1	Public servants with clear badges and name plates	3.23	4.06	25.76%
2	Public servants have good professional qualifications	3.24	3.72	14.69%
3	Public servants are friendly helpful	3.13	3.70	18.33%
4	Public servants comply with work schedule	3.14	3.86	22.84%
5	Public servants implement the procedures flexibly	2.97	3.65	23.04%
6	Public servants enthusiastically guide and advise citizens	3.08	3.66	18.72%
7	Public servants create the trust	3.15	3.67	16.60%

*Source: Data processing result of authors, 2018*

All items of Public servant show a significant changes compared to 2013. It implies the efforts in improving the public servants in Ninh Binh province have made great impacts.

***Regression analysis of the factors affecting to the satisfaction with public servant of public administration services***

- All the items have correlation with public servant of public administration services.
- Items "Public servants with clear badges and name plates", "Public servants are friendly helpful", "Public servants comply with work schedule", "Public servants implement the procedures flexibly" not consistent with the overall regression model.

- Regression models:

**The satisfaction level with public servant of public administration services =  $0.409 + 0.203 * C6.2 + 0.356 * C6.6 + 0.336 * C6.7$**

(C6.2 - Public servants have good professional qualifications; C6.6 - Public servants enthusiastically guide and advise citizens; C6.7 - Public servants create the trust)

### **Conclusion and recommendation**

✓ Overall, the level of satisfaction on public servant of public administration service has been significantly improved. The implication is to maintain the policies and practices to encourage the public servants, especially the group at the grass - root level.

✓ To improve the satisfaction on public servant of public administration service, three items should be considered Public servants have good professional qualifications; Public servants enthusiastically guide and advise citizens; Public servants create the trust

### **3.6 Process factor**

#### **Level of satisfaction with process and procedures of public administration service**

No	Items	Mean		
		2013	2018	% change
1	Record and procedures requested are reasonable	3.88	3.84	-1.02%
2	Form are designed scientifically	3.96	3.91	-1.31%
3	Transaction procedures are simple	3.84	3.67	-4.30%
4	Transaction sequence is conducted reasonably	3.68	3.64	-1.14%
5	Guidance activities of completing the unsatisfactory record	3.81	3.78	-0.81%
6	Clear appointing to get results	4.05	4.01	-0.93%
7	Simplifying procedures	4	3.85	-3.70%

*Source: Data processing result of authors, 2018*

The results on process assessment of 2018 are lower than that of 2013. Despite a small discrepancy, it reflects that the process improvement has made no progress and requires more efforts from the authorities in improving the administration procedures.

#### ***Regression analysis of the factors affecting to the satisfaction with process and procedures of public administration services***

- All the items have correlation with the process and procedures of public administration services.

- Items "Record and procedures requested are reasonable" and " Transaction procedures are simple", not consistent with the overall regression model.

- Regression models:

**The satisfaction level with process and procedures of public administration services =  $0.021 + 0.215 * C3.2 + 0.333 * C3.4 + 0.105 * C3.5 + 0.067 * C3.6 + 0.256 * C3.7$**

(C3.2 - Form are designed scientifically; C3.4 - Transaction sequence is conducted reasonably; C3.5 - Guidance activities of completing the unsatisfactory record; C3.6 - Clear appointing to get results; C3.7 - Simplifying procedures)

## Conclusion and recommendation

✓ Overall, the level of satisfaction with process and procedures of public administration service has no improvement. Thus, the authorities should revise and improve the policies and procedures to meet the citizens' needs.

✓ To improve the satisfaction on process and procedures of public administration service, three factors should be considered Form are designed scientifically; Transaction sequence is conducted reasonably; Simplifying procedures.

### 3.7 Physical evidence factor

#### Level of satisfaction with physical evidence of public administration service

No	Items	Mean		
		2013	2018	% change
1	<u>Convenient</u> parking	4.31	3.98	-7.76%
2	Place to wait the transaction	4.1	3.99	-2.59%
3	Clear <u>guidance</u> diagram	4.03	4.02	-0.29%
4	Good support equipment (sanitary, water, fan...)	4	3.86	-3.40%
5	Clear guidance tables	3.87	3.99	3.20%
6	Quality of computer and other supporting devices	3.96	3.75	-5.42%

Source: Data processing result of authors, 2018

The items of physical evidence of the public administration service of 2018 has slightly changed compared to 2013. With the exception of the "Clear guidance tables" item that has changed positively, the rest have changed in the negative direction. In fact, over the past five years, Ninh Binh province has not paid much attention to infrastructure investment for public administrative service. Citizen assessment results also reflect this fact.

#### *Regression analysis of the factors affecting to the satisfaction with physical evidence of public administration services*

- All the items have correlation with the physical evidence of public administration services.

- Items " Clear guidance diagram" & "Convenient parking" not consistent with the overall regression model.

Regression models:

**The satisfaction level with physical evidence of public administration services =  $0.174 + 0.273 * C7.2 + 0.144 * C7.4 + 0.315 * C7.5 + 0.219 * C7.6$**

(C7.2 - Place to wait the transaction; C7.4 - Good support equipment (sanitary, water, fan...);

C7.5 - Clear guidance tables; C7.6 - Quality of computer and other supporting devices)

## Conclusion and recommendation

✓ In general, the level of satisfaction with physical evidence of public administration services has changed slightly but on the downward trend. It demonstrates

that the physical environment of public administrative services does not meet the increasing demand of citizens. Over the period, Ninh Binh did not pay attention to physical evidence, but in the future, the authorities need to invest in the facilities of the public administrative service agency.

✓ To enhance citizen satisfaction in the physical administration of public administration services, attention should be paid to: Clear information desks; Waiting room and lounge; qualified computer system and other supporting devices.

#### **4. Discussion and Conclusion**

The study used the 7Ps approach to assess the quality of public administrative services in Ninh Binh province. In general, the level of satisfaction of Ninh Binh citizens towards these factors of public administration service is considered as acceptable. Findings from the 2013 study indicated that three factors were highly evaluated compared to others: price, process and procedure, physical evidence of public administration service while the poor factor was the access to the public administration service (Nguyen Hoai Long & Pham Hong Hoa, 2016). The major findings of the study in 2018 showed that all Ps factors of the public administration service were rated as above average. The two factors that significantly improved compared to 2013 are accessing public administration service and public servant, whereas other factors showed a slight change either upward or downward. From the data collected in 2018, the study also showed the effects on each factor of marketing mix of public administration services in Ninh Binh province through regression analysis. From the major findings of the study, the authors also proposed some implications to improve the quality of public administrative services in Ninh Binh province.

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# RURAL POVERTY IN INDONESIA AND ISLAMIC ECONOMIC AS A SUSTAINABLE SOLUTION

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## **Abstract**

*Based on the preliminary research about household poverty in rural area of West Kalimantan in 2016, we found that working days, age and loan gave significant effect to the rural poverty. Therefore, the aim of this paper is to examine the solution of reducing poverty rate in the rural area through Islamic economic concept. In Islamic economic approach, poverty is not merely caused by material aspect but also moral/ spiritual aspect. Thus, this explanatory research used elaboration of Islamic Economic theory on both aspects to improve well-being in rural society. The Ibnu Khaldun's dimension of poverty and the axiomatic approach are used to modify the sustainable livelihood framework into Islamic economic sustainable livelihood framework. The paper found that to reduce the poverty rate in rural area, development of man and his moral aspect should be emphasized and the establishment of Islamic Microfinance as a free interest institution in rural area must be developed.*

**Keywords:** Islamic Economics, Rural Development, Sustainable Development

## **1. Introduction**

Poverty also divided based on the places, such as Rural Poverty and Urban Poverty. The characteristics of poverty in Rural area and Urban area have some differences. Perhaps the most valid generalizations about the poor are that they are disproportionately located in rural areas, that they are primarily engaged in agricultural and associated activities, that they are more likely to be women and children than adult males, and that they are often concentrated among minority ethnic groups and indigenous peoples. Data from a broad cross section of developing nations support these generalizations. We find, for example, that about two-thirds of the very poor scratch out their livelihood from subsistence agriculture either as small farmers or as low-paid farmworkers. Some of the remaining

one-third are also located in rural areas but engaged in petty services, and others are located on the fringes and in marginal areas of urban centers, where they engage in various forms of self-employment such as street hawking, trading, petty services, and small-scale commerce.

In 2015, the number of poverty in rural area around 17,893 million and in urban area around 10,619 million. In total, the number of poverty in Indonesia in 2015 had increased compared the total number of poverty in 2014 around 27,727 million (Statistics Indonesia, 2016). Based on the data form Statistics Indonesia, Poverty in rural area of Indonesia is still higher than urban area of Indonesia. In rural areas, agriculture contributed to almost half of rural household income (wages and farming income). The International Fund for Agriculture Development (IFAD) found that the poorest people in rural areas are tend to be labor farmer who working on other people land, and smallholders on small plots of land less than 0.5 hectares.

The focus of this research is rural poverty in small villages at West Kalimantan called, Senujuh village. Poverty in West Kalimantan province were spreading in urban and rural area. In September 2015 until March 2016 the percentage of poor in rural area still bigger such as 303,060 people than in urban area such as 78,290 people. In March 2016, poverty line of West Kalimantan was increased to 347,880 rupiahs per capita per month (26.26 USD). Poverty line in West Kalimantan is the lowest poverty line compared with 4 others province in Kalimantan. While, in the percentage of poor people, West Kalimantan was the highest percentage with 381,350 people (7.87 percent) (Indonesia Statistics West Kalimantan, 2016).

Poverty differences accross the understanding of poverty definition, how it was happened, factors of poverty and how to do poverty alleviation appropriately. In economic terms, poverty is defined as a situation when a family's income fails to meet a federally established threshold that vary across countries. Typically it is measured with respect to families and not the individual, and is adjusted for the number of persons in a family. While based on Indonesia Law No. 24 in 2004, poverty was socio-economic condition of a person or group of people who do not fulfill their basic rights to maintain and develop dignified life. Basic needs are the rights of a person or group people includes the food, health, education, employment, housing, water, land, natural resources, environment, security from treatment or threats of violence, and the right to participate in implementation of social and political life. Individual characteristics include education, family size, working days, age, and loan have been studied by many scholar as the factors influencing household income (poor level). Educational level has a positive effect on off arm participation (Rozelle, Brandt, Li, & Huang, 2002)

### **Sustainable Development**

Sustainable Development Goals (SDGs) was declared by United Nations as demonstration of the scale and ambition of new universal Agenda. In 25 September 2015, leaders from 193 countries of the world came together and face the future by arranging a set of 17 goals stimulate action of a future just 15 years off. The agenda focus on critical importance areas for humanity and the planet (United Nations, 2015) . This paper concerns

at one of the greatest global challenge of SDG's agenda to end poverty in all its forms everywhere by considering material and spiritual aspects.

### **Islamic Economics**

Islamic economic system is a part of Muslims' life to implement the teachings of Islam in economic activities. Alignment and balance between the horizontal and vertical aspects can guarantee the human's lives and the universe to walk in harmony and continuous prosperity in this world and the hereafter. By applying the system, one may automatically fit unanswerable questions in economy as well as in human life. The absence of Shari'ah management and its application in economic system might have indirect link with poverty at almost all developing countries since long time ago. Perhaps, it is because the *riba* or interest based commercial dealings caused non graduation from poverty, debt trap, asymmetric information and economic viability of the project (Ahmed, 2002). While conventional approach on poverty left the importance of committing to moral/spiritual, which resulted in bringing the severe poverty, Islamic approach has more attention on that aspect by renoun the spirit of helping microenterprises through micro financing.

This paper explores the preliminary research about factors which gave significant effect to the household poverty in the rural area of West Kalimantan, Indonesia in 2016 and examine Islamic strategy for that poverty alleviation through human oriented financing. The sustainability aspect also occupies an important place in this formulation. The rest of paper proceeds as follows: Section one will discuss about sustainable development goals, poverty concept, classification and measurement. Section two will be discuss about the methodology, sampling and research area, then continued by field survey results. Section four briefly discusses Ibn khaldun's dimension and axiomatic approach of Islamic Economic to reduce the rural poverty in Senujuh village Indonesia. Finally section five will concludes the paper and some recommendations.

### **2. Method**

The area of study was in Senujuh Village, West Kalimantan, Indonesia. There were 352 household in Senujuh village, we used 80 poor household to be sample in this study based on the Slovin's Formula. Stratified random sampling was applied to find the sample size.

$$n = \frac{N}{1 + N (e)^2}$$
$$n = \frac{352}{1 + 352 (0.1)^2}$$
$$n = 77.8$$

The methodology which employed in this explanatory research were descriptive statistics and analysis of literatures. The Ibn Khaldun's dimension and Islamic Axiomatic approach were used to develop the policy to reduce the rural poverty in Senujuh village.

### **3. Results**

In this study, all of the respondents were the poor people which has listed by the government. From 105 poor household which listed, we used 80 poor household to be

sample in this study. In Senujuh Village, the area of rice farm is around 125 hectares, plantation is around 260 hectares and others land area around 1600 hectares. The main commodity based on the area of plantation in this village are palm tree and rubber.

Senujuh Village is located along the left side of Small Sambas River, Sambas Regency, West Kalimantan Province. The ethnics in this village are mainly Malay and Javanese. The distance from Pontianak, the capital city of West Kalimantan is about 258 kilometers. Most of the poor people in Senujuh village work as farmer, labor in palm tree factory and rubber factory, mechanic, teacher and small retailer. The income of labor was derived from the number of working days and the income of farmers was derived from the amount of harvest income in one year then divided into 12 months. The result of field surveys show the condition of household poverty in Senujuh Village, Sambas Regency, West Kalimantan Province. Based on the monthly income of head household, can be categorized into 3 poverty category, such as extreme poverty, moderate poverty and nearly poor based on the World Bank poverty line and Indonesia Statistics poverty line. Based on the table 1 (Categories of Poverty in Senujuh Village), according to World Bank shows that 42.5% household lived in moderate poverty, 37.5% household lived as an extreme poverty and 20% household were in nearly poor condition. While, according to Indonesia statistics shows that 85% household lived in nearly poor condition and only 15% household that included into extreme poverty.

**Table 1. Categories of Poverty in Senujuh Village**

Category	Poverty Line (World Bank)		Poverty Line (Indonesia Statistics)	
	Frequency	Percent	Frequency	Percent
Extreme Poverty	30	37.5	12	15
Moderate Poverty	34	42.5	46	57.5
Nearly Poor	16	20	22	27.55
Total	80	100	80	100

*Source: Field Survey*

Based on the field survey, there are seven job categories of poor people in Senujuh village. Head household that earns income under 26.26 USD were consist of 7 elderly which is not do full time job and 6 farmer who work for other land owner. Most of the head household earns income in between 26.26 USD until 52.52 USD. There are 30 farmers who have income in this range, all of them have farm land. In this range of income also consists of 6 head household who works in rubber factory, 4 head household works in palm tree factory, 2 head of household open small workshop to repair motorcycle and bicycle, 1 head of household work as temporary teacher in elementary school and 1 head of household who did self-employment.

The result of field survey found that 57.5% of the head of household had income between 26.26 USD - 52.52 USD per month which categorized as moderate poverty, 27.5% had income more than 52.52 USD which categorized as nearly poor, while 15%

categorized as very poor which only had income below 26.26 USD per month. The monthly income in this study is derived from the cash money from wage of labor and teacher, exchange rate of harvest income, income from self-employment and subsidy from government of head household per month.

### **Education Level**

In this research, we found that human resources in Senujuh village were lack of education. More than 50% head of household in Senujuh village were not well educated. 45% head of household not passed elementary school and 43.7% were had elementary school degree or 6 years of education, 8.8% have junior high school background (9 years study) and only 2.5% which have senior high school background (12 years study). Based on the regression analysis, education have positive impact on the income. It means the increasing of education level will increase the income of society that will lead the reducing of poverty rate. From the survey result at Senujuh village, we can see that 91.7% household which is categorized as extreme poverty did not pass elementary school and 8.3% head household only had elementary school level. Household which categorized as moderate poverty, 50% of head household were not pass elementary school, 45.7% household only had elementary school level and 4.3% head household had junior high school level. Furthermore, household which is categorized as nearly poor condition 59.1% had elementary school level, then 22.7% head household had junior high school level, 9.1% head household not pass elementary school and only 9.1% head household which categorized as nearly poor have senior high school level.

### **Working Days**

Based on the field survey, 41.3% head of household works 11 - 15 days per month. Head of household whose works in this category mostly work as a labor in palm tree production. They only can work maximum 15 days per month. It was the regulation from the company for the labor. They will go since 4 am early morning by walk together from Senujuh Village to the Palm Tree plantation and arrive around 6.30 am. They will come back around 2 pm and arrive home around 4 pm. The second biggest percentage of working days in this study was 32.5% of head of household worked for 16 - 20 days per month. Mostly, head of household who had working days in this category worked as labor in rubber plantation and also farmer who did an extra other jobs. Then, number of working days below 5 days, 5 - 10 days and more than 20 days had the same percentage which was 8.8% of head of household. In Senujuh village, 91.7% household which is categorized as extreme poverty had working days below 10 days per month and 8.3% extreme poverty household had 10 until 20 working days per month. Household which categorized as moderate poverty 91.3% of head household had 10 until 20 working days per month, 6.5% household had below 10 days of working and only 2.2% household which had working days 20 until 30 days per month. Furthermore, household which is categorized as nearly poor condition 95.5%, the head of household had working days 10 until 20 days per month and only 4.5% head of household had 20 until 30 days of working in one month.

### **Family size**

In Senujuh village, 83.3% household which is categorized as extreme poverty had family member below 4 members in one household and 16.7% household had 4 until 6 family members. Household which categorized as moderate poverty 47.9% of household had 4 until 6 family members, 39.1% household had below 4 family members and only 13% household had more than 6 family members in one household. Furthermore, household which is categorized as nearly poor condition 50% had family member below 4 members and another 50% nearly poor household had 4 until 6 family members.

### **Age**

Based on the survey results, the age of head of household where categorized into groups. The categorization showed that 38.8% head of household were in between 30 - 40 years old. Then, 23.7% head of household were in between 51 - 60 years old, 17.5% in between 41- 50 years old, 13.8% in between 61 - 70 years old. While, the youngest head of household which under 30 years old only 3.7% and another 2.5% head of household in Senujuh village were elderly people which more than 70 years old. In Senujuh village, 100% household which is categorized as extreme poverty have head of household in between 50 until 75 years old. There are 52.2% household categorized as moderate poverty who have head of household in between 30 until 50 years old, 43.5% moderate poverty household have head household in between 50 until 75 years old and the rest 4.3% household have head of household in below 30 years old. Furthermore, there 95.5% nearly poor household in Senujuh village that have head of household in between 30 until 50 years old and only 4.5% nearly poor household that have young head household which is below 30 years old.

### **Loan Installment**

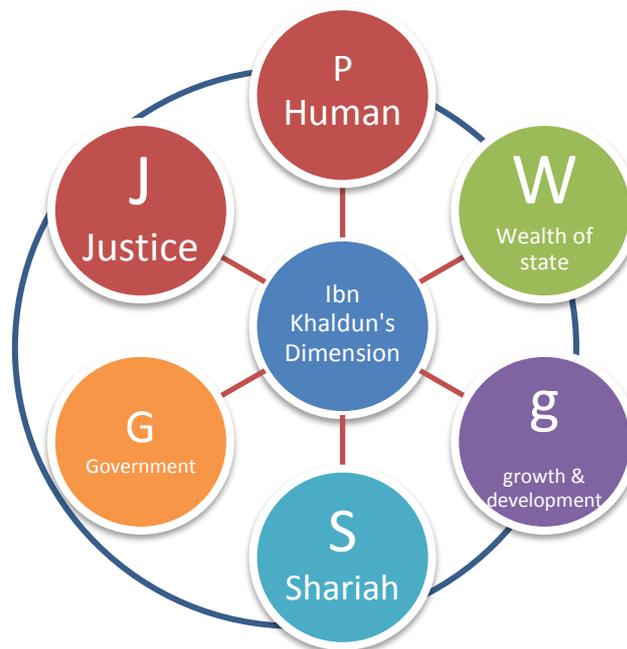
According to the survey results, it shown that 31.3% household in Senujuh village did not have any loan. They did not took any loan because of they did not have capability to pay back the loan. Another reason is the people did not need any loan because of better off condition. 25% household had loan below 5 USD, it used to spend on consumption and borrowed from family or neighbor. Then, 21.3% household had loan in range 5 - 10 USD. Mostly, they took this amount of loan for daily needs and unconditional needs. 8.7% household had loan in between 20 - 25 USD, they used the money for make small store or constructed their house. 5% household had loan in between 10 - 15 USD for their daily needs or education needs. While, household which had loan in between 15 - 20 USD were only 3.7% and loan in between 25 - 30 USD and more than 30 USD were only same 2.5% of household. In Senujuh village, 91.7% household which is categorized as extreme poverty do not had any loan installment and 8.3% extreme poverty household had loan installment in between 1 USD until 15 USD per month. There are 63% household categorized as moderate poverty who had loan installment in between 1 USD until 15 USD per month, 30.4% moderate poverty household had no loan installment per month and only 6.5% of moderate poverty household who had loan installment in between 15 USD until 30 USD per month.. Furthermore, there 50% nearly poor household in Senujuh village who

had loan installment in between 15 USD until 30 USD per month and another 50% nearly poor household had loan installment in between 1 USD until 15 USD per month.

#### 4. Discussion and Conclusion

##### Ibnu Khaldun's Dimension

The analysis of Ibn Khaldun's theory of development were multidiscipline and dynamic. The dimension covers all of important aspects in socio-economic and politic, such as beliefs and rules of behavior or the *Shariah* (S), Human (P), Wealth of State (W), Development (g), Government or Sovereign (G) and Justice (j). All of the aspects are in a circular and inter-influence. In this dimension, there will no *ceteris paribus* clause in the long term because none of the aspects is assumed to remain constant. Each aspect acts as the trigger for another aspect.



**Figure 1: Ibn Khaldun's Dimension**

The main aspect of Ibn Khaldun's dimension is the human being (P) because the rise of fall of welfare in a country is closely depend on the well-being of the society. The dependent not just on economic aspect but also the moral aspect, institutional, psychological, political and demographic factors through a process for long period of history (Chapra, 2006). According to the descriptive statistics above, we can develop model to reduce poverty based on the Ibn Khaldun's dimension. This model is macroeconomic point of view that can be applied by the rural government. In the human aspect (P), more than half population of Senujuh village were not passed basic education or elementary school. In order to solve this problem, government should encourage rural society to gain high education by providing good quality of education infrastructure from basic education until higher education which located near the village. Government also need to create vocational training for the society to improve their skills. Then, local government should provide scholarship for rural students.

In Senujuh village, loan give the positive impact to income generating. It means, when household increase the productive loan it will increase their income. Unfortunately, not all household were capable to access the financial service to get financial capital. Most of them were not eligible to get loan from financial institution. In Ibn Khaldun's dimension, there is one aspect called Wealth of State (W). According to Chapra (2006), wealth of state provides the capital or resources that are needed for ensuring development and welfare. The government should allocate financial capital that can be accessed by rural household in Senujuh village. Islamic economics propose a free interest concept for the Islamic microfinance institution. Islamic microfinance is to facilitate and distribute equality income from the rich to the poor, in order to providing financial capital for the poor to generate income and create employment (Usman & Tasmin, 2016). A free interest means that household will not burdened for extra charge when they repay the loan. There are 3 activities of Islamic Microfinance such as micro credit to give loan and financing, micro saving to save money and investment, and the third is micro insurance to give assurance for the member of Islamic microfinance. The establishment of Islamic Microfinance in Senujuh village is one of the solution to increase the household income by providing financial capital and encourage people to do saving and investment.

Two variables that have negative impact on income of household in Senujuh villages were age and family size. According to the preliminary research by Darsono and Donkwa (2016), age negatively affects income of poor household with an influence coefficient of -0.585, it means the increasing of 1 year of age will decrease of income by 0.585 USD per month. It happens because of most people in Senujuh village work as farmer and labour who needs strong physical and high effort. While, the increasing of age will also decrease the strong physical condition. So, it gave negative impact to their income. In growth & development (g) aspect of Ibn Khaldun's dimension, the solution to make age variable become low impact is to make rural society grow up not only in physical condition but also grow up in intellectual and trained human resources to ensure the sustainable well-being and true happiness of life. Local government should provide training to the young generation through advances technology in order to compete in working industry, empower the adults and women by encourage them to create one product that have value in the market. Family size was give negative impact on average income with coefficient of -1.207, means that each increase of 1 family member will decrease the average income by 1.207 USD per month. Indonesian society have paradigm that having more child will give more wealth, this paradigm can be right or wrong depend on how the parents manage and taking care their family. In this case of Senujuh village, one household consist of 4-5 family members which means they have 2-3 kids to raise up.

Furthermore, another 3 aspects of Ibn Khaldun's dimension such as Government, Shariah and Justice need to run together in order to create good governance with shariah compliance and implemented fairly and impartially. The Shariah can only give rules of society behavior, it cannot play the role by itself. It is responsibility of government authority (G) in creating and managing the defense and maintenance of law and order, to

ensure justice for all of the society (j), fulfillment of contracts, fulfillment of needs and compliance with the rule of behavior (S).

### **Approach to Improve Human Ethic and Morality of Rural Society**

The axiomatic approach in this paper is to give solution to reduce poverty through Islamic microeconomic point of view which more focus on the human ethic and morality. According to Sirageldin (2000), these four axioms, taken together, lead to a universal ethical system that implies that policies should not lead to dependency, limit opportunities that develop capabilities to the few, or reduce individual responsibilities to take action. The axiomatic approach is based on four basic aspects of the Islamic ethical system:

1. Unity (Tauhid), it is indicates the vertical dimension of the individual ethical system. For example, each person in the society have a good relations with their god, will lead to belief that every god creation big or small has been created for a purpose. Tauhid or unity principle will guides the society to live in purpose with good moral and ethical to have relations with other people and environment.

2. Equilibrium, this axiom indicates the horizontal dimension of the equality of freedom in life. For example, rural society can do an appropriate balance between the needs of present and future, so they can generating income while do saving and investment for the next generations.

3. Free Will, this axiom provides the individual freedom to choose their own path with the careful intellection to “interpret-reinterpret that freedom with specific contexts and to suit the needs of changing times” (Naqvi, 1994). Rural household in Senujuh village has freedom to choose their own path, they need to have more effort and good will to change their own life. Government cannot change their condition if there is no willingness from the society to improve their living condition.

4. Responsibility, this aspect indicates that individuals and society need to responsible in conserving public good, public policy and social livelihood. In this aspect, rural society need to have big responsibility to taking care their public asset or public good such as road, school, health care and etc. Although government keep maintain the public good, if there is no big responsibility from the society, it will always cause detriment for society itself.

These four axioms, applied together in rural society of Senujuh village lead to a universal ethical system that implies that policies must not lead to dependency, limit the opportunities or reduce individual responsibilities to take action. Policies should magnify the motivation of society to seek knowledge, gain productivity and extend the transparency in government. When all of the four basic tenants of individual moral and ethical are well practice in rural society of Senujuh village, the solution for reduce the poverty rate and improve well-being are easy to implemented and create the significant result.

### **Conclusion**

In this paper, we focused on the socio economic condition of rural poor in Senujuh village, West Kalimantan, Indonesia. We found the factors that affect poverty in rural household and develop a combination model to reduce poverty in this village based on the

Islamic economics approach. There are two main approach to reduce poverty in this paper. First is in macro point of view which based on the Ibn Khaldun's dimension. In this approach, for the Human Resources aspect (P) we suggest that government should provide better higher education program and infrastructure near the village, provide vocational training and scholarship for rural society. In Wealth of State (W), government or society can establish Islamic microfinance institution nearby the village to support the economic cycle and create equality. Then, age and family size that gave negative impact also need to be solved by improve the education and skills of society, empowerment of women and encourage them to have small family size but with good quality of life and happiness. The second approach is micro point of view which based on the improvement of individual moral and ethical through four Islamic axiomatic approach. This four basic Islamic approach must be absorbed and applied by the rural society in their life as their commitment to reduce poverty and improve the living condition. Those four basic components such as Unity, Equilibrium, Free will and Responsibility. Furthermore, both of concepts must be applied and run together in the society to achieve the sustainable solution in reducing poverty.

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# THE IMPACT OF THE URBANIZATION OF RURAL AREAS OF THAILAND: STUDY OF THE COMMUNITY AROUND ROI ET RAJABHAT UNIVERSITY, THAILAND

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## **Abstract**

*This research aims to explain the impact of urbanization in the rural areas of Thailand: the study of the community around Roi Et Rajabhat University, Thailand, includes 1) Education: this area has higher education institutions. 2) Population has increased rapidly: lifestyle has changed from a 'simple life' to become a 'modern life'. 3) City lifestyle: the villagers send their children to study abroad. 4) Comfortable lifestyle: utilities established in the community. 5) The well-being of the villagers: they have more career options. 6) Religious: the temple has been transformed from a place of reconciliation to be a place to depend on minding the elderly. 7) Community Relations: Lack of space to communicate. 8) Environment and social issues: the population in the area is growing and this creates more problems. 9) Social mobility: in both career and social status.*

**Keywords:** *urbanization, impact of the urbanization, Roi Et Rajabhat University*

## **1. Introduction**

Roi Et Rajabhat University is an education institution in Thailand's northeastern region that needs to develop human resources in order to support trade and investment, and to be a gateway to neighboring countries. These neighbors are the CLMV countries (Cambodia, Lao PDR, Myanmar, and Vietnam). The university was established in 1997. The establishment of Roi Et Rajabhat University is aimed to develop the economic prosperity of the area. The 8th National Education Development Plan made a great contribution to the establishment of the university. However, in the fiscal year 1997, the Rajabhat Institute Council of the Ministry of Education received a budget for the establishment of five additional Rajabhat institutes. A suitable province must be able to provide not less than 1,265 acres of land for the establishment by the Ministry of Education. Roi Et was ready and set up land to establish a higher education institution.

Moreover, Roi Et province has a large population and there should be provision to provide higher education to about 1 million people. There are at least 2,500 students graduating from high school each year. (Rajabhat Institute Council Ministry of Education, 1995)

When Roi Et Rajabhat University was opened in 2000, the surrounding community was upgraded to adopt a more urban context. Consequently, the researcher wanted to study the impact of urbanization on the community after the establishment of Roi Et Rajabhat University.

### **Objectives of Research**

To study the impact of urbanization of rural areas in Thailand: a study of the community around Roi Et Rajabhat University, Thailand.

### **Theory**

#### **Regionalism**

#### **History of regionalism**

Regionalism has been around since the 19<sup>th</sup> century, and it began to gather pace after the Cold War ended in the 1990s. Globalization has greatly contributed to regional integration and the emergence of regionalism. Furthermore, negotiations within the framework of the International Trade Organization may not gain results from most of the member countries, leading to the conclusion of bilateral trade negotiations and stimulating regional integration in order to negotiate trade deals with other countries.

However, regional integration means that member states must defer some sovereignty in order to enter into the regional integration. (Ministry of Foreign Affairs, 2007) Regionalism is a political process which is a co-operated and coordinated policy for moving countries in the same direction (Mansfield and Solingea, 2010). It can be concluded that countries in the same region, with the same historical background, perhaps being neighbors, can easily assimilate into regional integration.

The regional concept can be divided into time periods as follows: Old regionalism, influenced by the world system during the 1950s-1970s, such as the concept of liberalism in developing countries being adopted after socialism, and the change to multilateral from bilateral. That globalization and interdependence have influenced upon the region can be explained as follows: 1) Cold War cooperation was in support of their own alliances. 2) Old cooperation is often driven by external factors, such as the influence of a superpower, while new cooperation is mostly due to internal factors or the needs of the countries in the region. 3) In terms of economics, old cooperation protects and preserves a country's industry within the group. New cooperation is more interdependent and more open. 4) Older cooperation may be more specific but new partnerships will be more open.

New regionalism began in the 1980s; it was strongly influenced by the spread of globalization and the liberalization of economies. (Hettne and Söderbaum, 2006) It can be said that globalization, particularly in the fields of technology, finance, and production, has developed new international competition. When the Cold War ended, the world entered

into an age of new liberalism and economic development. The political systems in developing countries have led to 'the region' playing a more important role, while 'old regionalism' has taken a reduced role because it focuses exclusively on alliance and security issues. New regionalism is focused on the importance of state or government institutions that have the power to make decisions, particularly regarding the areas of trade and security. The policies tend to emphasize on the import and development of industries as being key to the development of the state. Regarding the economy, the protection and preservation of the industries of the country, within the group, are paramount and this leads to specific cooperation. New regionalism also requires the participation of many non-state actors who have influence in the market, leading to reduced blocking and more openness within the membership. One country may belong to several groups which emphasize on export and trade liberalization, focusing on the global market, trade investment, and economic growth (Hettne and Söderbaum, 2006).

New regionalism contains a variety of dimensions that may include; culture, security, political system, and economic policy, along with the complexity of dealing with the multiple levels of the global system. The relationships within a region may be based on, and include, state, national, ethnic and regional links. New regional co-operation is driven by the needs of countries or a region, because they are aware that they cannot handle new problems and challenges by themselves (Hettne and Söderbaum, 1998).

The formation of a region is based on its regional integration. Integration is an important marketing power for driving countries or regions with unprofitable industries to be able to develop stronger marketing positions. In addition, regional integration also drives growth; trade and industry will develop the specialized expertise needed to deal with the competition that comes with liberalization. Regional integration is very beneficial, for example, it contributes to a stable regional economy, and creates a good understanding between the participants, bringing peace to the region. It also provides the capacity to counterbalance powers which may push the integrated region to become a global actor with a new regional identity, while spreading the democratization of the region (Slocum and Langenhove 2003).

## **2. Method**

The researcher used qualitative research. Data collection was conducted through in-depth interviews with 7 sample subjects. Those selected were: an abbot, an executive of Roi Et Rajabhat University, a university official, an owner of a private dormitory, a sales staff member in the store of Roi Et Rajabhat University, an owner of a food shop, and the owner of the bazaar. The collection period was from November 26, 2015 to June 20, 2017.

## **3. Results**

Community Development in the surrounding area of Roi Et Rajabhat University. This is the community around Roi Et Rajabhat University, Tambon Tha Muang and Tambon Koh Kaew, Roi Et. The area is generally agricultural and the farmers may have two rice crops, depending on the amount of rainfall. There are 14 villages with 2,535

households. Currently, there are a total of 9,370 people, (Koh Kaew municipality, 2016). In Tha Muang district with population 2,416 men, 2,257 women, with 1,103 households (Tha Muang district, 2017)

*"... Before the establishment of Roi Et Rajabhat University in 1997, there had been a simple life and simple family management..."* (Deputy Chief Administrator of the Sub-district Administrative Organization Council). Interviewed on June 20, 2017)

In 1997, it was considered as a small community surrounded by a forest area where people would live with their natural resources. It was a community of people who had received education according to the compulsory primary education standard set by the government at that time.

In the past, when the people in the area needed to visit the centre of Roi Et province they could use two routes, 1) by the Chi River, using a car ferry, one service per day. 2) regular trip by road to the area of Selaphum, this route requires a longer travelling time.

### **Lifestyle of the community around Roi Et Rajabhat University.**

#### **Career**

Before 1997, the community was mostly agricultural. In addition some people earned their profit from the products that they sales, sales on credit. Most people in this profession became wealthy. Currently, the people who own land, a dormitory business, or a bazaar in the area of Koh Kaew are the group of people who had been selling goods on credit. Credit sales began going down because of oil prices. (Owner of a private dormitory, interviewed on January 14, 2016), and most of them quit due to big discount sales promotions offered by merchants. (Abbot. Interviewed on January 10, 2016), some people around Roi Et Rajabhat University continue to be workers outside the area while some remain farmers. (sales staff in the store of Roi Et Rajabhat University. Interview on February 12, 2016), while some of them continue farming, but life is not difficult because of the perfect living conditions such as their natural way of life, neighbours are like kin, so they support each other all the time. (University cleaning staff Interview on January 9, 2016)

#### **Society and Culture**

The community around the campus focused on the education of children, and these children grew up and took a great role in the establishment of Roi Et Rajabhat University.

The villagers have a strong attachment to the importance of Buddhism. The people who attend the important Buddhist days are of all ages. Especially teenagers who are consistently first in obeying and assisting in the affairs of the temple. As in the past, temples remain the centre of herbal medicine and it is a place to mediate conflict in the community. (Abbot, interviewed on January 10, 2016)

### **The impact of the urban community around Roi Et Rajabhat University.**

The establishment of Roi Et Rajabhat University had the effect of increasing the population in the area. The numbers of students and faculty staff, especially the students

that are from different areas, they move to stay in the university dormitories and private residences around the campus. With the founding of Roi Et Rajabhat University, the surrounding area has adapted to be a "City" but this condition is located within a 2 kilometre radius. It has had a great impact on the way of life of the community which we can be summarized as follows:

### **Social including:**

#### **Education**

When Roi Et Rajabhat University was founded in the area, it provided an opportunity for people in the area to enter higher education and to improve their knowledge and social mobility by bringing knowledge for self-development in order to obtain a better job. They have become people who can work in local government or have a private job.

"... the children learn near home, save money ... "(cleaning staff of Roi Et Rajabhat University. Interviewed on February 12, 2016)

#### **Population and lifestyle**

##### **The population**

Roi Et Rajabhat University succeeded in establishing its first group of students in 1999, at that time there were few students but by 2009, the number of students had increased. The driving force of government policies in support of the expansion of educational opportunities, budget support, and the promotion of teaching staff to study at doctoral level opened the door to more courses. These factors encouraged the increase of the population of the university, especially students and the groups of people who provide support services to the students, including, those who migrated to work in another area, and began to return to their home town. The community must accommodate an increasing population by providing dormitory accommodation, commercial buildings, markets, etc.

**Lifestyle:** the lifestyle changed greatly after the establishment of Roi Et Rajabhat University .

##### **City life style**

There are two major groups of villagers, ones who sold their land, and those who didn't sell their land. They have different views. The people who sold their land or did not want to sell their land explained that since the Rajabhat University came to the area, some villagers had become more distant. In the past, there were no fences, they lived together but since the land was sold, the villagers have built homes with high fences. The ways of life where they were helpful to each other has changed, their relatives are far away and they spend more money in their daily life. (Cleaning staff, Roi Et Rajabhat University. Interviewed on February 12, 2016)

However, a former leader of the local administration, who used to trade in sale on credit, and currently owns a private dorm, said that the feeling is of being far away and this

sometimes comes from having no chance to talk with friends due to having a lot of work. It is very different from in the past.

The surrounding area is now more prosperous. The lifestyle of the surrounding villagers is more hi-society, such as, building modern homes, buying new cars, the quality of food, ready meals, and teenagers living together before marriage.

*"... cannot deny that there are both positive and negative effects. There's a theft problem, they're not caught because the people have come from outside, then we cannot take good care about that. The increase in transportation, employment, tourism, community shops, and barber shops around the university is very beneficial to the community..."* (Acting Chief Executive of Sub-district Administrative Organization November 29, 2016)

The villagers have a way of living in the city, in terms of food consumption and eating, also many lifestyle changes, such as exercise, people ride bikes and run around the pool on the campus.

### **Comfortable lifestyle**

The community around campus has seen progress. The road has been developed into Siemens road, which has been supported by the local government with lights on the road and a water system, also there is a hospital in the community and a post office.

*"...building roads or infrastructure makes the community comfortable. These things came on a lot in that time ... "* (private dorm owner. Retired teacher. Interviewed on November 26, 2016)

The market in the community has expanded. The occupations of the villagers are more flexible; however, sustainability cannot be guaranteed as it depends on the number of students, on Friday evening, Saturday and Sunday, they cannot sell because most of the students come from farmer families. At the weekend they need to return home to help their parents with farming or other agricultural activities such as cutting sugar-cane, etc. Farmers cannot leave their own agricultural activity and at the end of the semester, there are no students so many businesses cannot generate revenue. Finally, the villagers turn to agricultural occupations during the holidays (The owner of a food shop. Interviewed on January 14, 2016). In the case of two convenience stores in front of Roi Et Rajabhat University, it was found that, during the holidays, there is no replenishment of many products.

### **Well-being of the villagers**

The economy of the community around the campus depends on the opening and closing of each semester and the number of students, each year, is uncertain though some of the surrounding villagers have invested in large enterprises, such as dormitories, that require a lot of money. It may take some time to get their money back; however, it was found that most of the villagers had invested in dormitories with the capital repayable over only 2-3 years. And if students do not stay, the old dormitories may be abandoned and the

owner will leave and wait for new investors to buy or open a new dormitory or to make another business investment.

However, it was found that the community has a better quality of life, young people in the area can easily access higher education and they do not have to travel far, or face high costs.

*"... education of youth in this area, they have education near home, after graduating, they will have a job ... "* (private dormitory owner, retired teacher. Interviewed on November 26, 2016)

### **Religious affiliation**

The community around Roi Et Rajabhat University has religion in their daily life, and it was found that there is still an attachment, such as activities between the temple, community and Roi Et Rajabhat University. There is still mutual cooperation. (The owner of the bazaar. Former leader of the local government organization January 8, 2016), and it depends on the mind. It is very evident that in the group of ageing people, some are in depression.

*"... the ageing people are abandoned. Their children don't have time to visit the old people, which made them so depressed..."* (Abbot. Interviewed on January 10, 2016)

In the past, there might have been a lot of ageing people going to the temple. But nowadays, working people who went to work in different areas have started to return home because they have more job opportunities for a career. They have become a powerful group to support the activities of the temple. And their former employers, who still keep in touch, like to make merit, then this area receives mutual merit from outsiders and insiders in the area.

### **Community Relations**

Regarding cooperation between the people and support agencies in the area, sometimes there is a lack of communication, so they don't understand each other. Especially when they request for cooperation in the activities of the area, some groups think that there are not enough announcements by the agencies, then they cannot give good cooperation. The government officials think that people do not cooperate as in the past, because now most people have more money and they seem to have drifted apart from each other.

The relationship between the university and local government sometimes depends on informal, personal relationships. The relationship between a dormitory owner and student could be like family when the student graduated and became a staff member at Roi Et Rajabhat University. The relationship between the university and the community is full of mutual understanding. (Senior Officer, Planning and Policy Department On November 25, 2016), some private dormitories have a generous commitment to their students and have a sense of responsibility, like their parents.

*"... I love students like grandchildren, sometimes, students have problems with the education fee, they will come to talk, parents will call to solve this problem, even if I have*

*to pay the bank, I will always be flexible with them, however. they must pay all debts to me within the end of the semester... "* (private dormitory owner, retired teacher. Interviewed on November 26, 2016)

Some dormitory owners thought their relationship with the students was not the same. Not based on the idea of a tight relationship because many students regularly moved to new dormitories, they did not engage with the owner of the dormitory, as in the past.

### **Environment and Social problems**

Due to the increasing population in the area there has been a rise in problems such as floods, garbage, traffic, dust, criminal acts, etc. The flooding results from poor urban planning and also a lack of urban planning experts to educate the local or relevant officials. Non-compliance with the rules is an issue as those who are involved failed to realise that the area would grow so fast, so they did not undertake systematic urban planning.

In the past, many people were farmers or had a non-agricultural occupation. Some careers, such as selling on credit, made them a lot of money so they were able to accumulate land in the past. They stopped that career because of the rising price of oil and were unable to break even; the expansion of department stores in many areas, with low prices, meant that the public could access more products without the need to buy on instalments. For the group of people who were farmers around the campus from their grandparents' generation, they sold land when Roi Et Rajabhat University was founded and so became wealthy. Their social status changed from being a farmer to become an entrepreneur, such as the owner of a dormitory, owner of a mobile phone repair shop, or by the accumulation of wealth from the sale of land; some may enter local politics. Some villagers, who live some distance away from the campus, may be involved in support services such as being a security officer or doing housework for the university.

However, we found that some people studied at undergraduate level (education for all, studying on Saturday and Sunday). From the beginning of the establishment of the university, some of them are now working in the local administrative organizations, as general workers, or have become staff members at Roi Et Rajabhat University. For bachelor degree graduates, these people can get many different jobs, although many choose to pursue a private business career, and it was found that they are able to create their own, standout careers.

At the beginning of the establishment of Roi Et Rajabhat Institute, some villagers, who had land around the campus, sold it allowing them to send their children to study in Australia. In 2009, there were six members of the community studying in Australia.

### **4. Discussion and Conclusion**

The impact on the community around Roi Et Rajabhat University, can be seen in both positive and negative aspects, especially regarding social, economic, cultural, and environmental. The problems faced are similar to the problems in large cities, such as social issues. We must consider that the students have decided upon entry into higher education, which will effect upon their social mobility. The people who migrated away, to

work in the city, began to return to their hometown. People from outside the area come to work in the community around the university. The way to life has changed, there is distance between relatives, this occurred because the people who sold their land created a new identity and status; they may think that relationships with their neighbouring kinship are the same, but between the groups of people who chose to sell their land, or did not, the relationships are no longer as strong. People who live behind fences may not help each other as they did before, they prefer live separately. Meanwhile, some changed their career and focused more on service. These people still occupy the land but it is far away from the campus, so they must turn themselves into service providers such as housekeepers or security guards on the campus; some people sold a certain amount of their land to buy more land, further away. The price would be cheaper than the area around Roi Et Rajabhat University and they would still continue to be farmers.

For religion , today's priests may need to devote themselves more because the community has a way of life and, as people have to work, they cannot dedicate themselves as much as in the past. But, regarding this issue, some villagers are still attending the temple and the ages of the people who go to the temple are varied. The way of life of the community has been affected by urbanization, especially the area of around two kilometres, close to Roi Et Rajabhat University, which has changed a lot.

### **Suggestion**

The suggestion is to deliver knowledge regarding urban planning to the local government officials in a systematic manner.

### **Acknowledgments**

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# THE IMPACT OF INTERNATIONAL INTEGRATION ON URBANIZATION IN VIETNAM<sup>1</sup>

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## **Abstract**

*Are the International integration and Urbanization closely related in the process of comprehensive development both economy and society? How does the integration affect the urbanization process in Vietnam? The question is how to effectively integrate and facilitate the process of urbanization in Vietnam has developed rapidly and ensuring sustainability. This article will show how urbanization in Vietnam over the years has been impacted by integration? On that basis, propose some suggestions for sustainable urban development, enhancing competitiveness and deep integration in the international arena as well as improving the quality of urbanization in Vietnam.*

**Key words:** International integration, Urbanization

## **1. Introduction**

In the current context, international integration is not only limited in an area such as economics and tariffs, but also has been extended to all areas of life - social, cultural, commodity markets, service, competitiveness of the economy. Vietnam's economy has changed relatively positively over the years. We have made deepening international economic integration. The growth of import and export is high and stable, and FDI inflows are relatively strong, which spurred a very strong economic growth. The share of exports in GDP in recent years has reached nearly 50% while the share of FDI in GDP has also reached nearly 14%. The process of integration has shown that Vietnam's products can compete and have a place in many international markets. Vietnam's products are present in more than 100 countries in the world, of which the major markets are the United States (18%), EU (17%) and ASEAN (16.8%) (According to statistical yearbook, 2010). In recent years in our country, urbanization has been strong in all localities and particularly strong in big cities like Hanoi, Hai Phong, Da Nang, Ho Chi Minh and Can Tho. According to the data of Ministry of Construction, in 2017, our country has about 805 urbans, of which, there are 2 special urban as Hanoi and Ho Chi Minh, 17 grade-I urban centers, 23 grade-II urban centers, 43 grade-III urban centers, 77 grade-IV urban centers, and the rest are grade-V urban centers. The total area of urban land in the whole country is about 330,610 ha (equivalent to 1% of the country's land area), of which inner urban land accounts for about 125,000 ha (about 40% of the total urban land area). Urban areas account for 1% of the natural land with 35% of the population, but the urban economy contributes over 70%

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of GDP annually to the economy. These figures show the role of the urban economy in our country. So is the growth economy accompanied by an increase in urbanization and a change in social progress? In the world, there are some authors who have studied the effects of urbanization on socioeconomic status or factors affecting urbanization. For example, some case studies such as Gaurav Datt Martin et al. (2016) have shown that economic growth and urbanization have an impact on poverty reduction in India. Or Edward L. Glaeser (2013) analyzed the causes and consequences of urbanization. The author points out that urbanization increases the pressure on agriculture. The challenge for urbanization is poverty and weak governance capacity that will affect the addressing the negative effects of urbanization such as population density, or the relationship between urban scale and institution. The author also points out that if a city with a large population (high urbanization) and a weak governance capacity to mitigate negative impacts, arbitrary policies are applied and consequently social disorder. However, the relationship between international integration and urbanization is not mentioned.

Vernon Henderson (2013) analyzed the factors influencing to the urban concentration, the author points out that income influences urban concentration firstly, followed by investment in infrastructure, and political decentralization all affect urban concentration. The author also points out that open economies, or trade liberalization do not affect the urban concentration with data from 72 countries in the world

Choe (2005) pointed that globalization is important for urbanization and urban economic growth because it affects spatial allocation of resources and creates spatial impacts. Factors that affect allocation of resource include overall population growth and distribution, population distribution among large and small cities, communication and other technologies, scale economies and diseconomies of cities, industrial composition, changing comparative advantages of cities, demographic factors, and income growth and distribution. Cohen's (2004) excellent review of global literature on urban growth in developing countries provides with characteristics of urban growth in a global economy. Drivers of globalization are identified with technological changes in transportation and communication, reduced need for spatial proximity of firms and industries and increased mobility of factors of production. The combined impact of these changes are related to new international division of labour, increased trade and investment, growing transnational communications and expanding cross-border alliances between businesses and industries. The benefits of globalization include spread of technology and management expertise, efficient use of factors of production, expansion of markets and greater opportunities for wealth creation. Risks of globalization are associated with loss of local income and jobs as a result of external shocks and competition from imports and rising inequality with spatial and social segmentations

A preliminary link between globalization and broad changes in cities and city-related policies is described by Mathur (2005). Lack of international trade data at sub-national levels limits the measurement of globalization for fifteen states and six cities only by the amount of inflow of foreign direct investment. Post-globalization urban growth is described by changes and growth in urban population and changes in share of employment in manufacturing and service sectors. Absence of primacy is distinguished as an important

characteristic of India's urban system. Changes in spatial structure are identified with transformation of urban space in use and form, such as commercial spaces for shopping and office space for MNCs and financial institutions, and mushrooming of high-quality residential and office space bordering major cities. Absence of appropriate reform in policies that govern urban land markets is considered a key constraint in the globalization period. In addition, globalization period underlines a paradigm shift in city-level policies for provisioning of municipal services and infrastructure in terms of debt financing, public-private partnerships and cost-recovery based pricing. Kundu (2006) explored the unequal economic base between class I cities (million plus cities) and medium towns (50,000 to 1 million population) and small towns (less than 50,000 population) in terms of employment, consumption and poverty. These inequalities are considered as consequences of large cities' capacity to attract national and global investors and link with national and world markets, and decline in public investment in infrastructure and basic amenities for small towns. Thus, a case is made for providing special capital support to the less-developed states that are not in a position to allocate requisite funds to medium and small towns for improvements in their infrastructure and amenities and for enhancement of their attractiveness for private investments and business

## 2. Method

The article uses statistical, described methods to analyze the influence, evaluate the role of the process of international integration to the process of urbanization. In addition, inheriting selective domestic and international researches have announced related to this topic: Collecting and researching domestic and international documents about Vietnam's international integration and urbanization. The article uses data and information selectively published in mass media. This article will answer the question Are the International integration and Urbanization closely related in the process of comprehensive development both economy and society? How does the integration affect the urbanization process in Vietnam?

## 4. Discussion and Conclusion

### 4.1. Actual situation of urbanization in Vietnam

Table 1 shows that after more than 30 years of renovation, Vietnam has linked the process of urbanization with the process of industrialization and modernization and gained many important achievements.

Vietnam's urban system has rapidly developed in terms of quantity and quality; the urbanization rate has increased from 19.6% with 629 urban in 2009 to 37% with 805 urban as of April 2017 (Ministry of Construction, 2017)

**Table 1: Urbanization rate (proportion of urban population) in Vietnam during 1940-2017**

Year	1940	1951	1960	1970	1979	1989	1999	2009	2013	2014	2015	2016	2017
%	8.7	10.0	15.0	20.6	19.2	22.0	23.5	29.6	33.47	32.8	35	36.6	37

*Source: Ministry of Construction, 2017*

Urban area accounts for 70% of total GDP, bringing industrial production value, import-export value, scientific and technological advances, spread and promote the socio-economic development in the region and throughout the country.

However, the rate of urbanization by region is very different, see table 2

**Table 2: Urbanization rate by region in Viet Nam between 2009 and 2014**

Region	Urbanization rate (%)	
	2009	2014
Whole contry	29.6	33.1
1. Northern midland and mountain areas	16.0	17.0
2. Red River Delta	29.2	33.8
3. North Central and Central coastal areas	24.1	27.1
4. Central Highlands	27.8	29.1
5. South East	57.1	62.3
6. Mekong River Del	22.8	24.7

*Source: General Statistics Office over years*

Table 2 shows that in 2009, the urbanization rate of the whole country was 29.6%, the South East has the urbanization rate twice as high as the urbanization of the whole country. The Red River Delta is second only to the urbanization of the country. The lowest level of urbanization is in the Northern Midland and Mountain areas, with 16% accounting for only 54% of the urbanization of the country. After 5 years, the rate of urbanization nationwide increased by 3.5%, the fastest urbanization remained in the South East, increasing by 5.2%, followed by the Red River Delta increasing 4.6%, the North and South Central Coast has the third highest rate of urbanization with 3%. The region with the slowest rate of urbanization is the Northern Midlands and Mountains, increasing only 1% after 5 years, followed by the Central Highlands with 1.3%.

However, as in many other developing countries, Vietnam's urbanization process faces many difficulties and challenges. The rapid pace of urban development has surpassed the capacity of local government, inconsistent development between technical infrastructure and social infrastructure, uncontrolled migration, the gap between the rich and the poor, the urban - rural linkage, the saving of natural resources...

In addition, Vietnam also faces emerging global issues such as integration, urban competitiveness, climate change, rising sea levels

## ***4.2. Impacts of international integration on the urbanization process in Vietnam***

### ***4.2.1. Promoting urbanization associated with industrialization***

Urbanization-increasing the densities of people and production in cities and towns - is one of the most striking features of economic development. Incomes tend to rise, especially when accompanied by increases in the contribution of industry and services to

economic activity and jobs. Indeed, Vietnam’s extensive urban transformation over the past three decades has levered its economic development. In 1986, the country had fewer than 12 million urban residents; now it has more than 30 million, and urban areas contribute more than half the gross domestic product (GDP). Urbanization and industrialization are dependent, complementary to each other. Clear evidence of this combination is increase rapidly in number of industrial parks in Vietnam along with the urbanization process. Specifically, in 2000 Vietnam had 33 industrial parks, in 2008 the total number of industrial parks nationwide is 219 and in mid-2011 is 260 with a total area of 72,000 ha. Between 2000 and 2008, each year, an average of 21 industrial parks were built in Vietnam. According to the report of Department of Economic Zones Authority, Ministry of Planning & Investment, by the end of May 2017, 325 industrial zones (IZs) were established with the total area of 94.9 thousand ha. The area of industrial land for lease is 64 thousand ha, accounting for 67% of total land area.

In which, 220 industrial zones have been put into operation with a total natural land area of 60.9 thousand ha and 105 industrial zones are in the process of compensation for site clearance and basic construction with a total area of 34 thousand ha. The occupancy rate of the IZs was 51.5%, particularly in industrial parks which have been put into operation, the occupancy rate was 73%. In terms of attracting investment, IZs have attracted 375 newly registered foreign investment projects and increased capital with total registered investment capital of nearly \$ 6.2 billion and 318 domestic investment projects and adjusted for capital increase for 115 projects with total new and additional investment capital of 108,000 billion dong.

#### 4.2.2. Promoting urbanization has positively changed the economic indicators

The income of the people has improved in line with the integration process as well as the speed of urbanization. Specifically, in Table 3, after seven years, the level of people's income increased approximately 2.6 times. The import-export situation is relatively good

Table 3: Some indicators of integrated economic development of Vietnam

Indicators	Unit	2008	2009	2010	2011	2012	2013	2014	2015
1. GDP	Billions VND	1.616.047	1.809.149	2.157.828	2.779.880	3.245.419	3.584.262	3.937.856	4.192.862
2. GDP / capita	Millions VND	18.9	21.1	24.8	31.6	36.5	39.9	43.4	45.7
3. Total export turnover	Billions USD	62.7	56.5	71.6	96.9	114.5	132.1	150.2	162.11
4. Export growth rate	%	29.1	-11.5	25.5	26.1	15.37	17.6	12.05	7.9
5. Total import turnover	Billions USD	80.7	67.5	73.6	106.75	113.78	131.67	147.66	165.65
6. Import growth rate	%	28.5	-16.4	9.0	31.1	6.1	13.5	10.82	12.00

*Source: General Statistics Office over years*

We have made deepening international economic integration. Import and export growth is high and stable, and FDI inflows are relatively strong, which has spurred a very strong economic growth. The share of exports in GDP in recent years has reached nearly 50% while the share of FDI in GDP has also reached nearly 14%. In early 2007, Vietnam became a full member of the WTO after more than 10 years of negotiations and 20 years since the implementation of the policy of renewal. As a member of the WTO, Vietnam enjoys the most favored nation status of all other members (eliminating quotas on exports), and at the same

time, Vietnam must also apply WTO rules. WTO accession is a crystallization of a long process of economic reform and international integration of Vietnam, beginning a period of strong international trade development. The opening process of integration has shown that Vietnam's products can compete and have a place in many international markets. Vietnam's products are present in more than 100 countries in the world, of which the major markets are the United States (18%), EU (17%) and ASEAN (16.8%).

#### 4.2.3. Promoting urbanization to reduce poverty

In terms of poverty reduction, our country has made certain achievements. Look at table 4, we see that the poverty rate has decreased markedly, in particular, in 2014 compared with 10 years before - 2004, especially after 07 years of joining the WTO, the poverty rate has decreased nearly 3 times. This is a remarkable achievement, as a result of integration, of urbanization, of economic growth.

**Table 4: The poverty rate divided by urban – rural**

Indicator	Unit	2004	2006	2008	2010	2012	2014
<b>1.Poverty rate</b>	<b>%</b>						
Whole country	%	23.2	15.5	13.4	14.2	11.1	8.4
Urban	%	13.7	7.7	6.1	6.9	4.3	3
Rural	%	26.4	18	14.7	17.4	14.1	10.8

Source: *General Statistics Office (2016)*

#### 4.2.4. Promote the process of urbanization associated with population shifts

Look at table 5, the migration flows from rural to urban areas contribute to an increase in the urban population of over 1.6 million people. In contrast, migration from urban to rural areas has reduced the urban population by more than 0.6 million. Thus, the net migration of these two migrations has increased the population of urban areas by nearly 1 million, lower than in 2009 (over 1.5 million).

**Table 5: Number of migrants and migration rate of urban population by migration flow, 2009 and 2014**

Migration flow	Number of migrants (person)	Migration rate (%)	Number of migrants (person)	Migration rate (%)
Migration from rural to urban areas	2,122,071	8.3	1,642,186	5.5
Migration from urban to rural areas	564,949	2.2	686,551	2.3

Source: *GSO, 2015: Population and Housing Census*

The increase in the urban population in addition to the effects of birth, death and migration factors is also attributable to administrative change, transformation from rural to urban areas. Approximately 3 million people live in rural areas in 2009 and now turn into urban areas, accounting for 9.9% of the urban population, almost twice as high as the increase in urban population due to migration.

### **4.3. Conclusion and policy implications**

According to the above analysis, international integration is parallel with the pace of urbanization. Integration accelerates the process of urbanization. However, if we control the speed of urbanization will have positive effects, otherwise we will be banned. On the other hand, the process of urbanization in our country is mainly developed in width, mainly increase in the number of urban population. For example, urbanization too fast while the infrastructure is not up to date will be a major problem for urban like unemployment, environmental pollution,... and will limit the development of urban areas. Therefore, for urban development in the direction of sustainability we need:

(i) In parallel with accelerating the pace of urbanization, the state needs to develop specific strategies in each period to avoid the state of the infrastructure failing to keep up with the pace of urbanization.

(ii) Controlling the flow of migrants closely, the State should create conditions for this migration to develop as speed up the urbanization, on the other hand, in densely populated urban areas, they need to build and expand their technical infrastructure. Preparing conditions to accommodate this migration, such as housing, roads, training facilities, health facilities...; Revise access to social services policies to remove barriers to accessing social services of migrants at the destination.

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# THE IMPACTS OF PUBLIC INVESTMENT AND PRIVATE INVESTMENT ON SOCIO-ECONOMIC ISSUES IN NAM DINH PROVINCE

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## **Abstract**

*The purpose of this study is to assess the impacts of public investment and private investment on some socio-economic issues in Nam Dinh province during the period 2000 - 2015. The results show that public investment impacts negatively on the economic growth of Nam Dinh province, the efficiency of the capital is still low and its contribution to the GDP of the province is not commensurate with the capital invested, while the private sector has positive impacts on economic growth, contributes much to the GDP of the province. While public investment has not yet played an important role in addressing social issues in Nam Dinh, private investment has become an important driving force in solving social problems. According to the assessment of the impacts of public investment and private investment, the article has implicitly raised issues concerning policies which can improve investment efficiency, especially public investment in Nam Dinh province in the near future.*

**Keywords:** *Public investment, Nam Dinh, impact of public investment.*

## **1. Introduction**

Evaluating the impact of public investment and private investment plays a significant role in identifying issues of public investment policy. It is based not only on the number of results achieved, but also on the relationship between the public investment and the current situation of economy, society and environment. The paper focuses on evaluating the impact of the public investment and private investment in terms of economy (assessing the contribution to GDP of the province, assessing the impact through the ICOR coefficient, assessing the impact on economic restructuring by the coefficient  $\text{Cos}\phi$ , and the impact on economic growth), as well as society (measured to the decrease in the incidence of poverty and unemployment) at the provincial level. According to this assessment, the provincial government can adjust positively and appropriately the public investment, which will limit a negative impact on the private investment. Moreover, the local government can develop a strategic direction for the public investment in order to carry out the public investment restructuring in line with the realities of the economy in the next period. Hence, the paper assesses the impact of public investment and private investment on the economy and society of Nam Dinh province.

## **2. Method**

### **2.1. Literature review**

In the paper, the authors use the concept of public investment in terms of ownership, which is also used in the researches of Mankiw et al. (1992); Khan & Kumar (1997); Nguyen Minh Phong (2010) and Vu Tuan Anh (2010). The researchers define that the public investment is all investments derived from the government and state-owned enterprises.

Many researchers have attempted to determine the efficiency of public funds by estimating through the Cobb-Douglas production function, where public funds are considered an input variable. Aschauer (1989), who is one of the first researchers in this major, explained the decline in productivity in the United States in 1970. The author pointed out that with every 1% increase in public sector capital, the efficiency of public funds would increase to 0.39%. Khan & Reinhart (1990) and Rui & Gallo (1991) developed growth model and concluded that private investment has a positive impact on economic growth which is greater than that of public investment. However, these studies used small samples of data from a small number of countries and short study periods; therefore, the results may not be accurate and comprehensive. Similarly, Khan & Kumar (1997) have more comprehensive researches which used data in 95 developing countries from 1970 to 1990 in order to evaluate the contribution of public and private investment to GDP per capita. Furthermore, Tatom (1991); Eastly & Rebelo (1993) and Wang & Raymond O'Brien (2003) also indicated that public and private sources have different effects on economic growth, of which public investment has less impacts on economic growth than private investment.

However, according to Greene & Villanueva (1991) and Hadjimichael & Ghura (1995), public investment has created spillover effects on the private sector, and support private investment, then helps the economic growth increase. In view of this, Ghura & Goodwin (2000), and Romp & Haan (2007) also argued that public investment has a positive impact on economic growth.

The research of the Central Economic Commission (2013) focused on analyzing and evaluating the reality of capital investment from state budget in Vietnam. The research team has set up a system of indicators to evaluate the efficiency of state budget investment in terms of economic and social efficiency. The research used the ICOR coefficient to evaluate the impact of capital investment from the state budget on the economic structure shift through coefficient  $Cos\phi$ , to assess the impact of capital investment from the state budget on poverty reduction and unemployment reduction by the elasticity coefficient. Since then, the research confirmed that the investment from the budget plays a very important role in socio-economic development, contributing to improve the material and spiritual life of the people.

To evaluate Public investment in relation to private investment in Vietnam, To Trung Thanh (2011) used the Vector Autoregressive Error Correction Model (VECM) to

estimate response function with three variables (in the form of logarit) is public sector investment, private sector investment and GDP, the study shows that public investment "overwhelmings" private investment clearly reflected in the period 1986-2010.

## 2.2. Research Methods

First, to assess the impact of public investment and private investment on economic economics, the author (i) assesses the contribution to GDP of the province, (ii) evaluates through the ICOR, (iii) the impact assessment for economic transition through Cosφ coefficient, Cosφ coefficient is calculated by the formula:

$$\cos \varphi = \frac{\left( \sum_{i=1}^n S_i(t_0) S_i(t_1) \right)}{\sqrt{\left( \sum_{i=1}^n S_i^2(t_0) \sum_{i=1}^n S_i^2(t_1) \right)}}$$

Where: -  $S_i(t)$  is the weight of sector  $i$  at time  $t$

-  $\varphi$  is the angle of the two economic vector vectors  $S(t_0)$  and  $S(t_1)$ , where:  $0 \leq \varphi < 90$

And (iiii) to evaluate the impact on economic growth, the authors use the Solow growth model (1956) and Barro's model expansion (1991), Mankiw et al. (1992), and especially Khan & Kumar (1997). Accordingly, the Solow model assumes savings rates, population growth rates, and technological progress being exogenous. The two main inputs are capital and labor.

Khan & Kumar (1997) focused on the role of private capital and public investment; Therefore, these two forms of capital have been distinguished by the authors in their model. Accordingly, a Cobb-Douglas production function with production at time  $t$  will be:

$$Y(t) = K_g(t)^\alpha K_p(t)^\beta (A(t)L(t))^{1-\alpha-\beta} \quad \alpha+\beta < 1 \quad (1)$$

In particular,  $Y$ ,  $L$  and  $A$ , respectively are quantity, labor and technology;  $K_g$  and  $K_p$  are capital flows of the public sector and the private sector.  $L$  and  $A$  assume exogenous growth with increases of  $n$  and  $g$ . In other words, the technological level increases steadily every year at the rate of  $g: \frac{\dot{A}}{A} = \gamma$ ; And the labor force  $L$  grows steadily every year at the rate  $n: \frac{\dot{L}}{L} = n$ . Thus,  $N = LA$  is the effective labor, the rate of growth of the effective labor  $N$  is  $n + \gamma$ , or  $\frac{\dot{N}}{N} = n + \gamma$ .

According to Khan & Kumar (1997), the effect of the investment rate on per capita income at the steady state can be estimated through the following linear regression model:

$$\ln y_t = \alpha_0 + \alpha_1 \ln s_{p,t} + \alpha_2 \ln s_{G,t} + \alpha_3 \ln(n_t + x + \delta) + \varepsilon_t \quad (2)$$

$Y_t$  is the per capita income (in 2010 prices).  $s_{P,t}$  and  $s_{G,t}$  in turn are the rates of private investment and public investment on total income.  $n_t$  is the population growth rate.

However, not all provinces (or countries) can satisfy the conditions for achieving stopping status, so the author uses the estimation model with the assumption that Nam Dinh province is transition to steady state. The linear regression equation is presented as follows:

$$g_{y,t} = \alpha_0 + \alpha_1 \ln s_{p,t} + \alpha_2 \ln s_{G,t} + \alpha_3 \ln(n_t + x + \delta) + \alpha_4 \ln y_{t-1} + \varepsilon_t \quad (3)$$

With  $g_{y,t}$  is the growth rate of per capita income.

The above models use  $\ln$  (natural logarithm), so the coefficients are explained in terms of elasticity.

*Second*, with the evaluation on the impact of public investment and private investment on society, the article uses: impact assessment of public investment and private investment to reduce poverty and reduce unemployment in the province by Elasticity is calculated by the following formula:

$$\beta = \frac{\sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y})}{\sum_{i=1}^n (X_i - \bar{X})^2}$$

In it,  $\beta$  is the elastic coefficient.

$X_i = \ln(x_i)$  with  $x_i$  is the investment per capita in urban  $i$ .

$Y_i = \ln(y_i)$ , where  $y_i$  is the urban unemployment rate in year  $i$ .

### **2.3. Data and estimation methods**

Data used in the study include real incomes, public investment and private investment, working-age population, data compiled from the Nam Dinh Statistical Yearbook and data published from Report on provincial performance and public administration in Vietnam and provincial competitiveness survey database.

The data used for estimation is Nam Dinh annual statistical data from 1999 to 2015. In addition, all variables are calculated according to the 2010 comparative price. In which,  $n$  is the increase rate the average of the labor force aged 15 and above (hereinafter referred to as the labor force);  $S_g$  and  $S_p$  are measured as the ratio of public investment and private investment in total collected; and  $Y / L$  is the GDP at constant 2010 prices divided by the labor force in that year. The author uses the Ordinary Least Squares (OLS) method to estimate equations (2) and (3).

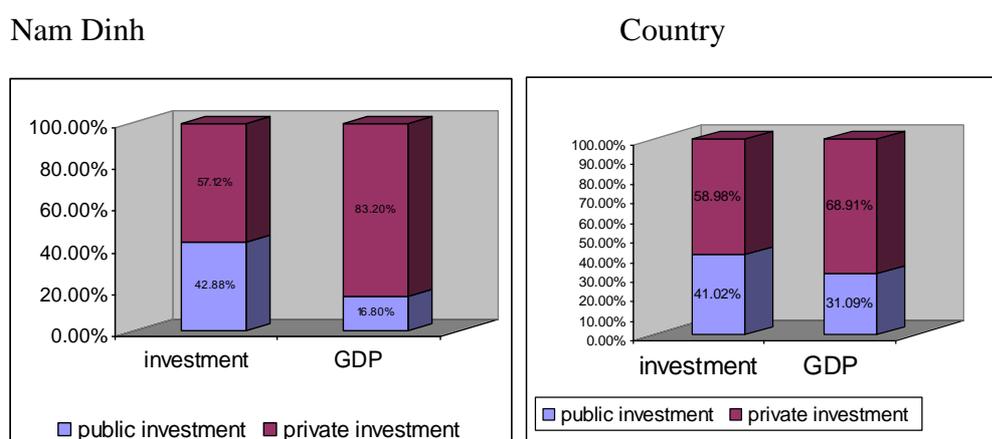
## **3. Results**

### **3.1. Impact of public investment on Nam Dinh's economy**

*First*, assessing the impact of investment through the contribution to GDP of Nam Dinh.

In the period 2000 - 2015, the share of GDP of the public sector in GDP of the provincial economy is very low, only 16.8%. At the same time, the proportion of public investment capital in the total investment capital of the province accounts for 42.88%. The private sector has a direct contribution to GDP, which is higher than the public sector, in particular between 2000 and 2015, with a 57.12% share of private sector investment. This sector directly contributes to the GDP of the province up to 82.2%. It can be said that public funds are not used properly.

**Figure 1: The contribution of the public sector and the private sector to GDP of Nam Dinh period 2000-2015**



Source: Nam Dinh Statistical Office; General Statistics Office of Vietnam 2002, 2015 and calculated by the author

It is possible to consider the effect of public investment and private investment through the ICOR. From the ICOR indicator, the efficiency of using the same private sector investment is greater than that of the public sector. Specifically, in the period of 2000 – 2015, to generate 1 dong increasing in GDP, the private sector of Nam Dinh only needs to invest 2.72 dong while the public sector of Nam Dinh must invest more to VND9.2; In comparison with the public sector in the whole country, the public sector of Nam Dinh is still far less effective than the national public sector. The public sector has an ICOR of 4, 34.

**Table 1. The ICOR coefficient of Nam Dinh province in 2000 – 2015**

Indicators	Nam Dinh	Vietnam
Public sectors	9,20	4,34
Private sectors	2,72	3,10
The economy	3,62	3,52

Source: Nam Dinh Statistical Office; General Statistics Office of Vietnam 2002, 2015 and calculated by the author

Second, evaluate the impact of public investment on Nam Dinh economic growth.

The estimated result of log of income per labor is based on the log of the public investment ratio, log of the private investment ratio and the  $\ln(n + \gamma + \delta)$  from 1999 to 2015. The assumption of  $\gamma + \delta$  is 0.05 (Mankiw et al. (1992) and some other studies assume that  $\gamma + \delta = 0.05$  (with values of  $\gamma$  and  $\delta$  respectively being 0.02 and 0.03.). According to Mankiw et al. (1992), the change in the assumed value ( $\gamma + \delta$ ) will have an extremely small effect on the estimation result. Indeed, some studies, such as that of Romer (1990), Mankiw et al. (1992), suggest that the value of  $\delta$  is from 0.03 to 0.04, while Khan and Kumar (1997) supposed that the value of  $\delta$  is between 4 and 5 percent. This paper uses different values of  $\delta$  (from 2 to 5 percent) but the estimated results are almost unchanged.

**Table 2: Estimated Solow model parameters expanded in stop state**

Dependent variable: ln (Y) per labor at constant prices 2010.

Independent variables	Extended Solow model	
	Estimation	Standard error
Const	1.631111**	0.555090
ln(SI)	0.425709***	0.104862
ln(SG)	-0.357208**	0.150696
ln(n+0.05)	0.004724	0.090588
Dummy	1.246804***	0.104076
R <sup>2</sup>	0.97	

*Source: Author's calculations*

Note: \*, \*\*, \*\*\* represents the meaning level corresponding to 10%, 5% and 1%.

Public investment and private investment in this period all reach significant rate. In particular, Public investment has a negative impact on economic growth of Nam Dinh, ie if the public investment increases by 10%, GDP per capita decreases by 3.6%. Private investment has a positive impact on economic growth. Specifically, if private investment increases by 10%, GDP per capita increases by 4.2%. The ln parameter has a negative value (as in equation 7) but does not gain a confident level of 1%.

Regarding the estimation of the Solow model in the transition state, the author estimates the GY economic growth rate based on the log of average labor income of the previous year (Y-1), the log of the initial rate (SG), private investment ratio (SI) and ln in the period 1999 - 2015.

**Table 3: Estimated Solow model parameters expanded in transition state**

Dependent variable: GY at constant 2010 prices.

Independent variables	Extended Solow model	
	Estimation	Standard error
Const	0.290954	0.426091
lnY(-1)	-0.420761***	0.118669
ln(SI)	0.122665	0.087427
ln(SG)	-0.281387***	0.089813
ln(n+0.05)	-0.032224	0.053712
Dummy	0.576184***	0.150361
R <sup>2</sup>	0.66	

*Source: calculations by the authors*

Note: \*, \*\*, \*\*\* represent the meaning level corresponding to 10%, 5% and 1%.

In the transitional model, public investment has a negative impact on the average income and growth speed of Nam Dinh province in the period 1999 - 2015. In this model, the advances in science and technology as well as the population hardly affect GDP per worker.

The above results show that in the period of 1999 - 2015, if GDP ratio increases by 10%, GDP/L will decrease by 2.8%; Conversely, if the rate of private investment increases by 10%, GDP/L will increase to 1.2% (no confidence at 5%).

- Impact of public investment on economic restructuring of Nam Dinh province.

In the period of 2000-2005, the fastest rate of change with coefficient  $Cos$  was 0.9772, the speed of economic transition of Nam Dinh is faster than that of the whole country. In the period of 2005 - 2010, and in the period of 2010 - 2015, the economic structure of the sector has slowed down compared to the previous period. The coefficient  $Cos$  of these two periods is 0.98640 and 0.98541 in turn. In the period of 2010 - 2015, the economic structure of Nam Dinh was slower than that of the whole country (coefficient of  $cos\phi$  of the whole country is 0.97669).

**Table 4. To restructure the Nam Dinh industry by coefficient  $Cos\phi$**

<b>Indicators</b>	<b>2000 - 2005</b>	<b>2005 - 2010</b>	<b>2010 - 2015</b>
Cos $\phi$ Nam Dinh	0,97720	0,98640	0,98541
Cos $\phi$ Vietnam	0,98673	0,99628	0,97669

*Source: Nam Dinh Statistical Office; General Statistics Office of Vietnam 2002, 2015 and calculated by the author*

### **3.2. Impact of public investment and private investment on society**

*Firstly*, impact on the unemployment rate of Nam Dinh. The correlation between public investment and the urban unemployment rate in Nam Dinh shows that, basically, when investment increases and jobs are created, the unemployment rate in urban areas will decrease. Specifically, in 2005, the scale of public investment was 3812263 million, corresponding to the urban unemployment rate was 4.94%. Similarly, in 2015, the scale of public investment was 537,997 million, corresponding to the rate of urban unemployment was only 2.97%. Of course, the rate of urban unemployment is also reduced by the private sector's job creation. Specifically, in the period 2005-2010, the coefficient of elasticity of public investment and urban unemployment in Nam Dinh was -0.417, while the coefficient of elasticity of private investment and urban unemployment of Nam Dinh was -0,489. That is, in Nam Dinh, when both increase up to 1% of investment, public investment helps reduce 0.417% of urban unemployment rate while the private sector helps reduce 0.489% of urban unemployment. In addition, if compared with the impact of public investment of the country, the impact on reducing the urban unemployment rate of public investment of Nam Dinh is weaker than the public investment of the country. In addition, the rate of underemployment in Nam Dinh tends to slow down compared to that in the Red River Delta and in comparison with the whole country. As of 2010, the unemployment rate in Nam Dinh was 5.98, the Red River Delta was 3.5 and the whole country was 3.57; By 2015, this ratio of Nam Dinh was down to 4.21, while the Red River Delta and the country reduced to only 1.6 and 1.89 respectively.

Secondly, the impact on poverty reduction. In the period from 2000 to 2015, if the policy is to increase the scale of INFRA investment by 1%, the poverty rate of Nam Dinh only decreases by 0.001519%, while the private sector helps to reduce 0., 0107%. Compared to the whole country, the Nam Dinh's public investment policy is better than that of the whole country, the coefficient of elasticity between public investment and the poverty rate of the whole country in the period of 2005 - 2015 is (- 0.000655%). Specifically, the elasticity between public investment and the poverty rate of Nam Dinh are shown in the following table 5

**Table 4: Elasticity of public investment and urban unemployment and Elasticity of public investment and poverty rate of the whole country, Vietnam and Nam Dinh province in the period 2005 - 2015**

	Vietnam	Nam Dinh
<b>Elasticity of public investment and poverty rate of the whole country</b>	- 0,000655	-0,001519
<b>Elasticity of public investment and urban unemployment</b>	-1,076	-0,417

*Source: Nam Dinh Statistical Office; General Statistics Office of Vietnam 2002, 2015 and calculated by the author*

#### **4. Discussion and Conclusion**

Economically, investment from the public and private sectors has different effects on growth, with private investment contributing more to growth than public investment. However, public investment in technical facilities and in people will increase the productivity of the private sector and thus benefit economic growth.

In fact, over the past few years, the direct contribution of public investment to the GDP of Nam Dinh province is relatively low compared to the whole country. At the same time, the ICOR of public investment in Nam Dinh is quite high. This shows that Nam Dinh's investment policy in the past few years has not been effective. Moreover, the impact of public investment on growth is very low in relation to private investment. Although public investment has had a positive impact on the sectoral economic restructuring of Nam Dinh province, this shift is slow compared to the whole country. Therefore, the public investment policy of Nam Dinh should further promote its leadership in the process of economic restructuring; "Investing bait" or facilitating the premise towards a modern and flexible economic structure to meet the demand of fast and sustainable development.

In terms of society, although public investment reduces the unemployment rate and the rate of poor households weaker than that of private investment, public investment accounts for a large proportion of total social investment. Therefore, in the coming time, public investment policy should directly concentrate on addressing issues such as poverty reduction, development of public investment programs to create jobs.

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# FACTORS AFFECTING ASSET INVESTMENT DECISIONS OF STATE-OWNED ENTERPRISES IN THE NORTHWEST OF VIET NAM

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## **Abstract:**

*Reality, State - owned enterprises in the Northwest of Viet Nam tend to invest more in width, but the investment decisions of enterprise's assets are not based on the profitability of capital or assets. The paper focuses on the factors that influence the investment decisions to assets of state-owned enterprises. The subjects in this study are from the provinces of the Northwest which are all similar in the level of regional economic development and technology manufacturing. Using data of state - owned enterprises in the Northwest from 2012 to 2015, apply linear regression techniques with the smallest minimum estimation model, but the data is aggregated as panel data, the authors find that assets investment decisions of state - owned enterprises in the Northwest depend on capital investment of state, sales and borrowing or appropriated capital in the business process.*

**Keywords:** *asset investment decision, influence factor, state-owned enterprises*

## **1. Introduction**

Asset acts as a labor resource in the business process. They are considered as material and technical facilities which play an important role in production and business activities, as a condition for enterprises to increase labor productivity and develop the national economy. On the micro perspective, machinery and equipment, manufacturing technology process... are the factors determining the size and production capacity of enterprises. On the macro perspective, physical and technical infrastructure will contribute to assessing the strength of the national economy (Karlsson et al., 2014). Exactly, it can be said that asset is very important for businesses.

In the recent 3 years, the rate of state-owned enterprises in localities went bankrupt and dissolved is quite high, in Son La, Dien Bien, Lai Chau and Hoa Binh province, it is about 20% of the total state-owned enterprises in local. This shows that business performance as well as their annual contribution to GDP is very low. Besides, these enterprises are facing serious difficulties such as lack of capital to invest, renew long-term assets, low productivity, lack of experience in marketing, investment decisions making.

Among these difficulties, the lack of financial resources and experience in asset investment decisions are the most serious problems. Investing in ineffective assets can have a big impact on profit and business results of enterprises. In contrast, investing in

effective assets will help businesses pass difficulties and increase profits. In fact, local SOEs are mostly small and medium size, which are difficult to get credits from commercial banks because the banks think that their profits are difficult to offset credit risk. Accordingly, how to use capital and make assets investment decisions effectively becomes more important for businesses.

Many enterprises, especially state-owned enterprises in the Northwest region also invest in assets but their profit is low and assets are used ineffectively. In particular, the long-term assets investment do not meet the requirements of large-scale production, high quality, automation and modernization. This is the reason why the production capacity of these enterprises is still low and business results is not high, expressed by the profitability coefficient of state-owned enterprises Northwest region in the period 2012 - 2014 only about 0.08 to 0.1. Therefore, clarify the factors that affect assets investment decisions, as well as clarify the relationship of these decisions with the business results of the enterprises is necessary in the current conditions.

This will really help managers in general and state-owned enterprises in the northwestern region in particular to perform the task of corporate finance effectively. At the same time, it is the basis for the State issue suitable policies, support enterprises to invest long-term assets as desired, achieve the target.

#### *\* Overview of previous studies*

The search for factors affecting asset investment is quite limited and many arguments. Previous studies (Jahera John et al., 1996); (Panda, Swati, 2012); (Lenka, 2014) mainly focus on identifying factors affecting capital structure which is an important resource for the development of enterprises. There are many studies that selected investment decision is the object of study, but the authors focus only on the factors that affect the investment decisions based on the theory of individual investment behavior, instead of studying the investment decisions of the business. For the asset of business which is a form of expression's capital, is considered in terms of: Improve effective use of assets (Brand Strategy, 2003), solutions for effective asset management (Moore Ron, 2006); asset depreciation method (O'Bannon Isaac, 2011) rather than factors affecting asset investment.

From different perspectives, there are many researchers who have studied the investment decisions of enterprises or general assets in enterprises. However, so far researchers rarely choose asset investment as the main object of their research. When previous studies investigated the process of investment decision making in general enterprise, they showed that investment decision is a process of many standards and many factors (Enoma and Mustapha, 2010). These factors include not only the economic and risk factors but also the political, social and government's regulations (Enoma and Mustapha, 2010). It means that there are many factors, both internal and external, that prevent the asset investment process, but they have not yet been fully and uniformly recognized. Therefore, an in-depth study of the factors affecting assets investment decisions is

necessary to help managers make investment decisions correctly, it contributes to ensure long-term and sustainable development of enterprises.

\* Factors affect on the assets investment decisions of the business

There are many factors that influence the assets investment decisions of business, there are direct factors, but also there are indirect and linear factors that affect the investment decisions. In addition, the nature and level of impact's factors are not the same. There are some positive factors that help businesses make more investment decisions while some factors negatively impact. However, the author focuses only on the following factors:

- Sales growth:

Eisner (1960) has shown that sale growth has the opposite effect on enterprise's investment decisions. It means that enterprises have higher sale, the less investment. In Vietnam, in 2008, Le Khuong Ninh et al. indicated that the investments of non-state enterprises also depend on the growth of sale and profitability. The larger the sales, the greater the demand for investment, and this is opposed to Eisner's theory (1960).

- Equity/ Owner's equity:

The study of Budina et al. (2000) confirms that the investment of small enterprises is more influenced by the equity than the large enterprises. When Budina et al. (2000) argued that equity positively correlated to the investment decision of the enterprise, it means that the more equity enterprise has, the more enterprise invests. But then, Gelos and Werner (2002) argued that equity negatively correlated.

In Vietnam, the regression model of Le Khuong Ninh et al. (2008) showed that the investment of non-state enterprises in Kien Giang depends largely on equity or the rate of profit last year divided by fixed assets next year and it is entirely consistent with the theory, consistent with the study of Budina et al. (2000). Meanwhile, the equity variable in the model of Le Bao Lam and Le Van Huong (2010) about investment decision of enterprises in Tien Giang province has a negative coefficient and statistical significance at level 5 % is consistent with the result of Gelos and Werner (2002).

- Debt payable:

Le Khuong Ninh et al. (2008) have been very successful in finding new factors when they research about the non-state sector in Kien Giang, these include: loans and ability to increase ground. The authors argued that the loan is also a factor positive influencing the investment decisions of these enterprises.

- Profitability of equity (ROE):

Profitability of equity (ROE) measures the profitability of each capital that invested by the owner. As a result, the higher ROE is, the better the equity is used. Le Bao Lam et al. (2010) confirmed that ROE does not affect on investment decisions of enterprises in Tien Giang province.

- Ownership of enterprise:

Besley (1995) suggested that the ownership of enterprise influenced the investment decisions of enterprises. In Vietnam, Le Bao Lam et al. (2010) also confirmed the positive

relationship of this factor with the investment decision of the enterprise. However, the subjects of Besley (1995) or Le Bao Lam et al (2010) are non-state enterprises, of which a large number of these enterprises are private that are very dynamic, flexible and they rarely lose investment opportunities. In comparison with other types of enterprises, private enterprises tend to invest more. Therefore, the authors suggest that the results of these studies should be do again for state-owned enterprises.

## 2. Method

### \* Data set:

According to the Business Law in 2014, SOEs are enterprises with 100% state capital. With this classification, the article uses secondary information as the annual financial reports in the period 2012-2015 in the Northwest, Viet Nam. There are 38 state-owned enterprises in Son La, Dien Bien, Lai Chau and Hoa Binh province of Northwest.

\* *Research Methods:* Use panel data with the support of Stata software. Especially, this study uses the least squares estimation model (OLS) but the data is synthesized as array for 4 years and the factors which to be studied were mainly the endogenous factors in the enterprise, they were collected from the characteristics and results from the actual production and business activities of state-owned enterprises in the Northwest region.

\* *Variables of the model:* The purpose of model is to detect factors that affect the asset investment decisions of the business. The research model has the form of the equation as follows:

$$TS_{it} = \beta_1 + \beta_2 dt_{it2} + \beta_3 dtvcsh_{it3} + \beta_4 dtnpt_{it4} + \beta_5 dtroe_{it5} + \beta_6 loaihinhdn_{it6} + u_{it} + \varepsilon_{it}$$

Where:  $i = 1, 2, \dots, n$  and  $t = 2012, \dots, 2015$ .

Dependent variables and independent variables are described in the table 1.

**Table 1. Description of variables**

Variables	Variable's name	Description
TS	Total assets	Total asset value, calculated at the end of year, target No. 270 on the balance sheet accounting
dt	Sales	Total sales value in each year, target No. 10 on the balance sheet accounting
dtvcsh	Equity	Equity at the end of the year minus the beginning of the year
dtnpt	Debt payable	Debt payable at the end of the year minus the beginning of the year
dtroe	Profitability of equity	ROE of the next year minus the previous year, ROE measured by the quotient of net profit after tax and equity value
loaihinhdn	Type of business	a dummy variable that equals one if the type of business is joint stock company (is classified according to Business Law in 2014), and zero otherwise.

*Source: Research by the authors*

### 3. Results

#### 3.1. Descriptive statistics of variables

In order to have a comprehensive understanding of factors on asset investment decisions, the general descriptive statistics of variables are shown in Table 2.

**Table 2. Descriptive statistics of variables**

Variable	Obs	Mean	Std.Dev.	Min	Max
<b>TS</b>	152	72.1	72.1	1.77	887
<b>dt</b>	152	31.0	33.8	0.0024	183
<b>dtnpt</b>	114	1.28	18.5	-57.5	153
<b>dtvsh</b>	114	13.3	61.5	-175	510
<b>dtroe</b>	114	-0.00037	0.138	-0.83	0.773
<b>loaihinhdn</b>	152	1.578947	0.4953601	1	2

*Source: Research by the authors*

Most of the variables in the model have a high difference between the highest value and the lowest value. The *total asset* variable represents the size of enterprises, with the smallest value was 1.77 billion VND and the largest value was 887 billion VND with an average value was 72.1 billion VND showing a big difference between samples. The *sale* variable represents the sales of enterprises each year, the average value was 31 billion VND, the lowest value was 239 VND and the highest was 183 billion VND. This variable represents the difference in sales between enterprises was quite large. The *Debt payable* variable reflects the ability of enterprises to borrow loans, the smallest value of variable was negative (-) while the highest value was up to 153 billion VND, it means that some enterprises had paid old debts without additional mobilization and some businesses still borrowed large amounts of capital. The *equity* variable shows the growth of equity over the years. The difference between the highest value and the lowest value of the variable is also great, it shows that every year there were enterprises that increased equity but there were also enterprises that have reduced equity. Equity decreased because business result was low, it made negative profit. The *Profitability of equity* variable reflected the increase in profitability from equity, the lowest value was -0.83 and the highest was 0.77, it showed that the profitability of some enterprises increased at a high level. But there were also businesses had low profitability. The *Type of business* variable received only 2 values of 1 and 0, corresponding to two popular types of state-owned enterprises in the Northwest: joint-stock company and limited liability company.

#### 3.2. Correlation analysis

This study uses correlation analysis to determine the correlation coefficients of the independent and dependent variables as well as the collinearity of the independent variables. First, Pearson's correlation analysis is to examine the correlation's variable and to avoid the problem of collinearity. As the results shown in table 3, the correlation coefficient matrix of the assets investment variables of state owned enterprises in the

Northwest is below 0.18. Correlation coefficients between variables are approaching to zero, it means that the independent variables in the model have no linear relationship with each other.

**Table 3. Correlation matrix**

	<b>dt</b>	<b>dtvcs</b>	<b>dtno</b>	<b>dtroe</b>	<b>loaihinhdn</b>
<b>dt</b>	1.0000				
<b>dtvcs</b>	-0.1103	1.0000			
<b>dtno</b>	-0.0708	-0.1778	1.0000		
<b>dtroe</b>	0.0540	-0.0114	0.0209	1.0000	
<b>loaihinhdn</b>	-0.1149	0.1829	-0.0493	0.0399	1.0000

*Source: Research by the authors*

Moreover, this study conducts a test on the VIFs (variance inflation factors) to examine the linearity of the independent variables, the results shown in table 4. The test results indicate that the VIF values for all the independent variables in this model are below 1.08. These coefficients are all around 1.01 to 1.08, indicating there is no collinearity problem.

**Table 4. Variance inflation factors**

<b>Variable</b>	<b>VIF</b>	<b>1/VIF</b>
<b>dtvcs</b>	1.08	0.926857
<b>loaihinhdn</b>	1.05	0.956872
<b>dtnpt</b>	1.04	0.958877
<b>dt</b>	1.03	0.968710
<b>dtroe</b>	1.01	0.994163
<b>Mean VIF</b>	1.04	

*Source: Research by the authors*

### **3.3. Empirical results**

Estimated results of the model are shown in the table 3.

According to F value testing, the regression model is statistically significant at 1%. This means that the explanatory variables in the model affect on the variability of the dependent variable. The independent variables in this model can explain 50.8% of variation in the dependent variable. The remaining variation of the dependent variable can be explained by other factors that the authors do not or no research.

Table 5 shows that the significance level of P-value (sig.) of Equity and Debts payable variables are less than 1% and Sale variable is less than 5%. Therefore, we conclude that these variables are significant in the model. The remaining variables: Profitability and Type of business are not statistically significant. That means that the

Equity, Debts payable and Sale are factors that influence the assets investment decisions of the enterprises. Specifically:

Sale variable: It has a positive coefficient and a statistical significance is 10%. This result contradicts Eisner's study (1960), but it is similar to Le Khuong Ninh's study (2008) in Vietnam. It means that the higher the sales of enterprises are, the more assets enterprises invest to expand the size.

**Table 5. Estimated results of the model**

Variables	Coefficients
Sales	0.6490652** (0.2803755)
Equity	1.625756*** (0.162144)
Debts payable	2.159756 *** (0.5301604)
Profitability	4.84e+09 (6.95e+10)
Type of business	1.29e+10 (1.98e+10)
Intercept	1.50e+10 (3.44e+10)
Standard errors are given in parentheses.	
Dependent variable: Total assets	
Observations: 152.	*p < 10%    **p < 5%    ***p < 1%
R <sup>2</sup> = 50,8%.	F(5, 108) = 22.30***

*Source: Research by the authors*

Equity variable: It has a positive coefficient and is statistically significant at 1%, this result is perfectly consistent with the theory. It is also consistent with result of Budina et al. (2000) that the higher the equity is, the more investment in assets business has. This result is consistent with the actual situation of state-owned enterprises in the Northwest, because these enterprises use state capital to invest, so the size of capital is not high and the ability to borrow is low, the demand for investment to expand the size of production and business mainly depends on the equity.

Debts payable variable: The regression coefficient of this variable is positive and is very large at 2.16. This shows that the impact of the loan amount and the debt on the investment of the business is very large. It is consistent with the result of research by Le Khuong Ninh et al. (2010), which means that the higher the debt is, the more investment in assets the state-owned enterprises in the Northwest have.

Research results show that the Debts payable and Equity are the factors influencing the investment decisions of enterprises. From this it can be seen that the demand for investing to expand the size of state-owned enterprise in the Northwest is very large, showing that whenever there is an opportunity to increase sale, equity or debt, these firms tend to invest more assets. This is perfectly suitable with actual situation in these areas, which are state-owned enterprises with small and medium sizes, so whenever they have the opportunity to increase the capital, they tend to invest in assets. However, the results of research can also confirm that businesses are focused on developing more width.

Variables have no meaning in the model: Type of business and Profitability are factors that have a low or no affection on the assets investment decisions of the firms. State-owned enterprises in the Northwest are joint-stock companies and one-member limited liability companies. The results show that whether they are joint stock companies or limited companies, the type of business does not affect the investment decisions of these firms. In addition, the profitability in general and the profitability of equity in particular does not have much affection on the assets investment decisions of the business because most of these businesses have low business performance, it makes indicator reflect the profitability is not high, so it does not affect the assets investment decisions of enterprises.

Thus, we can assume that the asset investment decision of state-owned enterprises does not depend on the type of enterprise and profitability of equity, but it depends on the amount of capital invested by the state, sales and loans or the capital that the enterprise is occupied in the business process..

#### **4. Conclusions and recommendations**

With a set of data on state-owned enterprises in the Northwest from 2012 to 2015, we used the regression model and were found that there were 3 statistically significant variables influence the assets investment decisions of these enterprises. All of 3 variables: Sale , Equity and Debts payable have the same relationship with assets investment decisions of enterprises. Apart from the three variables that are statistically significant and affect on the assets investment decision of the firms, other factors such as the Type of business and Profitability are not statistically significant, so there are little or no affection on the assets investment decisions of enterprises.

Based on the findings of the study, in order to improve the business performance of state-owned enterprises, to contribute to socio-economic development in the Northwest, the authors recommend some solutions as follows:

*\* For businesses:*

+ The results showed that the demand for asset investment of enterprises is very large while the capital is still limited. In order to mobilize capital for investment, enterprises need to be more active, actively approach and actively seek capital from different channels of capital mobilization, avoid depending on or waiting on state capital for investment.

+ The results also showed that state-owned enterprises in the Northwest of Viet Nam are focusing more on development in width, thus it is necessary to raise capital to meet the need for asset investment. However, in order for enterprises to develop sustainably in the future, enterprises should also pay attention to develop in depth.

+ For investment in assets, especially long-term assets, which are used for a long time, time to recover capital for a long time, so investment decision in long-term assets should depend on profitability of these assets.

\* *For local government:*

+ Create a transparent, flexible business environment and support enterprises in public services to help businesses save transaction costs and create opportunities for enterprises to invest in depth.

+ It is necessary to carry out regular surveys to collect comments, to capture the situation of production and business as well as the difficulties that enterprises are encountering. So that, there are grounds and orientation to build policies to support enterprises on time.

+ From the research results, we can be seen that the investment demand of enterprises in the Northwest are very large, showing that whenever there is opportunity to increase sale or equity and debt, enterprises tend to invest in more assets. Therefore, the assistance about investment capital for enterprises needs to be considered. However, in order to avoid inefficient investment, it is necessary to further assess the effectiveness of their capital use.

+ The results show that the past time, the credit system and local banks have met the capital demand for business operations. However, in order for businesses to increase their capital, it is necessary to further improve the performance of the credit system. The purpose is to help businesses reach deeper loans with reasonable costs and simple loan procedures.

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# ASSESSMENT LIVING STANDARD TOWARDS SUSTAINABLE FOR THE PROVINCIAL LEVEL IN VIETNAM

Tran Thi Thanh Ha

## Abstract

*Based on an overview of scientific works related to living standards of scholars in Vietnam and around the world, the author has studied the problem Assessment living standard towards sustainable for the provincial level in Vietnam. This article analyzes purposes and requirements; content; method; criteria for assessing the living standard towards sustainable for the provincial level. In particular, the author has proposed 6 indicators assessment living standard towards sustainable for the provincial level in Vietnam. This is a work that is both scientific and of great practical value.*

**Key words:** assessment; living standard towards sustainable; the provincial level.

## 1. Introduction

The study of living standards and their differentiation for have possible solutions to improve living standards has been a subject of much interest among researchers and countries. “Assessment living standard towards sustainable for the provincial level in Vietnam” is the problem I studied in this article for the following reasons:

Firstly, the study of this issue will contribute to clarifying the scientific and practical basis of the living standard assessment in order to improve the living standard of the population in a sustainable manner in the context of Vietnam.

Secondly, the issue of living standard assessment is not new. However, this issue is predominantly presented in studies and there are no specific and systematic studies on this issue. In particular, the issue *Assessment living standard towards sustainable for the provincial level in Vietnam* is new and no research has been mentioned. Therefore, this is a new research direction that contributes to comprehend the problem posed and has high practical value.

Thirdly, this issue of successful research will be a highly valuable research. In particular, the indicators recommended in this article are applicable to all provinces in Vietnam.

## 2. Method

This study mainly uses the secondary data analysis method, processing statistics based on available studies on living standards. The statistics are handled and analyzed carefully by the author. These are important proofs for the author's conclusions. The research also uses comparative methods to compare and evaluate research results, recommendations from reports compare to recommendations and solutions from state management agencies.

In addition, the author use the consultative methodology of experts and stakeholders: consult with experts, managers and people living in Son La province. This work helps the author to properly understand and understand the living standard of the province.

All of the above research methods are the foundation for the author to propose the contents *Assessment living standard towards sustainable for the provincial level in Vietnam*.

### **3. Results**

#### ***3.1. Purposes and requirements, contents, methods and criteria for assessing the living standard towards sustainable***

##### ***- Purposes and requirements:***

+ Evaluate the level of achievement and the level of change in living standards by quantitative criteria.

+ Comparison over years and compared with the object to match

+ Assess the causes of the living standard of the population.

##### ***- Contents***

+ Assessment living standard towards sustainable between urban and rural areas

+ Assessment living standard towards sustainable between difficult areas and the rest

+ Assessment living standard towards sustainable between population groups (group of rich, poor ...), the residential communities (districts, cities), ethnicity (among ethnic groups in the province).

##### ***- Criteria***

+ The living standard of the population is high or low

+ The living standard of the population is improved quickly or slowly

+ Is the living standard of the population sustainable?

##### ***- Methods***

+ Method of collecting and processing data, documents. This is the traditional method used in general research and socio-economic geography research in particular. Living standards research is complex, involving many aspects. Therefore, in order to serve the research of this topic, input data is taken from various sources, such as socio-economic development review reports, statistical yearbook, survey data population, population and housing census reports, articles and documents related to living standards. In order to achieve high results, the collected data and documents need to be processed and systematized in a scientific way.

+ Method of analysis, comparison, synthesis. Due to the lack of information on living standards in a province, the processing of documents, especially the data is rather complex. Therefore, from the sources of raw data collected, the author has processed, analyzed, synthesized, built new charts, maps and tables to draw the correct comments. In

the course of research, to allow a proper and complete assessment of the living standard of the population in the study area.

Using the results of document collection, field observations, and processing of information, in which the process of processing the document, a variety of traditional methods have been used such as: analysis, synthesis, statistics, comparative, etc.

+ Scoring method. Based on this method, the integrated living standard assessment of a province is relatively objective and comprehensive and sees a clear division.

The living standards of a province are differentiated by specific and spatial criteria, so in the analysis and evaluation process a point-based approach is required. The author will select the appropriate criteria, which clearly show the differentiation and characteristics of provincial living standard.

Then, build a rating scale: choose the rating, determine the level of each indicator and grade each grade. Each specific indicator is divided into five basic levels (high, quite high, medium, quite low and low) and have a specific rating scale with 5, 4, 3, 2, 1. Once the evaluation form has been prepared for each indicator, the author develops a consolidated scorecard of the indicators in the districts and cities of the province.

+ Methods of sociological investigation

Conducting field surveys and surveys is a necessary requirement in order to contribute to the verification of collected data and to identify “gaps” in the study to be supplemented in a timely manner in order to produce conclusions reliable.

The author takes the following steps: 1 - Determine the content of the investigation; 2- Build questionnaires; 3 - Conduct a planned survey; 4 - Handling of survey results.

+ Expert method. In order to get accurate estimates of the living standard of the province, it is necessary to directly seek opinions from managers, experts, some local officials in the fields of education, health, economics, social welfare, etc.

+ Map method, chart, GIS

"Geography and its work begin with the map and end with the map" (M. N. Bazanxki) - maps are important tools in geographic research. Therefore, in the process of research, based on the charts, maps of the province, statistics and based on the knowledge learned about GIS, Mapinfo software, SPSS, The author has developed maps of living standards to gain a more intuitive view of the issue. These methods give us an overview of the characteristics of the living standard and at the same time clearly reflect the scientific results of the work from a geographic perspective.

+ Principal Component Analysis - PCA. This is one of the simplest methods of analyzing data. In statistics, it is often necessary to "study" the data before constructing inference models based on that data. This method should be used in the research process when selecting the most representative indicators to compare living standards between localities of any province.

+ Forecasting method. Study on improving the living standards of the population towards sustainable need to use predictive methods for forecasting sustainability requirements for the future.

### ***3.2. Indicator for assessment of sustainable living standard for a province (a community)***

Inheriting the results of the review, based on theoretical issues and a review of the living standards of people living in Vietnam, the author identifies the indicator system for assessment living standard towards sustainable for the provincial level in Vietnam, namely:

**Table 1. Summary of indicators and criteria reflecting the sustainable living standard of a province**

<b>Criteria</b>	<b>Main indicators</b>
High-low	1. Per capita income 2- Accumulated rate vs. total income 3- The difference between 20% of the people with the highest income level compared to 20% of the people with the lowest income
Fast - slow	4- Structure of monthly or daily expenses 5- Proportion of solid houses 6- The rate of poor households (linked to poverty reduction)
Sustainable	+ Relatively stable increase for indicators 1,2,5 and decreased relatively stable for indicators 3, 6 + Change the spending structure (indicators 4) towards increasing the expenditure on meat, fish, fruit, education, health care and art culture.

*(Source: Author of the proposal)*

#### ***Per capita income***

- Per capita income is the rate of pay for labor received during a certain period of time (months or years) and is calculated in VND / month or VND / year.

- Also, can use average household income, that is the total amount of money and the value of the kind received by the household and household members during a certain period of time (usually one year), including:

+ Income from wages, salaries.

+ Income from agriculture, forestry and fishery production (minus cost and production tax).

+ Income from non-agricultural production

+ Others.

- Particularly should use additional indicator GRDP/person - This indicator is considered when assessing the living standard of the whole province (production site +

send from outside). These two indicators complement one another. The standard of living of a locality depends not only on local economic development, but also depends on assets elsewhere taken to.

The difference between GRDP/people - Per capita income to determine whether living standards are dependent on external factors.

#### ***Accumulated rate vs. total income***

This indicator has not been mentioned by scholars in the past. It demonstrates whether living standards are sustainable. Because if income only meets 70% of the minimum demand, it can not afford a sustainable standard of living (ie, expense exceeds income).

This indicator reflects the ability to accumulate from within the economy. If the ability to accumulate from within the economy, the greater the possibility of capital. The more likely the capital is, the more likely it is that capital will be injected into production. At the same time, production will increase as the number of employed workers increases, resulting in increased incomes, which leads to increased purchasing power, thereby boosting production.

If the difference between income and expenditure is negative, it means that there is no possibility of reproduction, which leads to living standard and life in the next cycle is likely, the trend is lower, more difficult.

From the difference between revenue and expenditure, authors calculate the cumulative ratio of income. The higher the cumulative income ratio, the higher the living standard.

#### ***The difference between 20% of the people with the highest income level compared to 20% of the people with the lowest income***

- Difference in average per capita income
- Difference in average living expenditure per capita

#### ***Structure of monthly or daily expenses***

This is an indicator that has been mentioned by some scholars but has not yet become a normative directive of the nation. This indicator has not been evaluated in depth, but it is only indicative of the survey parameters in the expenditure structure. The author sees this as a very important indicator, because through this indicator shows how living standards, how advanced the society, reaching the level of civilization.

Practical analysis (according to the Statistical Yearbook and living standard survey results), the authors found that: expenditure structure reflects vividly the life of a community.

**Table 2. Comparison of expenditure structure for life between two income groups of Vietnam in 2014**

Structure of expenditure (%)		Group 1	Group 5
<b><i>Eat, drink, smoke</i></b>	<b><i>Eat, drink, smoke in general</i></b>	<b>62,6</b>	<b>46,7</b>
	Food and foodstuff	49,1	29,6
	Fuel	4,4	1,8
	Drink and smoke	2,9	2,2
	Eating outside the home	6,3	13,2
<b><i>In addition to eat, drink, smoke</i></b>	<b><i>In addition to eat, drink, smoke in general</i></b>	<b>37,4</b>	<b>53,3</b>
	Clothing, hats, shoes	3,8	3,6
	Health care	6,3	4,7
	Housing, electricity, water, sanitation	3,7	7,8
	Equipment, household appliances	6,5	7,8
	Travel and communication	9,3	18,0
	Education	4,3	5,4
	Culture, sports, entertainment	0,1	2,0
	Expenses for other utilities and services	3,4	4,0
<b><i>Total</i></b>		<b>100</b>	<b>100</b>

(Source: Author Calculated Based on Viet Nam Household Living Standards Survey 2014)

According to the author, in the structure of expenditure of group 1, 62.6% spent on food, drinking and smoking and 37.4% were spent on all kinds of food, drink, entertainment, entertainment, etc.), the living standard of this group is very low.

In contrast, in the structure of expenditures in group 5, 46.7% spent on food, drink, and smoking and 53.3% spent on all other food, drink and smoking, show high living standards.

It is noteworthy that when comparing the component expenditures of two income groups, the authors find that:

In group eat, drink, smoke: all expenses (food, food, fuel, drinking and smoking) of group 1 were higher than group 5. Only out-of-home expenses were group 1 is much lower than group 5.

In group In addition to eat, drink, smoke only the expenses for clothing, hats, footwear and medical care were higher than group 5 (but little difference). Left, the other expenses of group 1 are far below group 5.

But in the structure of food, drink, smoking as the author mentioned above, mainly for food (food accounts for 70 - 80% of food expenditure), the rest is only 20-30% For meat, fish, sugar, milk,... the living standard is very low, and vice versa.

The analysis of the expenditure structure for food also demonstrates that: The higher the expenditure on food so expenditure on items that reflect high living standards (tea, coffee, ripe fruits, sugar, honey, milk, bread, jam, candy) will be lower.

**Table 3. Comparison of expenditures in expenditure structure for food and foodstuff between two income groups of Vietnam in 2014**

<b>Structure of expenditure (%)</b>	<b>Group 1</b>	<b>Group 5</b>
Rice	24,2	7,9
Meat of all kinds	22,2	21,1
Sugar, honey, milk, jam, sweets	5,4	8,0
Tea, coffee	1,4	1,6
Ripen fruits	2,7	5,2
Eating outside the home	11,0	29,8
Other foods and foodstuffs	33,1	26,4
<b>Total</b>	<b>100</b>	<b>100</b>

(Source: Author Calculated Based on Viet Nam Household Living Standards Survey 2014)

Based on the above analysis, the author affirm that the expenditure structure is a very important indicator for assessing the living standard of the population.

Thus, the indicator of this indicator is quite accurately reflects the living standard of a household or community. However, there are some expenses that do not reflect the living standard of the object. For example, if you have a family member who is sick, sick, or even seriously ill, you will lose a lot of money for medical treatment, leading to the cost of in addition to eat, drink, smoke will increase a lot. But in fact, their standard of living is not high, maybe even very low. Therefore, when analyzing specific objects, the author will analyze from the system perspective, thorough examination of all aspects of the object.

#### ***Proportion of solid houses***

This is the percentage of households currently living in solid houses in the total number of households surveyed. This is an indicator for community living standards.

According to Official Letter 134 / BXD-QLN of the Ministry of Construction dated 12/15/2015, criteria for housing classification of durable materials for three main structures:

- (1) Columns made of materials: reinforced concrete, brick / stone, iron / steel / durable wood;
- (2) Roof made of materials: reinforced concrete, tile (cement, terracotta);
- (3) Wall made of materials: reinforced concrete, brick / stone, wood / metal.

Depending on the actual local conditions, the housing components can be made of materials of equivalent quality.

Solid house is home to all three main structures are made of durable materials; semi-solid houses have two of the three main structures made of durable material.

***The rate of poor households (linked to poverty reduction)***

The poverty rate is an indicator for community living standards, which is the percentage of households with a real per capita income level is lower than the poverty line for the year determined in the total number of households. From 2015, on the basis of the five dimensions of poverty, the Ministry of Labor, Invalids and Social Affairs (MOLISA) has developed and proposed 10 indicators for measure the degree of deficiency.

**Table 4. Defining multi-dimensional poverty in Viet Nam**

<b>Poverty</b>	<b>Measurement index</b>	<b>Level of deficiency</b>
<b>1) Education</b>	<b>1.1 Adult education level</b>	Households with at least one full 15-year-old child born back to 1986 do not graduate from high school and are not attending school.
	<b>1.2 School attendance of children</b>	Households with at least one school-age child (5-14 years old) are not attending school
<b>2) Health</b>	<b>2.1 Access to health services</b>	Households have sick people who do not go for medical treatment (sickness is determined to be sick / traumatized to the point where they have to stay in one place and must have someone who takes care of their bed or does not attend school. Normal activities)
	<b>2.2 Health Insurance</b>	Households with at least 1 member age 6 and over do not currently have health insurance
<b>3) Housing</b>	<b>3.1. Quality housing</b>	Households are indoors or indoors (The house is divided into four levels: solid, semi-permanent, semi-permanent, simple house)
	<b>3.2 Housing area per capita</b>	Housing area per capita of less than 8m households <sup>2</sup>
<b>4) Living conditions</b>	<b>4.1 Water source</b>	Households do not have access to clean water
	<b>4.2. Toilet / Toilet</b>	Households do not use hygienic latrines / toilets
<b>5) Access to information</b>	<b>5.1 Use of telecommunications services</b>	Households have no members using telephone and internet subscribers
	<b>5.2 Property access to information</b>	Households do not have any of the assets: TVs, radios, computers; And not hear the loudspeaker system of the village radio station

(Source: [2])

According to Decision No.59/2015 / QD-TTg<sup>1</sup>, poverty line for 5 years (period 2016-2020) includes people with incomes below 700,000 VND / person / month in rural areas and 900,000 VND / person / month city.

<sup>1</sup> Decision No. 59/2015 / QD-TTg on the application of the poverty level for the period 2016-2020

Or households with a per capita income of more than VND 700,000 to VND 1,000,000 per month and a shortage of 03 indicators that measure access to basic social services (Rural area).

Or households with per capita income per month over 900,000 VND to 1,300,000 VND and shortage of 03 indicators of access to basic social services (Urban areas).

The above indicators reflect the sustainable living standard of a province and which must be compared to the regional average or the national average or to a province that has achieved a higher standard of living to see the sustainable living standard of the province.

**Table 5. Comparison of living standards of the study province compared to other subjects**

<i>Chỉ tiêu so sánh</i>	<i>Absolute value of the study province</i>	<i>Study province compared to the national average *</i>	<i>Study province compared than larger regional average *</i>	<i>Study province compared to the highest living standard of one province in the region *</i>
1. Per capita income (thousand dong)				
2. Accumulated rate vs. total income (%)				
3. The difference between 20% of the people with the highest income level compared to 20% of the people with the lowest income (times)				
4. Structure of monthly or daily expenses (%) - The proportion of expenditure for food, drink, smoking - The proportion of expenditure not eat, drink, smoke				
5. Proportion of solid houses (%)				
6. The rate of poor households (linked to poverty reduction) (%)				

*(Source: Author of the proposal)*

*Note: \* in percentage or by times*

In addition to the indicators mentioned above, other indicators may be used when statistics are available, such as the number of years of schooling for people in the school age; KWh power consumption per person; number of people using clean water; happy index, etc.

#### **4. Discussion and Conclusion**

##### **4.1. Discussion**

In the case of living standards of an individual or a household, The author argues that the use of indicator systems is somewhat different from that of a community or province. Specifically, the indicators are:

- (1). GDP / person (Income/person)
- (2). Difference between income and expenditure
- (3). Structure of monthly or daily expenses
- (4). The area of housing per capita (or type of housing)
- (5). Average power usage per capita
- (6). Number of years of schooling per person

#### **4.2. Conclusion**

In fact, there have been many surveys and studies on living standards in the world and in Vietnam. The issue is to develop a set of criteria for assessing the living standard of the population at the provincial level in the Vietnamese context and to be sustainable in order to succeed in the coming years. In the article, the author analyzes the purpose, requirements, criteria and methods of assessing the living standard of the population in the direction of sustainability. At the same time, the author proposes six basic criteria for assessing living standard towards sustainable for the provincial level in Vietnam. The results of this study, if applied in practice, will play an active role in creating the basis for planning policies for economic development and social security and raising the standard of living for the population.

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# INDUSTRIAL DEVELOPMENT AND ENVIRONMENTAL PROTECTION AT QUANG NINH PROVINCE

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## ***Abstract***

*Industrial sectors have been playing a key role in socio-economic development and making an important contribution to the increase of GDP and state budget revenues of the Quang Ninh province, however, they have caused the most serious environmental pollution. Therefore, the balance of industrial development and environmental protection is more and more necessary. Through doing a research on the reality of industrial development and environmental protection of the Quang Binh province in 2010-2017, this article clarifies achievements and limitations as well as their root causes in order to find solutions for these issues and for the provincial industrial manufactures; and to make several proposals for the Government, Ministries and Branches in the locality.*

**Keywords:** *industrial development at Quang Ninh province; environmental protection in Quang Ninh; Reality and Solutions.*

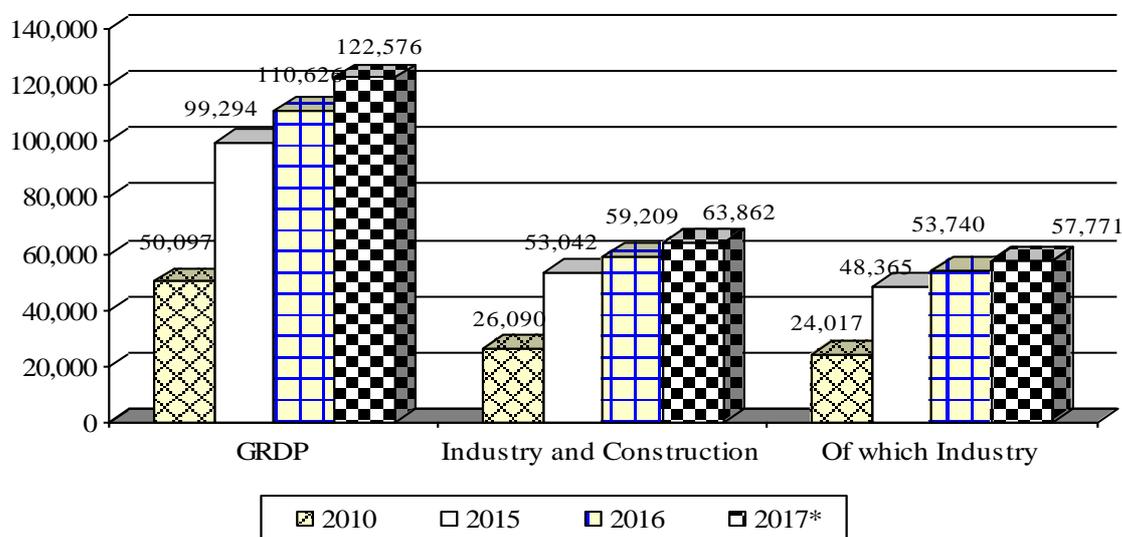
## **1. Reality of industrial development at Quang Ninh province**

The study of industrial development at the Quang Ninh province from 2010 to 2017 shows the following realities:

Frist, due to the different miniral resources, Quang Ninh's industrial sectors are diverse and have had a stable growth. GRDP (Gross Regional Domestic Product) by industry of Quang Ninh in 2016 was 2.27 times higher than that in 2010, making a reasonable economic structure for the province. In its 2017 economic structure, agriculture accounted for 6.7% while industry, construction accounted for 52.1% and services accounted for 41.2%.

**Figure 1.1: GRDP (Gross Regional Domestic Product) by industry of Quang Ninh 2010-2017 at current prices**

*Unit: VND Billion*



*Source: Quang Ninh Statistical Office 2017: Quang Ninh Statistical Yearbook 2016, page 43, 2017 \*: estimated figures.*

*Second*, the provincial industry has an attempt to be independent from coal mining and has various sectors. Key products of the province in 2016 included coal (38,671 million tons; cement (3.65 million tons); vegetable oil (253,000 tons); electricity (25,473 million kilowatt-hours); running water (45,352 million m<sup>3</sup>); textile fibres (201,975 tons); frozen aquatic products (1,815 tons); flour (318,000 tons); fish sauce (1,065 million litres); beer (26,203 million litres); mineral water (83.7 million litres). These are goods used for production and essential consumption of people.

*Third*, in the structure of investment capital for industrial production development of the province, state capital decreased from 59.6% in 2010 to 39.6% in 2016 while non-state capital slightly increased from 35.2% to 40.8% and foreign direct capital increased from 5.2% to 19.6% (1, 73)

*Fourth*, there are just a small number of FDI projects in Quang Ninh. The total amount of FDI capital into the province, which has just slightly increased since 2010, is not much. From 1988 to 2016, there were 124 projects, with a total committed capital of 6,215.9 million USD and a total disbursed capital of 4,403.3 million USD. The FDI capital into the province was distributed to such sectors as fertilizer production, manufacturing industry, lodging service, construction and other sectors. (1, 84-85)

*Fifth*, there are just a small number of enterprises operating in the province (2,768 enterprises in 2010 and 4,541 enterprises in 2015). In terms of structure, state-owned enterprises increased slightly in absolute terms, from 90 to 94, but decreased in relative terms, from 3.3% to 2.1% in 2015. The non-state enterprises went up from 2,635 to 4,392

in absolute terms; and increased from 95.2% to 96.7% in relative terms. In absolute terms, foreign enterprises increased from 43 to 55 but decreased in relative terms from 1.6% to 1.2% (1, 102-107). According to the Department of Planning and Investment, up to November 2017, the total number of registered enterprises and their dependent units in the province was 14,900 with a total registered capital of 147, 990 billion VND (9.93 billion VND per enterprise on average).

*Sixth*, the number of waste collection enterprises in the province is very low. In 2015, there was only one drainage and wastewater solution enterprise with fewer than 100 employees. Besides, there were just 22 waste collecting, processing and recycling enterprises, out of which 17 enterprises had fewer than 100 employees. The fixed asset value per drainage and wastewater solution enterprise in 2015 was 40 million VND while the total fixed asset value of all the waste and pollution management enterprises was 467 million VND. This figure was so inconsiderable that the service quality and the operational efficiency of these enterprises were not good enough. (1, 111)

*Seventh*, according to the approved planning, the Quang Ninh industrial establishment system consists of 11 industrial zones, 19 industrial clusters, one coastal economic zone (Van Don), and three border-gate economic zones (Mong Cai, Hoanh MO - Dong Van and Bac Phong Sinh). The provincial enterprises are distributed uneven, located mainly in such areas as Ha Long city, Cam Pha city, Mong Cai city and Dong Trieu town. The number of enterprises in the northeastern districts of the province such as Ba Che, Dam Ha, Tien Yen is small. (1,107).

## **2. Reality of environmental protection in Quang Ninh**

### **2.1. Achievements**

*First*, due to the early awareness of the important role of environmental protection in economic development, the activities of environmental management and protection in the province have been well organized.

Quang Ninh is the province having the largest coal resource in Vietnam with a total reserve of 8.8 billion tonnes. The coal mining industry provides fuel for electricity generation and energy for other industries; enabling to develop the provincial economy, to create jobs for the locals and to make key state budget revenues for the province. In 2017, coal production reached 36.33 million tons, accounting for 46.9% of the domestic budget revenue. However, this industry caused the most serious environmental pollution. Being aware of the impact of environmental protection on stable economic development, at the beginning of 2010, the provincial standing committee issued Directive No. 30-CT/TU dated September 7, 2010 on enhancing the leadership and guiding the environmental management and protection in the province. The Quang Ninh Provincial People's Committee issued Resolution No. 32/2010/NQ-HĐND dated December 10, 2010 on environmental management and protection in the province, stating "The Provincial People's Committee has issued many documents for guiding and implementing a lot of environmental protection measures, thus the awareness of the environmental protection of

all levels, branches, localities, people and enterprises has been raised”. Therefore, the activities of environmental management and protection in the province have changed dramatically. (3, article 1).

*Second*, the legal document system has been developed and completed as a basis for the environmental management and protection in the province.

The legal document system of environmental management and protection in the province has been updated and improved continually. Therefore, Quang Ninh is one of the provinces having enough the legal document system and guidance documents of environmental state management early. (4,1-2)

*Third*, the province has actively cooperated with the coal industry and electricity industry, step by step resolving issues of environmental pollution caused by the coal mining and production system and the electricity generation system in the past; for example, removing factories from residential areas and separating the coal transport system from public passenger transport in order to minimize the impact of pollution on the people's life.

*Fourth*, science and technology have been applied to production. Besides, the norms relating to the local environmental protection have been issued, forming the basic for inspecting and controlling the environmental pollution.

*Fifth*, economic zones, industrial parks and clusters, border-gate economic zones and their management boards have been established to manage the local industrial manufacturing units.

*Sixth*, the province has organized dissemination of environmental protection for local people in residential areas and enterprises in industrial parks, and drawn investment into this activity.

*Seventh*, in recent years, Quang Ninh has been implementing administrative reforms, placing emphasis on the improvement of business environment and natural environment. The province has also been a pioneer in evaluation and ranking the economic management of the provincial departments, agencies and branches for enterprises with DDCI Index. Therefore, the regulations on state management of environmental protection are disseminated quickly and conveniently.

## **2.2 Limitations**

*First*, “Overcoming environmental pollution caused by coal mining and construction material production has been inefficient” (2,2)

Coal mining and screening is the largest source of emissions in the province, accounting for 79.0% of the total emission amount in 2015 and 68.8% of the total emission amount by 2020. Two other major sources of emissions which are energy production and consumption, cement production tend to increase rapidly in the coming period. Wastewater from coal mining sites runs off on the surface. Coal transportation inside and outside the mine, on the routes to factories; and operation of thermal power plants cause air pollution

and increase the level of dust in the environment. Wastewater from thermal power plants with high temperatures (above 40°C), which is not cooled, will negatively affect the natural ecosystems around them. (6; 63-64)

*Second*, coal mining has a negative impact on the health of the residents around the area. The dust level in coal mines and dumps is higher than the standard many times. High dust concentrations can cause serious lung diseases.

*Third*, coal mining sector causes bad effects on the current tourist attractions and the surrounding landscapes, preventing tourism development.

*Fourth*, in some industrial parks and clusters of the province, due to unsynchronized technical infrastructure and limited management, wastewater collecting and processing do not meet the requirements. Furthermore, because of the uninterrupted traffic flow of heavy goods vehicles in some industrial parks, up to now, many construction items have been seriously degraded.

*Fifth*, the funding for environmental protection in economic zones, industrial parks and clusters is limited; so the province has not mobilized the active participation of production and business units, communities and society.

*Sixth*, the quantity and quality of the environmental management tools are inadequate, especially in remote areas. There have not been synchronous database system and automatic environmental monitoring system yet. The funding for the management activities of the provincial environmental protection at the industrial parks and clusters, for example, sampling of wastewater and exhaust fumes, has been limited.

*Seventh*, some enterprises' awareness of complying with state regulations of environmental protection has been low.

### ***2.3. Causes of limitations***

*Objectively*, Quang Ninh has the potential for developing the coal industry, electricity industry and construction material industry. The province also has a great potential for developing trade, investment and tourism. However, the development of one sector will make negative or positive influence on other sectors in the locality. The provincial economic structure is depending on the industrial sectors causing the most serious pollution, affecting badly the stable economic growth.

The management mechanism and autonomy of localities had a great impact on the environmental protection in the past. Coal mining and developing thermal power and construction material sectors in the province depended too much on the development planning and implementation of ministries and branches at the central level. The province only had authority in local management.

*Subjectively*, the awareness, thinking, vision and behavior of state agencies at all levels in economic development and environmental protection are the most important things. The mechanism, policies and short-term, inconsistent thinking of the generations of local leaders have great impact on industrial development and environmental protection in the province.

### **3. Solutions for industrial development and environmental protection in Quang Ninh**

#### ***3.1. Solutions for Quang Ninh province***

*Frist*, it is necessary to identify the strategic vision for socio-economic development, industrial development and environmental protection in accordance with the specific time and conditions of the province.

The current economic structure of Quang Ninh is highly dependent on the economic sectors that have a negative impact on the environment. Therefore, the objective of developing industries is to reduce immediately pollution at the locality. It is also the main objective of environmental protection. The Executive Board of the Provincial Party Committee has chosen the 2018 activity theme as “Protecting and improving the quality of the natural environment”. In the medium term, strict regulations and requirements for environmental protection should be applied. The vision to 2030 must be “Gradually shifting the structure of economy from ‘brown’ activities to ‘green’ activities, giving priorities to develop service sector and non-mining industries, at the same time, ensuring coal mining operations cleaner and more sustainable” (5, 1).

*Second*, the province must choose the strategies of industrial development and environmental protection that are shifted from “brown” growth to “green” growth. For a long time, the development of the provincial economy has been largely due to the coal mining sector, construction materials industry and electricity generation industry, which is called “brown growth”. At the present, it is necessary to shift to “green growth”, which means developing such key industries as clean industries, supporting industries, processing industries and hi-tech industries which are more environmentally friendly; so the province will not have to choose between marine life and the steelmaking industry as the situation happened at the Formosa industrial park of Ha Tinh.

*Third*, environmental management and protection must be a process of long-term, continuous and synchronous efforts which are made in the direction of placing emphasis on prevention - strictly controlling - actively overcoming the adverse effects of pollution.

*The province must give priorities to prevention of pollution* by such measures as making an overall assessment for the impact of investment projects on the environment; selecting advanced technology when reviewing projects, complying the promulgated steps and standards for new projects without lowering environmental barriers to attract the investment at any cost. Besides, criteria should be completed and added to form the basis for approving the investment projects; so the danger of environmental pollution can be avoided. It is also necessary to develop and issue a set of local environmental standards to implement the roadmap of applying environmental standards of developed countries by 2020.

Strictly control the environmental impact assessment and strengthen the supervision and control of the implementation of the commitments of the projects. Establish a system of automatic environmental monitoring in the province to regularly grasp the situation and take measures to handle in time. Carry out environmental pollution control activities based

on new standards. To sanction enterprises and units that violate environmental regulations. To review and supplement the strong sanctions to strictly handle environmental violations.

It is essential to strictly control the environmental impact assessment and to increase the supervision of implementing the project commitments. Moreover, the province must establish a system of automatic environmental monitoring to regularly follow the situation so that they will have any necessary measures to handle it punctually. In addition, they should carry out environmental pollution control activities based on new standards. The enterprises or business units that violate the regulations must be imposed penalties.

*The consequences of environmental pollution and degradation in the past must be resolved.* Quang Ninh needs to actively study and to have each overall environmental evaluation for the coal industry, electricity industry and construction materials industry to resolve the pollution caused by soil erosion, sedimentation from watershed areas of rivers and streams. The province also needs to increase the investment in improving the environmental landscape, the water quality of rivers and streams flowing through residential areas which are affected heavily by dust, emission and wastewater from coal mining, electricity generation and construction materials production.

*Fourthly*, it is necessary to have a complete planning for industrial parks and clusters to classify the environment according to the level of each type of zone: conservation zone; positive environmental management zone; environmental improvement, rehabilitation zone and environmental development zone.

*Fifth*, it is essential to apply the achievements of science and technology, especially high technology and advanced environmental protection models of developed countries to the environmental protection and sustainable industrial development at the province. Furthermore, it is important to study, apply, transfer clean and environmentally friendly technologies as well as cleaner manufacturing models in the mineral mining and processing. Besides, waste treatment and recycling technologies must also be developed.

*Sixth*, there must be an investment in the construction of technical infrastructure at industrial parks and clusters to ensure that wastewater collection and treatment systems must be established before they come into operation.

### ***3.2. Solutions for production and business entities in the province***

After all, production and business entities in the province have direct duties towards industrial development and environmental protection. These enterprises need to step by step apply advanced technology to production in order to save resources as well as protect the environment. They also must implement more effective waste management solutions to minimize negative impacts on the environment according to the 3R approach: Reduce-Reuse-Recycle.

The enterprises manufacturing and exploiting minerals, especially coal, need to comply with the standard progress of production projects and to improve the environment badly affected by the coal exploitation, processing, transportation and consumption. They should actively expand their production capacity by using more advanced technology,

diversify higher-value products and have better waste management to boost their competitiveness on the market.

### **3.3. Proposals for related agencies**

*First*, the Government, Ministries and branches should have a mechanism to combine the content of socio-economic development with environmental protection at localities. They should also have appropriate policies to encourage production and business entities in fully complying with regulations on environmental protection and clean technology.

*Second*, it is important to strengthen the capacity of state environmental agencies in building up a streamlined, appropriate and efficient environmental management apparatus; in planning, monitoring and reviewing the Green Growth Strategy; in evaluating and monitoring impacts on the environment to ensure the harmony between environmental protection and economic development; in inspecting and handling environmental law violations. Besides, information about these violations of individuals, organizations and enterprises must be publicized on mass media in order to create public opinion and social pressures.

*Third*, the coal and electricity industries must actively cooperate with the province to implement plans of relocating manufacturing facilities out of residential areas; to overcome the consequences of air, water and soil pollution; and to ensure a healthy life.

*Fourth*, it is essential to boost the education and dissemination of the law on environmental protection and biodiversity in order to raise the awareness and responsibility of people, organizations and enterprises. Moreover, it is necessary to promote the supervision role of communities to strongly condemn the environmental law violations.

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# PROBLEMS OF SEA FISHING IN RANONG PROVINCE, THAILAND

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## **Abstract**

*This article has the objective of analyzing the problems of sea fishing in Ranong province, Thailand. All documents used in this article are from literature review. Ranong province is located in the upper part of southern Thailand, on the Andaman Sea, so the area is considered as being exceptional for sea fishing. Analysis of the many documents regarding the problems of sea fishing in Ranong revealed many issues. The government has tried to resolve the problems, without success, due to the complexity of the issues regarding the public management of sea fishing. This paper presents a collaborative governance concept in order to resolve this problem with the involvement of all stakeholders. Thailand's Fishing Act. of 2015 AD sets a good trend for the future as it contains regulations concerning collaborative governance of sea fishing.*

**Keywords:** Sea Fishing, Ranong Province, Collaborative Governance

## **1. Importance of Fisheries in Thailand**

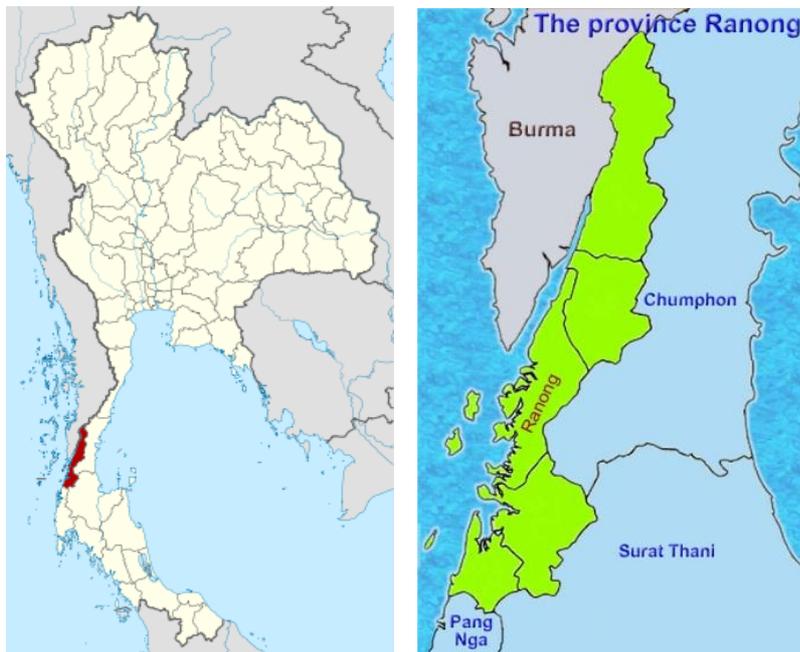
Thailand has a total of 23 coastal areas, including 6 provinces on the Andaman coast and 17 provinces on the Gulf coast. The coastline is 2,942.35 km in length. Fisheries, especially sea fishing, have been around for a long time. During the First National Economic Development Plan (1961-1966), Thailand was supported by foreigners in obtaining advanced fishing gear and technologies. Thailand's fisheries were becoming more modern in terms of commercial fisheries and increasingly important. According to the National Economic and Social Development Plan, No. 6 (1987-1991), the Thai fisheries sector had a high level of fishery production, and ranked as one of the top ten in the world. In 2014, the value of fisheries was calculated to account for 8 percent of Thai agriculture GDP. Total output of fisheries in Thailand totaled 2.56 million tons, 1.67 million tons (65%) from fishing and 0.89 million tons (35%) from cultured fish. The caught fish value was 1,938 million USD (43 percent) and the cultured fish value was 2,745.33 million USD (57%). The total value of fish exports in 2016 was 6,873.94 million USD.

Thailand's major export markets include the United States, Japan, the European Union, and ASEAN (Department of Fisheries, 2017, 3-4). Thailand's fisheries are important as a source of food security for more than 2,500 local fishing communities

around the coast. It is an important part of the economy as fishery products are exported, bringing in foreign currency for the country. Furthermore, the fishing industry is also a strong source of employment, since there are about 172,430 fishermen (82% foreigners) employed, and about 515,000 people are employed in related industries, most of whom are women. These industries include: aquatic animal processing, shipbuilding, canned and frozen fish products and fish meal production (Department of Fisheries, 2015).

## 2. Geography of Sea Fisheries in Ranong Province

Ranong Province is a major fishery area of Thailand and is located in the Upper South, about 568 km from Bangkok. The area covers about 3,324.60 square km, or about 2,141,250 rai, (4.7 percent of the southern region). It is the 11th largest province in the South and the 60th largest in the country.



**Fig.1 Ranong province maps**

*Source: <https://th.wikipedia.org/>*

### Topography

- North and East adjacent to Chumphon Province
- South adjacent to Phang Nga and Surat Thani Provinces.
- West adjacent to Kho Song island, Republic of the Union of Myanmar and the Andaman Sea

The geography of the province's fisheries is that it is located on the upper Andaman Sea, bordered by the Republic of the Union of Myanmar, where the Khmer River provides the border. The coastline is about 151 km long, which is divided into two parts: 93 km long, and 58 km long. Because the boundary line between Thailand and the Republic of the Union of Myanmar slopes down at about 45 degrees to Thailand, the fishing area in Ranong Province is quite limited, it is only about 1,377 square km. Although Ranong

Province has a limited fishing area, it is able to produce the most abundant fishing when compared to the various provinces bordering the Andaman Sea. This is due to the fact that there is not only sea fishing in the Ranong Province and neighbouring areas, but there are also sea creatures from the Republic of the Union of Myanmar (Ranong Fisheries Provincial Office, 2013, 34)

### 3. Importance of fishery in Ranong Province

The top five production structures in Ranong Province are: Agriculture, Fisheries, Wholesale-Retail, Repairing motor vehicles and households, Logistics and Industry. The fishing industry ranks second in the production structure, at 21 percent. (Ranong Statistical Provincial Office, 2014, 1-4). The annual Provincial Gross Domestic Product and the production values of the fishery sector in Ranong Province are as follows.

**Table 1. Gross Provincial Product at Ranong Province's Fisheries Production Value**

*Million USD*

Year	2008	2009r	2010r	2011r	2012r	2013r	2014r	2015p
<b>GPP</b>	19,970	19,884	21,568	22,221	22,674	22,854	23,558	23,250
<b>Fisheries Production Value</b>	147.87	142.58	136.27	164.76	135.27	126.62	133.13	122.27

*Note: r is derived from real term with inflation adjusted.*

*Source: Office of The National Economic and Social Department Board, 2017, 102.*

Fishery production activities in Ranong Province provide values as follows.

1) The fishery of aquatic animals landed in Ranong Province. As mentioned, Ranong Province has limited fishing areas but has the most abundant fish when comparing to various provinces by the Andaman Sea due to the fact that the fishing area is located in Ranong Province *and* neighbouring areas. There are also aquatic animals caught in the Republic of the Union of Myanmar. The value of the aquatic animals in the port of Ranong Province is therefore as follows.

**Table 2. Important statistics of Ranong Province fishing harbour 2012-2016**

Year	Quantity of aquatic animals (metric tons)	value (USD million)	Transportation (round)		
			Import		Export Car
			Boat	Car	
2012	31,521	59,260,663.56	2,535	-	2,958
2013	27,307	49,342,513.19	2,449	-	3,090
2014	24,186	40,013,643.08	2,212	-	3,079
2015	22,679	32,259,326.13	2,076	-	2,880
2016	21,167	33,408,261.03	2,720	-	3,387

*Source: Bureau of Monitoring and Evaluation, Fish Marketing Organization, 2016, 84*

Just 10% of the docked aquatic animals will be consumed in the province. The rest will be exported to foreign countries as follows:

-Export through Hat Yai to Malaysia and Singapore, about 1 in 4 fish from Ranong Province. Small fish are sent to four fish processing factories, which produce 24 tons per day.

- Import to the Bangkok Fish Market. In 2016, it was found that more than half of the aquatic animals (50.35%) came from Ranong Province, which was much higher than from other provinces. It was not only in 2016 that the fresh sea aquatic animals from Ranong Province were brought to the Bangkok's fish market, more than other provinces. When viewing data for the past 5 years, it was found that fresh aquatic animals from Ranong Province were brought to the Bangkok fish market, more than from any other provinces, and that trend is increasing every year. These aquatic animals were auctioned to 3 different sources: 1) Buyers, i.e.; buyers in Bangkok sub-markets and other provinces including cold rooms. Most aquatic animal products were distributed by over 92.42% buyers. 2) Processing and exporting abroad and 3) others

2) Coastal aquaculture such as white shrimp, white snapper, white bass, scallop and mussel- Due to the abundance of natural aquatic animals in the waters, competition in fishery is quite high, and fishermen come from a variety of areas.

3) Seafood production figures in 2011 revealed that the production of frozen seafood in Ranong Province was expanding. This is the income from the operator, declared for tax, in the industry. Sea food production increased from 204.85 million USD in 2009 to 261 million USD in 2010, representing a rise of 22.5% due to the increasing demand from overseas markets due to the recovery of the global economy. The sea food production potential of Ranong Province is considered as the main source of fishery resources of the Andaman coast, which has high potential for seafood production. Ranong Province also has many advantages regarding labour and low wages. (Ranong Fisheries Provincial Office, 2013)

The activities and production value of the fishery sector came from 2,430 fishing households in the province, including 2,143 households engaged in fishing alone, 151 households were engaged in coastal and 136 households were engaged in coastal offshore fishing. (Department of Fisheries Policy and Strategy, 2017, 80) In December 2017 Thailand had 37,049 migrant workers who were working legally, of which 35,643 were able to prove their nationality. (Foreign Workers Administration Office, 2017) Most of these migrants work in the fisheries sector, where there is a shortage of workers in Thailand.

#### **4. Problems of Fishery in Ranong Province**

Although fishery in Ranong Province, especially commercial fishery, can create economic value and income for the country, there are still several issues. The Ranong Fisheries Provincial Office (2013, 56) disclosed the problems of fisheries in the province, such as conflicts between local fisheries and commercial fishing, the problem of illegal fishing using illegal tools, such as using trawl nets, anchovy fishing in restricted areas, fishermen lacking awareness, overlapping fisheries, neighbouring fisheries, etc.

In general, the fisheries resources have been exploited for a long time. This has resulted in degradation and over fishing. The production capacity of the resource,

preventing over fishing, is based on the MSY value, which is the optimal value of fishing when compared to actual fishing and the value of the aquatic species integrity. Also, the main problem comes from commercial fishing vessels using nets that are smaller mesh than the smaller fishing boats. This has the potential to destroy the enormous resources. The problems of fishery in important areas such as Ranong Province are consistent with the problems of fisheries in the country, overall.

Over Fishing in Thailand began in 1991. The government is trying to solve the problem by setting public policy as a guideline for responding to the problems that arise (Supachai Yawapan, 2009, 3). The 7th National Economic and Social Development Plan (1992-1996) illustrated awareness of the deterioration of fishery resources; such as by setting up regulations regarding boat control and creating a 'master plan' for fisheries management at the local level, set to get the highest return, etc.

The 9th edition of the National Economic and Social Development Plan (2002-2006) enacted the repeal of fishing gear that destroyed coastal ecosystems. However, on 21 April 2015, the European Union issued a 'yellow card' to warn Thailand against illegal fishing which was referred to as 'Illegal Unreported and Unregulated Fishing' (IUU Fishing). The alert is raised when a fishery destroys the marine resources, it is a great threat to sustainable fishing, and violates conservation measures undertaken in conjunction with other countries or is in violation of international law ratified by the United Nations Food and Agriculture Organization (FAO). If Thailand doesn't provide an acceptable solution urgently, the EU may take measures to halt the import of fishery products from Thailand. The government has set up a management plan for marine fisheries in Thailand, the National Policy for Marine Fisheries Management, 2015-2019, which is not intended to address the IUU fishing issue in isolation, but also has other objectives as:

- 1) Reduction of the fishing potential and fishing effort.
- 2) Restoration of aquatic resources by planting artificial reefs and aquaculture.
- 3) Reduction of IUU fishery through effective monitoring and control measures.
- 4) Reduction of the catches of the species of economic importance.
- 5) Conflict resolution between local and commercial fisheries.
- 6) Restoration and maintenance of aquatic habitats.
- 7) An update of fisheries information
- 8) Strengthening fishery management

According to the plan, commercial fishing operators in Ranong Province would be affected as follows:

Objective 1: The reduction of fishing potential and effort. The objective is to reduce fishing capacity and fishing effort within 3 years, especially fishing boats for sea-ground fish, 40 percent in the Gulf of Thailand and 10 percent in the Andaman Sea, and for sea-surface fish by 30 percent in the Gulf of Thailand and 20 percent in the Andaman Sea. This

will be through the use of the Marine Fisheries Management Plan in these areas. The measures taken are MSY considerations before issue of a fishing license. Large commercial fishing boats will not be able to fish for 3 months because the new fishing licenses for 2018-2019 will have to wait until April 2018. Commercial fishing boats will be able to catch fish again, which will have a large impact on the economy both in the purchasing of raw materials for the boats prior to leaving for fishing, the sale of fish to fish traders, and export processing plants, which lost revenue valued at about 300 billion baht or about 100 billion baht per month. These figures do not include the impact of the import of expensive fish, as a substitute, during the high season of tourism. (Than Setthakij Online, 2018)

Objective 4: Reduction in the catches of species of economic importance. The goal is to reduce the proportion of small catches, to 50 percent of the current catch, in the next 5 years. The measures are the order of the chief of the NCPO Section 44- 'No person shall use or possess fishing gear such as trawl nets, with mesh smaller than 5 centimetres'. This led to more than 150 trawler fishermen in Ranong Province submitting a letter to the provincial governor to ask the state to review this law enforcement. More than 200 fishing boats were unable to catch fish because of the lack of a license and the boats must remain docked. As a result, the fishing vessel owners lost income, due to not being able to go out to catch fish. They also had to pay for care and expenses, including mooring fees, which amount to \$ 15.55 per boat, per day. At present, many fishing boat owners are discouraged from engaging in fishing. I do not see a solution or government help. Therefore, most of them will have to sell their ships, without a license. (Matichon Online, 2015)

Furthermore, commercial fishermen are also affected by the enactment of the Aliens Act of 2018, where both labour and operators face very high costs in the process of obtaining a work permit, the penalty for non-compliance is very high. Workers and entrepreneurs are concerned that this will cause a shortage of labour and possibly lead to 'circumvention' of the law, especially in the border areas of Ranong Province where it is easy to cross the border.

It seems that the problem of fisheries in Ranong Province is one that overwhelms government due to the over fishing that resulted in the destruction of marine resources. The policies and measures push the entire burden on to the fisheries sector, which the state previously supported, as it is a major manufacturing sector that generates revenue for the country. The solution to the conflicts therefore contrasts with the concept of fishery management, which has three main paradigms to consider: resource conservation, social, and economic. Fisheries management policy must be based on the integration and balance of these three paradigms (Charles, 2000).

The solution must concern the whole system of implementation of the final objectives of the fisheries management plan, which is to strengthen fisheries management. The goal is to create effective fishing management. This is very important because if it can be managed, other problems can be solved.

## 5. Solutions to fisheries problems in Ranong Province

Considering the problems of fisheries in the whole of Thailand and in particular Ranong Province, it was found that the problem may have been solved, yet still continues. Society has noted the potential of the state to implement a policy to solve the problems of fisheries resources, which are public property that the centralized government must manage, in unity, in the cheapest and most effective way. This is very difficult due to policy fragmentation in many organizations involved in the work of power division, and the management of public and private sectors. The public-private distinction, as in the traditional values of public administration, has vanished.

However, decentralization has the power to draw all sectors related to public works into the management process and acts as a co-operator with, or as, a government agency. This leads to acceptance of state policy that participants share feelings and ownership in and can be targeted for all parts to play their role in the right to drive resources, and the resources from multiple parties, to achieve common goals (Kjoer, 2006, 4-5).

The author therefore presents the concept of shared management. Collaborative Governance is used in fisheries management to solve fisheries problems in Ranong Province and other areas of the country. Krik Emerson, Tina Nabachi and Stephen Balogh (2012) defined the meaning of Collaborative Governance in decision-making structures in public policy and management that actively participates with the people. Collaborative Governance works across the boundaries of government agencies, at government level and / or in the public sector, private sector, and has a scope of knowledge that the state, alone, cannot achieve. This also corresponds to the findings of Chris Ansell and Alison Gush (2007), that Collaborative Governance is defined as a multi-sector governing body. Both government and non-governmental stakeholders join in the official decision making, focusing on consensus in discussions to create, or implement, policies to solve the public problems of the country and/ or to achieve development goals that are too difficult to accomplish individually. (Tossaporn Sirisampan, 2016, 4)

Fisheries management requires diverse knowledge including, biology for resource conservation, economics for trading, income, and human resources for the rights of coastal fishing communities and labour. Therefore, problem solving requires multiple parties to work together. As a result, the author proposes a common management concept for fisheries. There are several researches related to the management of environmental and natural resources, such as the research by Rob D. Fish (a), Antonio AR Ioris (b) and Nigel M. Watson (c) (2010). "Integrating Water and Agricultural Management: A Collaborative Governance for a Complex Policy Problem" which is a study of five European union member states in Northwest Europe; Research by Jae-Young Ko et al. (2017) on "Challenges in Collaborative Governance for Coastal Restoration: Lessons from the Caernarvon River Diversion in Louisiana; A research of Judith Westerinka et al. (2017) on "Collaborative governance arrangements to deliver spatially coordinated agri-environmental management" and; Christina M. Kossmanna, Jelle H. Behagel (a), Megan Bailey (b) (2016) "Action and Inertia in Collaborative Governance of Marine Protected Areas (MPA) in Indonesia". It was found in all studies mentioned above that:

1) Shared management creates a collaborative mechanism of actors who are the stakeholders in the policy, such as operating in the form of a network of committees.

2) Management is a combination of learning, coordination, and social activities to build understanding, trust, and to resolve conflicts between parties.

For Thailand, joint management is a good trend since the 2015 Fisheries Act states the following issues:

1) The National Fisheries Policy Committee and the Provincial Fisheries Commission comprises the sectors related to the fisheries in the provinces, such as; the representatives of local fisheries organizations in coastal fisheries, offshore fisheries, freshwater fisheries, aquaculture activities or aquatic animals processing. This also includes scholars and people experienced in fisheries or natural resources and the environment, to work with the government to gather recommendations, suggestions, and solutions for fisheries management, maintenance, conservation, rehabilitation and the utilization of the aquatic resources of the local fishing community organizations, in the area responsible for policy making.

2) The government shall encourage the collection and organization of fishing community organizations to allow The Department of Fisheries to advise, provide information to disseminate to the local fishing community for management, to promote the maintenance, conservation, rehabilitation and utilization of aquatic resources as a community project or activity.

However, the implementation of the concept of shared management, within Thailand, is a new issue that has recently taken place in the law to develop terms of implementation of effective management of fisheries effectively.

## **6. Conclusion**

Thailand is a major fishing area of the world. During the 6th National Economic and Social Development Plan (1987-1991), the fisheries sector was ranked as one of the top 10 fisheries in the world. At the same time, sea fishery is a source of food for the fishing community in Thailand. It produces revenue for the country, and creates employment. One major fishing area is Ranong Province that is located in the Upper South of the country, adjacent to the Andaman Sea. In 2015, Ranong Province had fishery production valued at 122.27 billion USD, resulting from the catching of aquatic animals, importing aquatic animals from neighbouring countries for export and domestic sales, coastal aquaculture and seafood production. However, the long-term commercial fisheries are often responsible for over-fishing. Hence, the government has a policy to address this problem, but it cannot be done effectively because fisheries problems are complex and involve many parties. The author therefore proposes a common management approach of collaborative governance to be used in fisheries management. This will allow the related sectors to resolve issues with the government. It is likely that, in Thailand, a good example of this, as a guideline for the implementation of the Fisheries Act 2015, must be implemented effectively.

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# COMMUNITY STRENGTHENING THROUGH THE COMMUNITY ECONOMIC DIMENSION FOR SUSTAINABILITY IN SATHING PHRA DISTRICT, SONGKHLA PROVINCE<sup>1</sup>

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## **Abstract**

*The purpose of this article is to investigate community strengthening through the economic dimension of community for sustainability in Sathing Phra District, Songkhla Province using the qualitative research method. Data were gathered from related literature and through observations and in-depth interviews with 22 core community economic leaders who had organized themselves to establish learning centers and groups of processed products producers. Data obtained from the in-depth interviews were categorized into study issues, interpreted, concluded and presented using analytical description. The study found three aspects of operating activities through the economic dimension in Tha Hin and Khukhut sub-districts as follows. 1) Production activities: The communities have production systems that depend on natural resources under the Nod Na Le way of life consisting of rice farming, making palm sugar products, and fishing. Furthermore, the communities have mixed farming in which plants are grown and animals are raised in the same areas. 2) Group activities: The communities have Nod Na Le way of life learning centers, sufficiency economy learning centers, tourism clubs for preservation of the Nod Na Le way of life, and the processed products groups. 3) Community economic activities: The communities have activities that promote morals. They use compost fertilizers in farming and have fair agriculture water distribution that have resulted in production systems and natural food sources beneficial to the ecological system and wellbeing of the communities. People have sufficient chemical-free food, which is in congruence with their eating culture, that would last for a long period of time. These operating activities through the economic dimension would lead them to being strong and sustainable self-reliant communities according to the philosophy of sufficiency economy.*

**Keywords:** Community economy, community strengthening, the Nod Na Le way of life

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## 1. Introduction

Recently, economic development had been managed by the government and all mechanisms of the economic development had also been controlled by the government. Emphases had been placed on individualism, competition, and increases in efficiency and effectiveness without taking into account possible consequences. In addition, management of fair benefits was missing. Presently, the situation indicates that as a result of such development, the economy is without stability; the resource base is deteriorated causing social problems. Thus, an alternative was sought so as to have more stable economy. Consequently, the 11<sup>th</sup> National Economic and Social Development Plan placed emphases on balancing all dimensions, mobilizing towards integrated practice, developing people and society for social justice and equality, and opening opportunities for participation from all sectors (Office of the Economics and Social Development Board, 2011). At the same time, strengthening the community has become a social demand for people to consider their own roots and to raise awareness of love for their own community, for their friends as well as for the environment; and networking has become ties and cooperation for social development (Rodsir, 2011). Therefore, community strengthening is a way towards sustainable development. Development strategies and methods would support and promote holistic activities for the community with a learning process and knowledge management participated by people in the community using the community's own resource capital and potential to produce enough for economically self-dependence.

Community economy is a relationship system of the resource bases (soil, water, forest, etc.), the production system, the consumption system, and capital management (monetary and non-monetary) using group activities to promote the learning process to develop potential or revive the environment, people, family, community and occupation to upgrade wellbeing and trading of the community for development of the quality of life. However, community economy has been obscured by the mainstream economy. Nevertheless, currently, community economy has been upgraded as an alternative for solving the critical problem faced by the country.

As economic development is a new alternative, social and environmental development needs to be taken into consideration in order to achieve the development goals (Barbier, 1987). Even though the emphasis is on economic self-reliance for the community, in the case of Sathing Phra District in Songkhla Province, especially in Tha Hin Sub-district and Khukhut Sub-district, in terms of community economy, their production systems still depend on natural resources and the environment in the Nod Na Le way of life. Villagers do rice farming, harvest palm sugar for production, and fishing. Because people in these communities earn enough income to raise their families, not many of them migrate to work elsewhere. They have formed groups to process products for sale, performed activities according to the philosophy of self-sufficiency economy, and established a one-baht-a-day savings group called Satcha Wan La Baht Group or a One-Baht-a Day Savings Group. Their social relationships are that of kinship systems reflecting a community economy with social relationships, and the environment is the important element of their being self-reliant communities that can lead them to being strong

communities. This phenomenon has prompted a question how local people of Tha Hin Sub-district and Khukhut Sub-district in Sathing Phra District, Songkhla Province strengthen their communities through the community economic dimension for sustainability.

## **2. Research objective**

To investigate community strengthening through the community economic dimension sustainability

## **3. Related concepts, theories and literature**

### **Community capital**

According to the livelihoods approach, community strengthening in the economic dimension requires a great deal of community capital (Kittithonkun et.al, 2014) consisting of human capital, social capital, physical capital, financial capital and natural capital. **Human capital** refers to skills, knowledge and competency of individuals, who are core community leaders. **Social capital** refers to social resources with three related aspects: 1) Networks and connectedness which is, vertically, the patronage system, horizontally, the connectedness between individuals who share benefits which increase trust and ability in working together; 2) Members of formal groups who adhere to the same regulations and penalties; and 3) Relationships based on trust, returns and exchanges contributing to cooperation. **Physical capital** is infrastructure such as transportation, water sources, clean energy and information accessibility. **Financial capital** plays an important role in promoting activities; without it, activities cannot be carried out. Capitals can come from outside, savings operations or community business operations such as community stores, forming groups for agricultural products trading and agricultural production factors. Community business is only a means to community economy and better quality of life for the community. Last, **natural capital** is the source of natural resources which are needed for people to make their living. There are many types of natural resources from common-pool resources which are invisible such as atmosphere, bio-diversity, resource preservation, natural resources management to properties which can be allocated directly for agricultural use such as trees and land.

### **Self-reliant community economy**

Important characteristics of community economy are that family is the production unit, labor of family members is most important as it is needed for family survival, family sufficiency and family self-reliance. According to the concept of community economy, the community is dynamic and able to survive by itself and develop along with the capitalist system (Southern Activist Families, 2010).

According to Wiraphatthanairan (1998, 1), self-reliant community economy refers to a desirable community economy that is economic activities in the agricultural sector, the industrial sector and the service sector in which people in the community join in thinking, doing, receiving benefits and owning it. These economy activities are based on local potential to promote villagers in forming groups and creating the community organizational network for people in the community to participate in development, to use economic activities in construct learning and diverse occupations for people to choose from.

## **Self-reliant community economy according to the sufficiency economy philosophy**

Office of the Economics and Social Development Board, Crown Property Bureau, Phattana Thai Foundation, and the World Bank (2003: 8-11) view that activities that make the community self-reliant and are in line with the sufficiency economy philosophy can be classified in three groups as follows. 1) Production activities such as making bio-fertilizers, growing chemical-free vegetables and rice, growing medicinal herbs, making insect repellents and biochar, fish breeding, crop processing and mixed farming. 2) Group forming activities for community members to do activities together such as establishing savings groups, welfare fund groups, vegetables growing groups, snack and sweet making groups, community stores, community master map making groups, natural resource and environmental preservation groups, cooperation groups for doing activities in Buddhist temples, learning groups through community learning centers or schools, and anti-drug groups. 3) Moral promotion activities such as activities to instill in community members caring for others rather than focusing on money or materials, activities to promote honest and transparent bookkeeping, activities to develop people in the community to have quality and awareness of commitment to the community, and activities to promote self-help before asking for help.

### **4. Research methodology**

For this qualitative research, the study areas were in Sathing Phra District, Songkhla Province, particularly, Tha Hin Sub-district and Khukhut Sub-district because the way of life among people in these areas is that they have production systems of growing rice, making palm sugar products, and fishing. They can depend on natural resources and the environment of their communities. Data were collected from related documents and field data were collected from observations and in-depth interviews with 22 informants who were core community economic leaders that had formed groups to establish learning centers and groups for other activities. The data from in-depth interviews were analyzed by means of categorization, interpretation, and conclusion. Then the results were presented with analytical description.

### **5. Research results**

#### ***5.1 Production activities operations: Community economic dimension of Tha Hin Sub-district and Khukhut Sub-district***

Tha Hin Sub-district, Sathing Phra District, Songkhla Province has 9 villages, a population of 3,998, and 1,147 households on the area of 9,768 Rai (Office of the Non-formal and Informal Education, Tha Hin Sub-district, Sathing Phra District, Songkhla Province, 2018). The production system in all 9 villages in Tha Hin Sub-district depends on community natural capital as people in these areas do rice farming, making palm sugar products and fishing. This sub-district is adjacent to coast of the inner Songkhla Lake. For agricultural activities, there are water sources which are Khlong Huai Lat, Khlong Tha Hin, Khlong Mirai, Khlong Phruan, Khlong Soko.Socho., and Khlong Phon-ek Athit Kamlang-ek. These water sources make it possible for people to do rice farming all year round. Due to support and promotion by government organizations and non-government organizations in production that compliment community resources and environment, villagers in this area have tried to turn to production activities employing the self-

dependent community principles by being economical, increasing income and reducing expenses. They have turned to mixed farming planting fruit trees like banana, papaya, and coconut which enable them to have enough for year-round consumption. They raise native cattle, layer chickens, layer ducks, frogs and pigs (called Mu Lum-a pig raising method) for family consumption and sale in the community. Some people form groups to make organic fertilizers and use in rice, fruit and vegetable farming. Nevertheless, in their mixed farming, they also use rice breeds from other areas and use chemical fertilizers because they still need to depend on the marketing mechanism (Aunt Maeo, Uncle Mi and Grandma Som, personal communication, December 20, 2017). Consequently, they grow Khao Hom Pathum, Khao Riceberry, and Khao Sangyot, popular rice breeds for health, to add value and nutritional value to their products.

Regarding Khukhut Sub-district, it is located in Songkhla Lake area with an area of 7,825 Rai where 9 villages are situated with a population of 4,763 and 1,403 households; 95 percent of the populations are Buddhists and 5 percent Muslims. Houses are built on the coast of Songkhla Lake (Tambon Khukhut Administration Organization, 2018). The study found that most people in Khukhut do rice farming, making sugar palm related products, and fishing. Economically, most households have low income and they try to adapt themselves by following the concepts of sufficiency economy. They try to be economical, increase income, and reduce expenses. They increase their income by doing more farming in the same area and try to do other things such as selling snacks, growing vegetables and raising animals for sale (Grandma Mai, Aunt Lamai, and Teacher Prani, personal communication, December 21, 2018).

Furthermore, it was found that villagers have adapted their way of production using more machines to replace human labor. Most farmers use chemical fertilizers instead of manure or organic fertilizers, and use insecticides or chemicals to control other pests instead of traditional methods used by their ancestors. This has incurred more expenses which is not cost effective and increases debts resulting in some farmers eventually losing their agricultural land. However, many farmers get together to form cooperatives, farmers groups, and housewives groups to help each other in doing mixed agriculture, oil palm plantations and rubber plantations (Somphong, Bang Thoet and Suphaphon, personal communication, December 22, 2018).

### ***5.2 Group forming activities operations: Community economic dimension of Tha Hin Sub-district and Khukhut Sub-district***

In Tha Hin Sub-district, people have formed groups of housewives to make artificial funeral flowers and wreaths and share income and benefits among group members and allocate part of it for the groups. In 2001, a Nod Na Le eco-tourism club was established followed by palm sugar processed products groups in 2010 with the help from Thaksin University and Prince of Songkla University in conducting research related to properties of sugar palm texture that is used in making soap while Rajamangala University provides help related to packaging innovation.

During 2013-2015, students came to the Nod Na Le Learning Center to learn the way of Nod Na Le from group members who gave them knowledge about using resources

as bases for various products such as bases for rice growing, palm sugar harvesting, dessert making, lump sugar making, and soap making. They have a Nod Na Le Eco-tourism Club in Tha Hin Sub-district (Aunt Lom, personal communication, December 5, 2017). In addition, they have native cattle raising group, community enterprise group, organic fertilizer group, native chicken raising group, native snack and sweet making group, salted eggs group, ripe sugar palm group, sun-dried banana group, and anchovy group called Sathing Phra Peninsula Sufficiency Economy Community Enterprise with Mr. Somchai Monkhonbut as group chairman, and it has been a sufficiency economy learning center of Village 2 (Somchai, personal communication, December 6, 2017).

Assistant village headman of Village 3, Suchat Makchuchit is chairman of the chicken raising group, native cattle raising group, and Songkhla Lake fishing group. For Villages 4, 5 and 6, Phunsap Srichu is chairperson. Regarding group forming in Tha Hin Sub-district, group committees, rules and regulations, and benefit sharing are established which help villagers to have working capital. They have also formed a One-baht-a-day Satcha savings group which provides welfare for members for funerals, sickness, loans for occupations such as for the cattle raising group (Grandma Da, Suchat, Suthiphong and Aunt Chaem, personal communication, December 10, 2017).

For Khukhut Sub-district, most of the groups are related to the Nod Na Le way of life, fishing occupation and the local wisdom preservation group. The integrated rice farmers in Village 8 has Khru Prani or Teacher Prani as chairperson who formed a soap making group, layer ducks raising groups, and a rice farming group based on local wisdom. There are also groups related to social welfare like a one-baht-a day Satcha savings group, a savings group, and cattle raising group from which members can borrow money to invest in occupations or to buy cattle for farming. Another group is the sugar palm fruits with Mrs. Mala Phanitchakorn as chairperson (Mala and Khru Prani, personal communication, December 20, 2017).

Villagers who are members of the groups that produce community products sell their products in fairs and festivals. For group members, market promotion is carried out; information and knowledge is provided, and negotiation is initiated. Integrated rice farming group and local wise men have adopted the philosophy of sufficiency economy conceived and developed by the late King Bhumibol Adulyadej and applied in their daily life.

The community learning center of Ban Don Khan Tai in Village 8 and the community enterprise for health-loving group in Khukhut Sub-district have Khru Prani Manidun as chairperson and Mrs. Prani Nusong as secretary with an office located at No. 33 Village 8. The activities carried out by the groups include raising layer ducks using food from natural sources for good health of the community. At the Sub-district headman's place, native and other breeds of chickens are raised (Saowarot, Om and Prani, personal communication, December 22, 2017).

### ***5.3. Moral promotion activities operations: Community economic dimension of Tha Hin Sub-district and Khukhut Sub-district***

For, the community production systems in Tha Hin Sub-district and Khukhut Sub-district, bio-fertilizers are used in rice farming and mixed farming. As a result, the

ecological system of these communities could sustainably provide and allocate resources in relation to the production way of the communities. They have mangrove conservation, and water conservation for production and sustainability and self-reliance. They have fair water allocation for rice farming through canals and dams in their communities which contributes to the production systems and natural food sources that benefit the ecological system and wellbeing among local people. Furthermore, this provides sufficient toxic-free food that corresponds with the community way of food consumption culture in the long run and they can exchange knowledge with other communities for development in the future. In addition, the chairman has advised villagers to grow rice berry and Sangyot rice, and promised to buy these types of rice after harvested which help the community to grow environmentally-friendly rice that is good for health (Suphawadi, personal communication, January 5, 2018).

Furthermore, it was found that the two sub-districts had established centers for sufficiency economy and new theory of principle agricultural land management. At these centers, government organizations such as Tambon Administrative Organizations, Non-formal Education Centers, District Agriculture Office, and District Development Office play an important role in providing people knowledge in applying the principles of sufficiency economy and new theory agriculture in the actual situation. For example, in deciding what type of plant to grow, suitability of the area and whether it is promoted need to be considered together with the sufficiency principle to obtain suitable crops.

With regard to earnings, mixed farming has been introduced as economic immunity because growing plants and raising animals in the same area can earn farmers income that compensate each type of crops. Farmers can seek knowledge from related government organizations. For example, agricultural technology of the Ministry of Agriculture and Cooperatives has made people realize that they need to conduct their occupation with moral, honesty, perseverance, and using their intelligence in living and working together with unity (Bunchok and Suni, personal communication, January 6, 2018).

## **6. Conclusion**

The study on community strengthening through the community economy for sustainability in the study areas found that in the production system people help each other as self-reliant community economy depending on natural capital using the Nod Na Le production system. Community development employs local wisdom, which is human capital, in rice farming, making sugar palm related products and fishing. Local people in the communities form groups to do extended activities such as Satcha savings groups, sufficiency economy learning centers, and homestay tourism groups. These groups are managed by the communities to earn income for families and to provide knowledge for students and other communities, which are considered transfer and dissemination of community wisdoms, so that these wisdoms continue to exist and to be extensively inherited. Community reputation gained by doing this would enable the communities to exist with self-reliance and to strengthen the communities at the same time. Community adaptation in the economic system for trade and products distribution with community markets are considered as food distribution for the communities and as application of

social capital in strengthening the communities through social interactions. Moreover, the kinship and the patronage systems in the communities contribute to making the economic operations in a more caring way.

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# FLOODING AND THE CONDITION OF COLLABORATIVE PUBLIC MANAGEMENT; CASE STUDY: SAMUI ISLAND DISTRICT, SURAT THANI PROVINCE

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## Abstract

*Samui island district is one of the significant travel city of Surat Thani. Also, this city grows very fast and has many high potential place for tourism which is well known in both Thais and foreigners and be the attractive place for many people to come and visit here. A number of tourist increase every year, so it effects on the number of nonregistered population from tourists. The section of tourism make the income for this island approximately around 9,000-12,000 million baht per year. Even though the growth of the economic in the city is high, it lead to some several problems instead which reflects on how well tourism in city grows but the development of public utility is not go along with how fast of constructed project of the city grows, especially on water problem. Due to the report of this circumstances, many area in Samui island district are faced with 3 water problems which are the deprived of water on utilizing, flooding, and waste water. The big problem they have faced is flooding because the areas in Samui Island get the impact from flooding and flash flood according to the characteristics of the geography which are the complex mountains and plateau. These means that in May to January, water from many canals will flow over the houses of people and it lead to the collapse of clay in the area nearby mountains (Department of Disaster Prevention and Mitigation, 2010: 2-8). Moreover, the area of Samui island is the repeated area of flood every year. This problem have been resolved continuously, but could not get enough of efficiency because of the lack of integral cooperation from many sections. According to the condition of these problems, it need to be solved hurriedly, if not, it may effect on population, tourist businesses, and income from country tourism in the future.*

**Keyword:** Flood, Collaborative public management

## 1. Flooding in Samui island district

Flood is one of the natural disasters which occurs in many area around 44% of the flooding which always occur in Asia (United Nations, 1999). Thailand is one of the countries in Asia which experiences some natural disasters such as flood, storm, fire, and the impacts from earthquake. According to the statistical report, it found that the overall has lost in many dimensions such as economic, social, agriculture, private business,

education, religion and culture, public utility, transportation, and the damages in each level of public sections which cover many area as 66 city from 77 city in the country (Poapongsakorn & Meethom, 2011). These damages affect the huge costs to the country. Due to the flooding, the income of the country decrease because the profit from many activities get the impacts and the public section have to use budget and resources to help and restore the flooded areas and victims.

According to the observation on condition and circumstance of water problem in Thailand, it found that the problems which Thailand have to face every year are drought and flood. Even though the management of this water problem will lead to the significant on policies, Thailand still faces with all these problems and it becomes very intensity which effect on the social economic and living security. The significant cause of the water management is ineffective of water management in country and lack of the modal on better managing water system. Mostly only solve the problems by rely on the external resources from public section and the development problems which is no direction, lack of planning the city, and lack of cooperation from many sectors.

Flooding is a big problem for many countries including Thailand. From the past several year in the late of 2011, Thailand had faced the flood in many city such as Sukhothai, Uttaradit, Phitsanulok, Phetchabun, Phichit, and Nakhon Sawan which is the group of provinces that have faced flood so many times. Due to the study in south area of Water Crisis Prevention Center, Department of Water Resources, Ministry of Natural Resources and Environment which responsible for study and analyze the risk areas of flooding in Thailand, they states that drainage areas in south eastern are the area which get the most impact from flooding and the repeated flood area are Chumphon, Surat Thani, Nakhon Si Thammarat, Songkhla, Pattani, Yala, and Narathiwat in total 7 province (Water Crisis Prevention Center, 2012)

Samui island district is one of the significant travel city of Surat Thani. Also, this city grows very fast from the average tourists around 2,000,000 people per year. Even though the growth of the economic in the city is high, it lead to some several problems instead which reflects on how well tourism in city grows but the development of public utility is not go along with how fast of constructed project of the city grows, especially on water problem. Due to the report of this circumstances, many area in Samui island district are faced with 3 water problems which are the deprived of water on utilizing, flooding, and waste water. The big problem they have faced is flooding because the areas in Samui Island get the impact from flooding and flash flood according to the characteristics of the geography which are the complex mountains and plateau. These means that in May to January, water from many canals will flow over the houses of people and it lead to the collapse of clay in the area nearby mountains (Department of Disaster Prevention and Mitigation, 2010: 2-8). Moreover, the area of Samui island is the repeated area of flood every year. This problem have been resolved continuously, but could not get enough of efficiency because of the lack of integral cooperation from many sections. According to the condition of these problems, it need to be solved hurriedly, if not, it may effect on population, tourist businesses, and income from country tourism in the future.

## **2. Collaborative public management**

In this section, the author has mentioned on the concept of collaborative public management which is the idea of Robert Agranoff and Michael McGuire who wrote the book “Collaborative Public Management” in 2003 and will be used in the prevention management of Samui Island which the principles are as follow:

The definition of collaborative public management is defined by many researchers but the popular one is from Robert Agranoff and Michael McGuire which define that the collaboration public management is the process which utilize in practical for managing between many organizations that could not solve the problem by only one organization under the limits that each organizations have such as knowledge, time, budget, and competitive.

Moreover, there are some researchers who define “collaboration” similar to collaborative public management as follow:

Russ Linden has defined “collaboration” as co-labor which people in organization try to use the resource, make the decision, and be the part of the result which occurred from people in other organization or the same one.

Ann Maria Thompson has defined “collaboration” as freedom actors who interactive by negotiating whether formal or informal way in order to create the rules and determine the structure of work relationship in practical way or making decision together including share social norm on conduction and benefits between organizations.

John M. Bryson, Barbara C. Crosby, and Melissa Middleton Store have defined “collaboration” as cross-sector collaboration which connect and share information of resources and ability of the organizations which are more than 2 organizations in order to achieve the result together which cannot conduct by only one organization.

In addition, **Agranoff (2007, p.26) and McGuire (2006, p.37) have divided the collaboration into 4 items follow by the range or procedure of collaborative public management as follow:**

### ***2.1. Activation***

To make the collaboration, it has to identify and gather the right persons and necessity of resources which can achieve the goal of conduction. The right person is the person who have necessary resources to make a policy such as budget, knowledge, information, professional skills, experienced, and authority by law and workforce. The important criteria in considering person who should join the team is the person or organization which can support the resources which is still lacking. Also, to search for extending the collaborative member base who have the potential continuously will benefit on accomplishment.

### ***2.2. Framing***

To create the frame of collaborative conduction is very necessary for creating the framework, any issues, identity, and culture for this network or even the developed structure of the network. Other significant way in developing framework and goals in overall of the collaboration is planning the strategy from the participants.

### ***2.3. Mobilizing***

The conduction for achievement and cooperative builds from the support of significant person in both internal and external collaboration.

### ***2.4. Synthesizing***

Synthesizing is to create the environment and condition to make the interaction's goal and be benefited for related participants. Also, to utilize to make a trust on people and exchange the information

They also presents **the models of collaborative management.**

Robert Agranoff and Michael McGuire have presented the models of collaboration management by considering 2 dimensions which are collaborative activity and collaborative strategies. These can be divided into 6 forms of collaboration.

#### **1. Jurisdiction-Based Management Model**

This form has the strategy on searching for the collaboration from person and many organizations from public sector and others due to jurisdiction which need to be alert for searching and connecting with the potential organization which have the necessary resurces in order to achievement. There are 2 activities: 1) Vertical Jurisdiction-Based Activity is the collaboration on the relationship of public sections and 2) Horizontal Jurisdiction-Based Activity is the collaboration between public sections and others in order to rely on each other to conduct equally.

#### **2. Abstinence Model**

This form is the exception of collaborative strategies which is not alert on finding the cooperative and also different from the Jurisdiction-Based Management Model because the organization may see unnecessary on collaboration.

#### **3. Top-down Model**

This form is the relationship from top to down between the central government and local government in order to achieve the goals and objectives in national level which is from the conduction of central government to the local government or agent who consents of working as a representative from the top. The top is the controller of conduction and supporter the resources strategy in collaboration of organization which follow the rules or the requests from citizen.

#### **4. Donor-Recipient Model**

This form has the level of activity from medium to high on collaboration as donor and recipient who rely on each other. However, they cannot control the conduction of other fully. The donor who achieve the accomplishment will depend on the conduction of recipient. As a recipients, they will receive the budget to support from the donor.

#### **5. Reactive Model**

This form is the medium level on both activity and strategy. In some case, the organization might collaborate but some are not. The organization are freely considering the necessary of participation. Some that not collaborate may think that it is not their responsibility.

## **6. Contented Model**

This form is conducting base on the strategy in the form of seizing. The chance of having good collaboration between organizations is low. This collaboration with other organization will affect your own organization so that the officer need to have to ability on making good relationship and good at choosing the opportunities.

As mentioned above, Robert Agranoff and Michael McGuire (2003, p.4) also states that the collaboration may or may not be formal depending on the exchange of information to negotiate between each other. Since they have created the collaboration, it becomes one of the important role in public management as well as private management. According to acknowledge on conducting for spreading their products, any public services, and to solve the problem in society cannot be limited on the responsible extension on one person or only one organization anymore. Because the environment of many organization have changed rapidly and continuously even more complex for one person or one organization, they suggest the concept of collaboration as they wish it might be applied as a pathway and tools for modern management. (Agranoff, 2006: p.56)

It make the author acknowledge the importance of this concept as in nowadays, this concept is very necessary. There might be changing on the managing structure and new born of many group in both formal and informal, thus the idea might support the collaboration in order to get the best benefits for society.

### **3. The condition of collaborative public management on flooding at Samui island in nowadays.**

The main causes of flooding are wild space invasion, deforestation, or even clear the forest for constructing the road, townhouse, hotel, resort, restaurant, and utility for tourists. All these have occurred without the good planning so it might be the problems and danger from environment in the future. For example, the area which uses to construct the hotels or resorts on the mountain might be destroyed by the collapse of clay. To clear the forest for construct the road might be flood when it has heavy rain. The water cannot flow because the forest area became the concrete which cannot absorb water as good as forest. Now, it becomes a disaster for people such as power failure, limit of foods, the economic which immediately stop, and tourists cannot travel here. As mentioned before, the main streets in Samui island are now flooding.

Samui island district still has the flood problem every year and some areas are the repeated flood area. Even though they have been solved from public section, it still not good enough. In Samui island, the overall of collaboration from public is unclear because the area is the travel place and economic city which they receive the income mainly from tourism. These might make people less interest on the problems or collaborate with public section. When the flood occurs, it make a lot of impacts for people in that area including the economic in tourism.

## **4. Conclusion**

They way of collaborative public management on preventing flood is very necessary to determine the ways of preventing and preparing for flooding in the future as it

tend to occur many times and even more intent. According to the natural disaster in country, the expedition of society on preventing and preparing on flood is not enough because unacknowledged and unbelievable on this so that they get the worth lesson. However, some area already have the plan and be ready for flooding, but the intensity of flood is higher so that they could not handle as well as some area do not have the equipment or even prepare themselves.

Collaborative public management on preventing flood that appropriate for Thailand is the process of every sections collaborate with others including citizen especially the associated persons who responsible for this duty. The preparation on flood should be acknowledge on everybody so that they could handle the problem and help the victim immediately.

The direct victim should know and learn how to help themselves and other and the role on collaborating between organizations which will make the conduction become easier and effective. Thus, they can restore into the normal circumstances even faster. If every section collaborate with other and acknowledge the problem, they could handle the intensity of this problem. Especially in the public section, the authorize person on managing need to support the integral strategies which is advantage for preventing and solving the flood in long term.

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# THE STRENGTHENING OF A LOCAL COMMUNITY USING A MODEL SUFFICIENCY ECONOMY VILLAGE: A CASE STUDY OF KUT-KHAE VILLAGE, NA NGAM, SELAPHUM DISTRICT, ROI ET PROVINCE

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## **Abstract**

*The research objective was to study factors that affected the strengthening of a local community using a model sufficiency economy village. The sample in this study was 106 household heads or household representatives at Kut-khae village, Na-ngam sub-District, Selaphum District, Roi Et Province. Sample size was calculated by using the ready-made table calculation sample of Krejcie & Morgan. Questionnaires were used to collect the data and the statistics used in the research was an analysis of percentage, mean, and standard deviation. It was found that 1) overall of internal factors and external factors that affected the strengthening of a local community using a model sufficiency economy village, Kut-khae village, Na-ngam sub-District, Selaphum District, Roi Et Province- were at a high level. 2) Factors affecting the strengthening of a local community using a model sufficiency economy village were significantly. There were 3 variables; 1) social relations factor, 2) the participation of people in the community, and 3) support from government agencies. The prediction power of these predictors was 49.40 %.The prediction equation in the form of standardized scores ( $\beta$ ), affected criterion variable positively significance level of .05 ( $p < 0.05$ ). This could be derived factors equations that affected the dependent variable in the following standardized scores as follows:  $Z=0.428_5 + 0.337Z_2+ 0.217Z_6$*

**Keywords:** community strength, model village, sufficiency economy, strengthening

## **1. Introduction**

Thailand's economic crisis that began in late 1996, which was also the first year of the 8<sup>th</sup>National Economic and Social Development Plan, caused many economic and social problems affecting citizens in all sectors of society. Therefore, the issue of a strong community has been raised as an important alternative for development. According to the philosophy of the 8<sup>th</sup> National Economic and Social Development Plan, a focus on a people-centered development process will increase people's potential and develop a strong community, a readiness to participate in economic development, and the social

management of natural resources and environmental sustainability. The strength of the community is the key to reducing the impact of the economy on society. This should include the creation of a sustainable economic and social development process in the future. This is an important development approach that continues to the 9<sup>th</sup> and 10<sup>th</sup> National Social and Economic Development Plans (Chaisuk, 2009: 1). It can be said that, the community is a foundation of the management and development of the country. Building a strong community is one of the essential factors in the management and development of the country under the rule of the present form of democracy which gives priority to decentralization to the local and political participation of the people. However, creating a strong community requires the following factors: having visionary community leaders with wisdom, having social relationships conducive to helping each other, having a strong community culture, having a shared ideology, and having support of the government etc. (Sriampai, 2008: 1)

Most of the people in the Kut-khae village have a supplementary occupation which is reed mat weaving. Funds from the community include a Saving for Production Group with a 1.5 million baht capital production, a Rice Mill Community with 50,000 baht capital, a Village and Urban Community Fund with 2.7 million baht capital, a Sufficiency Economy Group with 22,000 baht capital, a Group of 125 people Farming Funds with 300,000 baht, a Poverty Alleviation Project group with 300,000 baht capital, a Housewives Farmers Saving Group with 56,000 baht capital, and a Rice Bank Group with 430,000 baht capital.

Building a strong community is to create consciousness of citizenship and a love of local community, including the environment. It is important to create a relationship of cooperation to develop an independent and diverse community that is free from domination by the state and the capital. When organizations and citizens join together, the community and society will be strengthened and be able to help each other to solve any problems and find ways to improve the quality of life and finally self-reliance (Puangngam, 2010). Therefore, to strengthen the community and to be a model of sufficiently economic village, people in the community need to cooperate in many ways. The key is community leaders, government agencies, and local administration must be an example in the development of the community by involving the people. As a result, people in the community will see through the love and unity that they are a part or the key to make their community strong. The Kut-khae village is a strong community and is only model of sufficiency economy village in Na-ngam sub-District, Selaphum District, Roi Et Province. Therefore, the researcher is interested to discover the factors that affected the strengthening of this sufficiency economy community and made it a model.

### ***1.1. The purpose of the study***

To study the factors that affected the strengthening of a local community so that it became a model sufficiency economy village: a case study of Kut-khae village, Na-ngam sub-District, Selaphum District, Roi Et Province.

### ***1.2. Scopes of the study***

1.2.1 Scope of area was Kut-khae village, Na-ngam sub-District, Selaphum District, Roi Et Province.

1.2.2 Scope of the content was quantitative research.

Quantitative research was to study the strengthening of the community.

1) Internal factors that strengthened of the community consisting of community leaders, participation of the people in the community, community culture, management, and social relations.

2) External factors that strengthened of the community consisting of the support from government agencies, and local government.

### ***1.3. Scope of population***

1.3.1 The population in this study were 144 household heads or household representatives at Kut-khae village, Na-ngam sub-District, Selaphum District, Roi Et province. (A number of households based on basic minimum needs in 2016)

1.3.2 The sample in this study consisted of the sample that was used in quantitative research, which were 106 household heads or household representatives at Kut-khae village, Na-ngam sub-District, Selaphum District, Roi Et Province. The sample size was determined by the Yamane formula (Yamane, 1973: 727).

### ***1.4. Scope of time***

The research period was between January and September 2017.

### ***1.5. The variable aspects related to the study***

1.5.1 Independent variables were

1) Internal factors that strengthened the community consisted of community leaders, participation of the people in the community, community culture, management, and social relations.

2) External factors that strengthened the community consisted of support from government agencies and local government.

1.5.2 The dependent variable was strengthening the Kut-khae model sufficiency economy village

## **2. Research Methodology**

This research used quantitative research to study the factors affecting the strengthening of a local community using a model sufficiency economy village a case study of Kut-khae village, Na-ngam sub-District, Selaphum District, Roi Et Province.

### ***2.1. Instruments used in this quantitative research were as follow:***

Parts 1 were questionnaires which consisted of 6 items about the person's general information.

Part 2 was questionnaires which consisted of 50 questions about the factors affecting the strengthening of a local community using a model sufficiency economy village namely, internal factors which consisted of 1) community leaders 2) the participation of the people in the community 3) the cultural community 4) management 5)

social relations and external factors 6) support from government agencies, and 7) support from local governments. The questionnaire used a Likert rating scale.

Part 3 was an open ended question which was about the suggestions for strengthening of a local community using a model sufficiency economy village.

### ***2.2. To create a tool, the researchers set up the process as follow:***

- 1) Studied concepts, theories, papers and related research.
- 2) Determined the scope of the questions to cover the conceptual framework, purpose, and related elements
- 3) Drafted a questionnaire which was submitted to the research advisory committee for reviewing, correction and suggestion to improve the questionnaire.
- 4) Edited the questionnaire based on the advice of the research advisory.

### ***2.3. Data collection***

In this research, the researchers designed a variety of data collection methods to obtain complete results and a high level of reliable.

#### **Quantitative research**

The researcher determined the data collection process as follows:

3.1 The researchers requested a letter of support from the Faculty of Law, Roi Et Rajabhat University to apply for a permit and asked for cooperation from headman of Kut-khae village, Na-ngam sub-District, Selaphum District, Roi Et Province in answering the questionnaires and collecting data from the sample group.

3.2 The researchers appointed 5 research assistants to collect the data. The researchers explained the methods and procedures to the research assistants. The data was collected by using the questionnaire between 31 January and 28 February 2016.

3.3 All 106 questionnaires were returned completely.

### ***2.4. Data analysis of quantitative research***

The Pearson product-moment was used to analyze the correlation of strengthening of a local community using a model sufficiency economy village. The correlation criteria or the size of the association used the numbers of the correlation coefficient, correlation coefficient value approaching -1 or 1 represents the relationship at a high level, but if there is a value close to 0 represents the level associated with little or none. Factors for strengthening of a local community using a model sufficiency economy village were analyzed by using multiple linear regression statistics by Stepwise method significance level of .05.

## **3. Results**

The factors affecting the strengthening of a local community using a model sufficiency economy village a case study of Kut-khae village, Na-ngam sub-District, Selaphum District, Roi Et Province.

1. Overall the internal factors and external factors that affected the strengthening of a local community using a model sufficiency economy village-Kut-khae village, Na-ngam sub-District, Selaphum District, Roi Et Province- were at a high level.

2. Factors affecting the strengthening of a local community using a model sufficiency economy village were significantly. There were 3 variables; 1) the social relations factor, 2) the participation of people in the community, and 3) support from government agencies. The prediction power of these predictors was 49.40 %.The prediction equation in the form of standardized scores ( $\beta$ ), affected criterion variable positively significance level of .05 ( $p < 0.05$ ). From this could be derived factors equations that affected the dependent variable in the following standardized scores as follows:  
 $Z=0.428_5 + 0.337Z_2+ 0.217Z_6$

### **Recommendations**

1. There should be a comparative study of strengthening the community in other areas in order to bring the results of that comparison, including the analysis of differences in factors which affect the process of strengthening the community.

2. There should be a study of the relationship between community leadership and the thought process of the people in the community.

### **4. Discussions and Conclusion**

The factors affecting the strengthening of a local community using a model sufficiency economy village in the case study of Kut-khae village, Na-ngam sub-District, Selaphum District, Roi Et Province. Both internal and external factors affecting the strengthening of a local community using a model sufficiency economy village a case study of Kut-khae village, Na-ngam sub District, Selaphum District, Roi Et Province were at a high level. The results of this research can be seen from their involvement in community activities, both in terms of managing the problems in the village and in developing the villagers to adapt effectively to the situation. Similarly, the study of Srimukda (2002) found that the level of being a self-reliant community was at a high level. Moreover, Lertpan phrom (2011: 79) also found that internal factors affected the strength and sustainability of occupational groups. The level of feedback was at a very high level. The factors affecting the strengthening of a local community using a model sufficiency economy village were statistically significant. There were 3 variables; 1) social relations factor ( $X-5$ ), 2) the participation of people in the community ( $X-2$ ), and support from government agency ( $X-6$ ). The prediction power of these predictors was 49.40 %.The prediction equation in the form of standardized scores ( $\beta$ ), affected the criterion variable positively at a significance level of .05 ( $p < 0.05$ ). From this could be derived factors equations that affected the dependent variable in the following standardized scores as follows:  $Z=0.428_5 + 0.337Z_2+ 0.217Z_7$ . Furthermore, the study of Simukda (2002) found that an effective predictor to predict a community economic self-reliance trends in Samut-Sakhon province were the psychological factor and the management factor. The prediction power was 35.40 %, the correlation coefficient was 0.595. The prediction equation, in the

form of raw scores and standardized scores, can be derived as follows:  $Y = 2.169 + 0.306X_4 + 0.154X_7$  and  $Z = 0.348X_4 + 0.325X_7$ . In addition, Lertpanphrom (2011: 79) found that the correlation coefficient between the internal factors and external factors affects the strong sustainability of the occupational group that the variables were positively correlated significantly at the 0.01 level and the correlation coefficients were 0.788 and 0.882. Similarly, Potikul (2006: 109) found that the factors affecting the job satisfaction of the district assistant community development officers at academic assistant center area 3 were the policy and management of salary and welfare, job security, and equality of responsibility for work. The variance of the independent variable was 52.0%.

## 5. Conclusion

From the research of the process of strengthening of a local community using a model sufficiency economy village, Kut-khae village, Na-ngam sub-District, Selaphum District, Roi Et Province could be conclude that overall of internal factors that affected the strengthening of a local community using a model sufficiency economy village-Kut-khae village, Na-ngam sub-District, Selaphum District, Roi Et Province- was at a high level and every aspect was at a high level as well. Sort out by using means ( $\bar{x}$ ) from high to low as follows: Community leaders, social relation, community culture, management, and participation of people in the community.

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# CONTRIBUTIONS OF TOURISM TO SOCIO-ECONOMIC DEVELOPMENT IN THE MIDLAND AND MOUNTAINOUS AREAS OF NORTHERN VIETNAM

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## **Abstract**

*Recently, tourism development has paid more attention in Northern Vietnam, one of the poorest areas in Vietnam. Many rural and poor local residents are involved in several activities such as hosting tourists, providing traditional foods, drinks, and music performance and selling souvenir, local products. These activities create many opportunities for people to increase their living standards and to build up the rural economy in general. Based on the secondary data in Phu Tho, Yen Bai, Lao Cai, Ha Giang province, the study aims to explore the understanding of the aspects of tourism development. Especially, we are particularly interested in the contributions of tourism development to the four selected provinces' economies. We found that the local residents gain more income and having better living standards through active participation in tourism activities. At the provincial level, the results showed that tourism plays an important role in the economy through increasing jobs and budget contribution. The results can be of considerable interest to policy-makers in developing tourism.*

**Keywords:** Contribution, Northern Vietnam, Mountainous Areas, Rural Economy, Tourism Development

## **1. Introduction**

Nowadays, tourism has significantly developed aiming at the improvement of people's living standards worldwide. Tourism experts in the the United Nations Conference on Tourism and International Travel agreed that tourism is the aggregation of relationships, phenomenon, and economic activities that originate in the journeys and stays of individuals or groups outside their regular place of residence or outside their home country for the peaceful purpose. The place they come to stay is not their place of work. This concept is intended to internationalize tourism (United Nations, 1963). In fact, tourism is a business activity including many actors (e.g. tourists, travel agencies, local residents and governments) in response to the needs of the travelers. It is a complex activity as a whole. Therefore, we need to consider all involved actors in tourism activities in order to satisfy their purposes as well as tourists' demand.

According to the 2017 Law on Tourism (National Assembly of the Socialist Republic of Vietnam, 2017): Tourism is all of activities related to the journey of a person outside his/her usual place not more than one continuous year in order to meet the needs of sightseeing, relaxation, recreation, exploration, discovering tourist resources or combining with other lawful purposes. In this paper, tourism is considered a characteristic activity that people desire journeys/trips out of their residence. Organizations and individuals engaged in tourism business and agencies, organizations, individuals and population communities involved in tourism shall gather services on the basis of exploiting tourist resources so as to satisfy their demands.

Tourism plays an important role in the provinces' economies: (i) Developing tourism contributes to increasing local region's budget and promoting economic development and contributing to economic restructuring at the provincial level (Wurong Shil and Ninh T. H. Do, 2016). Developing tourism will create favorable conditions for local people living in the area to expand their businesses, increase their incomes and improve their living standards through the form of businesses of restaurants, hotels, rest houses, souvenir products, small travel services, etc. As a result, tourism positively contributes the local budget; (ii) Developing tourism will stimulate investment at the provincial level. Tourism is made up of different set of services. Since, investments in infrastructure are often low in profitability, the State often acts as a facilitator for tourism development. Consequence, all classes and businesses will investment in tourism development which will lead to investment in other sectors in the region such as construction, transportation, telecommunication, banking, etc; (iii) Tourism development will attract laborers and create more jobs. It not only brings jobs to the workers themselves but also attracts and creates jobs for other workers in other sectors in the region; (iv) Other socio-cultural aspects also are very important contributions. Tourism development contributes to the spirit of national pride, patriotism, and preserving and promoting the values of the national cultural heritage. Through tourism, people are changing the environment, satisfying the curiosity and at the same time expanding knowledge. Tourism creates conditions for people to open their understanding of cultural history, customs, ethics and social regimes (Le Thi Thanh Thuy, 2015).

The Midlands and Mountainous region Northern Vietnam has diversified natural resources, capable of diversifying its economic structure, with its strengths in mineral mining and processing, hydro-power, and tropical agriculture, sub-tropical and temperate products, integrated marine economic development and tourism. The region covers an area of 9,526.7 thousand hectares (accounts for 30.3% of the country's area), with an average population of 11,667.2 thousand people in 2014 with over 20 ethnic groups, of whom the majority are ethnic minorities. The Northern Vietnam is still the most difficult, with double the average poverty rate country. Moreover, due to limited infrastructure, labor resources and living standard, the organization of rural areas has disadvantages compared to tourism organizations in developed areas like cities.

This paper focuses on the following issues: (i) overview of tourism development in four selected provinces; (ii) Opportunities, challenges and major directions for tourism development in Northern Vietnam; (iii) Relevant policies recommendation to policy-makers in the region. The Midlands and Mountains in Northern Vietnam are bordered by the three provinces of Guangdong, Guangxi and Yunnan of China to the North, Laos to the West, the Red River Delta to the North. Its location is the great value for long-term development of tourism.

## **2. Methods**

In this paper, we combined both macro-level and provincial-level data on tourism to examine the contribution of this sector to the total Gross regional domestic product (GRDP) using national statistics and existing literature. Data collection was conducted in four provinces in Northern Vietnam, the most poorest areas in Vietnam as mentioned before.

Based on the research materials (e.g., research monographs, government statistical reports and legal documents, journal and newspaper articles), the authors synthesize issues and contributions of the tourism to four selected provinces as well as Vietnam's tourism. Important indicators are employed to explore the contributions such as number of tourists each year, the number of labor, the share of tourism in GRDP, and the investment growth rate of tourism development.

To have better understanding of the role of tourism, we applied the SWOT method to analyze the strengths, the weaknesses, the opportunities, and the threats of tourism development. In the analysis process, we delved into the analysis of two combinations: the strengths with the challenge; the weakness analysis with the opportunity to draw some key conclusions about appropriate solutions to boost tourism in the region.

## **3. Results**

### ***3.1. Contributions of tourism to economies***

Travel and Tourism creates jobs, drives exports, and improve living standards worldwide (World Travel and Tourism Council (2015, 2017). According the data, in 2016, this sector directly contributed GDP was VND 207,789bn (USD9.3bn) (accounts for 4.6% of total GDP); and directly supported 1,960 thousand jobs (accounts for 3.6% of total employment); visitor exports generated VND 184,811bn (USD 8,3bn). Compared to the world ranking (out of 185 countries), total contribution to GDP of Vietnam's travel and tourism was at 50 (absolute value in 2016), 104 (relative size in 2016), 17 growth rate (2017 forecast), and 38 long-term growth rate (2017-2027 forecast).

The Vietnamese government is paying more attention on tourism development (by increasing investment in this sector), Vietnam's tourism and travel attracted capital investment of VND 121,565bn in 2016 and expected to rise by 6.9% over the next ten years.

**Table 1: Number of tourists' arrivals in Vietnam**

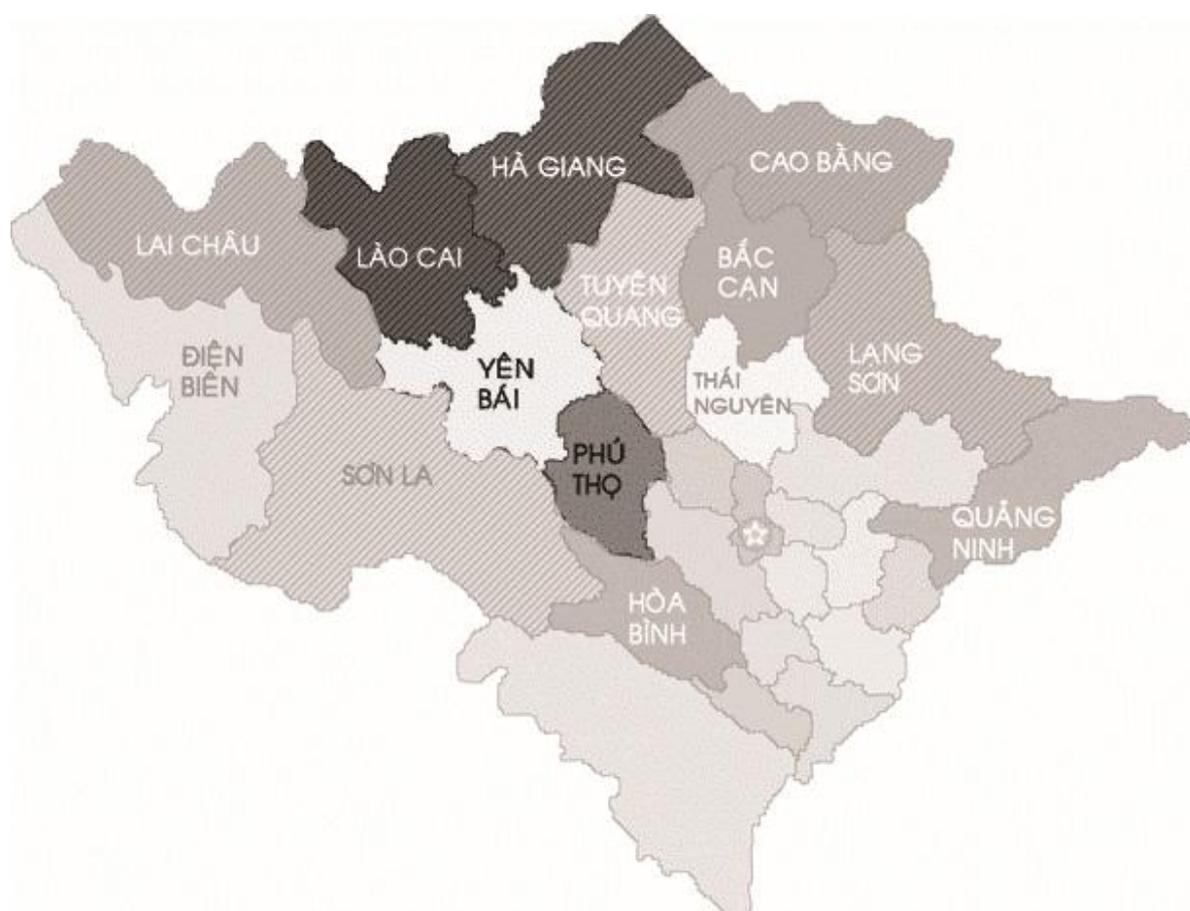
Unit: Thousands of Visitors

Year	Domestic tourists	International tourists
2010	28,000	5,049.9
2011	30,000	6,014.0
2012	32,500	6,847.7
2013	35,000	7,572.4
2014	38,500	7,874.3
2015	57,000	7,943.7
2016	62,000	10,012.7

Source: Vietnam National Administration of Tourism, 2017

As showed in Table 1, in 2016 Vietnam received about 10 million international tourists, in 2010 the number was 5.05 million, almost double in size, an increase of 12,09% annually. The number of domestic tourists has increased by 14,17% annually. An increasing number of tourists have opened up and invested in tourism development, making tourism a key driver of socio-economic progress through an increase in national budget, the creation of jobs and enterprises, and infrastructure development.

**Maps of selected provinces in Northern Vietnam**



**Table 2: Number of tourists' arrivals in the selected provinces**

Unit: Thousands of Visitors

Indicator	2010	2011	2012	2013	2014	2015	2016
<b>Number of Tourists</b>							
Ha Giang	n/a	273.0	310.4	376.5	403.9	575.7	652.4
Lao Cai	860.0	944.0	974.0	1,050.0	1,130.0	1,278.0	n/a
Phu Tho	392.7	429.9	624.0	665.3	731.6	752.2	833.5
Yen Bai	368.2	414.1	417.6	450.8	411.0	342.3	328.7
<b>Domestic Tourists</b>							
Ha Giang	n/a	257.6	293.9	356.5	346.3	516.8	591.7
Lao Cai	611.0	685.0	674.0	758.0	857.0	947.0	n/a
Phu Tho	389.8	425.6	619.4	660.6	726.5	747.2	828.0
Yen Bai	358.2	404.7	410.3	444.3	403.6	337.1	324.0
<b>International Tourists</b>							
Ha Giang	n/a	15.4	16.5	20.0	57.6	58.9	60.7
Lao Cai	249.0	259.0	300.0	292.0	273.0	331.0	n/a
Phu Tho	2.9	4.3	4.6	4.7	5.1	5.0	5.5
Yen Bai	10.0	9.4	7.3	6.5	7.4	5.2	4.7

Source: Ha Giang, Lao Cai, Phu Tho, Yen Bai, Statistical Yearbook 2011; 2012; 2013; 2014; 2015; 2016 [Online], Statistical publishing house.

According to statistics, in 2015, Lao Cai greeted nearly 1,3 million tourist arrivals, of which nearly 0.3 million were international tourists much higher than other provinces. Meanwhile, Ha Giang, Phu Tho, and Yen Bai welcomed 58.9; 5.1; 7.4 thousand international tourists respectively. The main reason is that Lao Cai has the most tourist attractions in the region attracted numerous tourists, such as Sapa and Bac Ha. The places have many hill tribes, as well as rice terraces, lush vegetation, and Fansipan, the highest peak in Vietnam. Another reason is the province is home of many ethnic minorities live making very diversity culture (Truong V. Dao, 2014).

**Table 3: Contributions of tourism in the four provinces' economies**

Indicator	2010	2011	2012	2013	2014	2015	2016
<b>Contribution of Tourisms in GRDP (billion VND)</b>							
Ha Giang	n/a	128.0	136.2	139.6	155.0	173.4	201.0
Lao Cai	224.0	292.5	254.2	260.1	285.0	310.9	n/a
Phu Tho	249.7	267.5	291.0	316.0	331.8	362.5	n/a
Yen Bai	179.4	204.8	214.6	231.8	233.6	236.3	249.0
<b>Share of Tourism in GRDP (%)</b>							
Ha Giang	n/a	1.5	1.5	1.5	1.5	1.6	1.8
Lao Cai	1.8	2.3	1.7	1.6	1.6	1.6	n/a
Phu Tho	1.1	1.2	1.2	1.2	1.2	1.2	n/a
Yen Bai	1.9	2.0	1.8	1.8	1.7	1.6	1.6

Indicator	2010	2011	2012	2013	2014	2015	2016
<b>Share of Tourism investment in Total development Investment (%)</b>							
Ha Giang	n/a	0.6	0.5	0.1	0.7	1.1	0.6
Lao Cai	2.0	1.9	3.6	1.0	1.5	1.5	n/a
Phu Tho	n/a						
Yen Bai	1.1	0.3	2.0	0.5	1.3	0.4	0.4

*Source: Ha Giang, Lao Cai, Phu Tho, Yen Bai, Statistical Yearbook 2011; 2012; 2013; 2014; 2015; 2016 [Online], Statistical publishing house.*

The Table 3 showed how the tourism contributes to the economies in term of GDP contribution. In spite of its importance, the tourism sector only contributed to 1.1 – 2.3% of total GDP. Lao Cai had the largest share of tourism, meanwhile Phu Tho had the lowest share. Based on the results, we can say that tourism still has the great potential for long-term development in the region. Although the tourism industry in Vietnam is still developing, it plays a key economic role in the country.

### **3.2. Opportunities, challenges and major directions for tourism development**

Based on the SWOT analysis framework and the current status of tourism development in the midland and mountainous areas in Northern of Vietnam, we analyzed the strengths, weaknesses, opportunities and threats to tourism development in the four selected provinces (see Table 4)

**Table 4: SWOT analysis in the tourism of the four selected provinces**

<p style="text-align: center;"><b>Strengths</b></p> <ul style="list-style-type: none"> <li>- Convergence of valuable cultural heritage unique.</li> <li>- The unique cultural status of many ethnic groups, especially ethnic minorities.</li> <li>- A rich source of tourism labor, especially</li> <li>- Travel is a important economic sector and expected to grow quickly</li> <li>- Many attractions: Ha Giang (10), Lao Cai (47), Phu Tho (18), and Yen Bai (7).</li> </ul>	<p style="text-align: center;"><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>- Tourism products are still limited, not really promote the true value.</li> <li>- The capacity of the tourism business enterprises is weak.</li> <li>- The lack of professional qualifications of low tourism workers and lack of skills.</li> <li>- Infrastructure is inconsistent between provinces and between tourist zones.</li> <li>- A limitation of travel intelligent investment (modern technology).</li> </ul>
<p style="text-align: center;"><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>- The local authorities are always interested in creating an open and equal investment environment.</li> <li>- The Communist Party and Government have been developing socio-economic infrastructure.</li> <li>- International economic integration.</li> <li>- Positive impact of Industrial Revolution 4.0</li> </ul>	<p style="text-align: center;"><b>Threats</b></p> <ul style="list-style-type: none"> <li>- The awareness and protection of the tourist environment has not been improved.</li> <li>- International integration create the high level of competitiveness within travel agents in Vietnam as well as international</li> <li>- Negative impact of Industrial Revolution 4.0.</li> </ul>

*Source: Authors' illustration, 2018*

### \* Strengths and challenges

Tourism in the midland and mountainous region in Northern Vietnam has many potentials and advantages. It is considered a spearhead economic sector, but in the process of development, tourism encountered competitive pressure from neighboring countries (e.g., Thailand, Laos, and China) is not small. Therefore, it is the competition from the deep integration into the international market as well as the spread of the 4.0 industrial revolution. Besides, the people's awareness of environment and cultural protection in the process of tourism development is rather low.

The issues raised in this analysis are:

- It is necessary to promote propaganda, raise awareness of people and tourists in tourism development, calling for all people to join hands to protect the environment and culture, especially ethnic minorities.
- It is necessary to actively and flexibly respond to market changes, to renovate and update information technology in tourism development.
- It is important to adapt to the needs, trends of tourism in the world and the region.

### \* Weaknesses and opportunities

Although the authorities at the provincial level are very interested, creating environment and policies to attract investment for tourism development. However, the technical infrastructure of tourism is weak and not synchronized, the quality of tourism labor is low, the competitiveness of tourism enterprises is low, tourism products are mainly raw and not well linkage. These are the advantages of tourism products.

The issues raised in this analysis are:

- It is needed to increase budget for information technology application in promotion, tourism promotion, application of flexible mechanism, ...
- It is needed to improve the quality of tourism human resources, especially manpower management, skilled manpower,...
- It is necessary to step up investment in, upgrade and improve the system of infrastructure and technical and tourist facilities in a synchronized and modern manner, meeting the requirements of competition, including the system of airports and houses. railway, road traffic system, public transportation, restaurant system, hotel, chamber room, museum system,...

The master plan for Vietnam's tourism development up to 2020, with a vision to 2030, with the objective to 2020, to become a spearhead economic sector with professionalism and infrastructure. technical equipment is relatively synchronous, modern; Tourism products of high quality, diverse, branded, bearing bold national cultural identity, compete with other countries in the region and the world. By 2030, Vietnam will become a developing country.

In order to contribute to the achievement of the above objective, tourism in the Northern Uplands, Vietnam is determined to: Focus on the development of tourism products based on the outstanding values of tourism resources to create different characteristics of tourism products; Developing tourism in depth, in the direction of

improving quality and professionalism; Rapid development to integrate with tourism development in the region, the country and the world.

In the master plan for tourism development in the midland and mountainous region in Northern Vietnam up to 2020, the target to 2020, tourism in the mountainous areas in Vietnam has a system of quality tourism products that be diversified, branded, competitive; Highlighting the cultural identity of ethnic minorities in the midland and mountainous areas in Northern Vietnam, attracting tourists to contribute to the preservation and promotion of cultural values of mountainous ethnic groups for tourism development.

### ***3.3. Relevant policies recommendation to policy-makers***

Based on the literature review and the findings, we propose several policy recommendations to policy-makers as following.

To concentrate on developing the most typical tourist form to bring into full play the region's tourism resources.

To promote the development of eco-tourism, explore the nature associated with caves, high mountains and midland, associated with the landscape. Develop geological tourism associated with science based on the Dong Van Plateau (Ha Giang).

Exploiting the outstanding characteristics of cultural and historical resources in order to promote the market of cultural tourists, sources and spiritual festivals based on the population of historical and cultural relics of Phu provinces. Tho, Yen Bai, Lao Cai. Community tourism, indigenous cultural experience in ethnic minority cultures in the mountains.

In addition, in order to promote the "topography" position with the system of border gates and border economic zones, it is necessary to develop border tourism in association with trade in border gates and public services.

#### **Strengthening cooperation and linking tourism development**

Provinces in the region have diverse tourism resources and favorable transport conditions for the development of tourism products with advantages. Linking tourism development in the region will contribute to promote the values of tourism resources to build tourism products characteristic.

Linking tourism development to other provinces in the region and other regions will contribute to promoting the value of tourism resources to build integrated tourism products attractive.

The content focuses mainly on the development of tourism programs and products, promotion of image promotion and training to improve the quality and quality of tourism labor.

#### **Strengthening information technology in promoting and promoting tourism**

Taking advantage of the support of national tourism agencies, domestic and foreign organizations to implement e-marketing, application of communication technology and social networks to improve the effectiveness of advertising.

Develop intelligent tourism model with new technology application programs to bring tourists unique products, services and experiences such as smart travel portal, digital map travel, residential management, mobile applications, traffic management, rescue and rescue, weather information, residential information, data analysis systems, and intelligent travel forecasting.

#### 4. Discussion and Conclusion

All in all, the case of tourism development in the Midland and mountainous areas in Northern Vietnam contributed new insights into our understanding of its contribution to provincial economies. We find that although the share of tourism sector in GRDP of the four selected provinces is rather small (about 2%) but it is still very promising sector. The findings of this study have several important implications for policy making. As expected, in order to develop tourism in the region, we should implement policies such as: To concentrate on developing the most typical tourist form; To promote the development of eco-tourism; to exploit the outstanding characteristics of cultural and historical resources; to strengthen cooperation and linking tourism development; to create favorable transport conditions, Linking tourism development to other provinces; Strengthening information technology in promoting and promoting tourism, Taking advantage of the support of national tourism agencies, Develop intelligent tourism model with new technology application programs.

Thus, policy-makers should focus more on addressing and strengthening tourism sector through the linkage within tours, tourism products within provinces in the region.

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# DEBT MANAGEMENT OF KALASIN MUNICIPALITY, KALASIN PROVINCE

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## **Abstract**

*The opportunity for local governments to loaned. It fiscal decentralization and as a result local governments less dependent on federal subsidies. it's usually defines the purpose of budgeting. Cannot meet the requirements urgent problem and improve proper economic for the contexts in the area. But the local debt must be carefully considered and the ability to manage local debt so that the people in the get debt by paying more taxes. Leading to local fiscal insolvency finally. This article is an analysis of the fiscal structure of Kalasin municipality. In the debt management of Kalasin municipality. It is a large municipality in Kalasin province. The debt is the highest in Kalasin province. Using financial indicators of Kalasin municipality compared with financial standard indicators. And analysis of loan management practices. To demonstrate the efficiency effectiveness and economy of debt management. Can be an example to other organizations.*

**Keywords:** loaned, debt management, municipality debt

## **1. Decentralization of Thailand**

In 1997, Thailand has set the decentralization to local community by Constitution of the Kingdom of Thailand in order to solve the inequality of public service which is cluster only in some area. Decentralization to local authority is on resource allocation from central government to local progressively and management of resource allocation according to its area context, state of society, culture, traditionally suitable to its local population. Permitting the public in the community contributing to its area management is to cultivate the democratic principle in the local community. To decentralization by allocating resources to local is the bottle-neck solving pattern of central government -

helping to moderate the old administrative structure which is complex, many steps, time-consuming - reducing of acting steps on service, authorizing the local public to manage, proficient to response the problem promptly. The local government, then, is closer to its public than central government, capable to provide service or generate public service more as its people need. Decentralization to local government and contribution of public in their area result in widely spreading resources of government equally and better developing of public living. Decentralization from central government contains of Political Decentralization, Administrative Decentralization, especially Fiscal Decentralization (Sakont Waranyuwattana, 2013)

#### Fiscal Decentralization

Fiscal is the heart of administration for success and relating with every unit in the organization, also relating to the micro and macro - economy of the nation. Moreover, fiscal decentralization to local is to spread resources to every parts of the nation equality in every social either central government or local government. With effectively fiscal administration, and worthy, will generate the stability and confidence in the economy leading to the goal - achievement. Fiscal decentralization to local consists of 5 factors: local fiscal autonomy, fiscal self-reliance, fiscal accountability, fiscal equality and fiscal sustainability (Veerarakruethip and committee, 2015). In order that local government proficient to administrate service and provide public service according to the local context differently on each continent and response to public's need quickly. Raising the public's living and promoting the economic growth of the area by public's contribution on budget administration. Local government can plan the budget itself and generating its own revenue as government's instruction with some subsidies and self - budgeting on expenditure under the law and regulation along with boundary from the central government through the fiscal year budget resulting in co-responsibility between local governor and public on usage of the budget. Therefore, the local governor should realize the public's need in the community as priority on public service while public in the community acceptable by their tax response for their public services from tax-paying in order that more develop in their community. Once the decentralization to the local government, the central government transfer all its 6 missions to the local government - basic infrastructure, promoting the quality of living, community social and security management, promoting of commercial and tourism investment, natural resource conservative and management, and culture and tradition perspective. In total of 245 articles from the transferring act of 50 departments from 11 ministries, mainly on basic infrastructure and public quality of living administration and social collocation. (Direk Pattamasirivatna and Kobkul Rayanakorn, 2009) These missions require load of budget presently, rapidly increasing of population effecting on urban expansion. Affecting to the budgeting of construction on public utility i.e. electricity, water supply, road, dredging canal, drainage, to prevent the flooding. While there is a rapidly economy growth, the local government requires budget to promote better quality of living of public in the community as standard of goods and public services providing as initiate by the central government. However, decentralization to local government is facing one important issue which is

inequity of horizontal fiscal balance. It means that different area local government having different in sociology and economy complex dramatically while large and small local government is having difference in potential and public service providing and fiscal potency. Relating with the difference of size of area - population - differencing economy, lead to the difference in tax criterion in most aspects such as difference in public's revenue in the community relating with tax - collection. Tax is the main revenue of local government effecting in the fiscal potency of that local government following by inequity in public service receiving on each community while the local government require equally budget to provide public service as initiated by the central government.

Though the central government will decentralize to the local government on self-earning from local tax collection in fact, the local government earns from tax collection only 10% of total revenue and still need subsidies from the government about 40% and 50% from the government's collecting revenue and allocation. The government subsidies are mostly come with an objective on the budget which is not related to the need for solving public's need in the community genuinely. Since they could not spend that revenue on investment or development activity, project which is immediately require and actually require by the community. Also the local government is the organization that response to the catastrophe and public disaster in the community at first i.e. earthquake, tsunami, storm, or various kinds of storms, flooding, drought, mudslide, human and animal plague, in order that release the damage using load and promptly budget. Therefore, fiscal administration of local government is limited on fiscal capability responding to its community. Since every working process of every unit in the local government require budget for driving the activity, project to accomplish as plan including the emergency budget. Hence, deficit budget is considered to be an alternative for raising more revenue by the local government. As above explanation, summarize causes of debt consolidation by local government can be divided into 3 factors. Firstly, due to the changing of social structure and economy of the community from rapid growth of urbanization throughout the require investment in many projects especially in basic infrastructure such as electricity, water supply, road, public service. Next, the central government decentralizes and transfers missions to the local government, the local government require more response of public service provider in consequently require more budgets on providing public service as well. Lastly, the central government subsidies as revenue for the local government tend to be decreasing as deficit balance policy of the central government (Sakon Waranyuwattana, 2008)

## **2. Local debt management concept**

Debt management by local government is to gather debt from other loan sources i.e. fund, monetary institution or bond issuance using of future money and paying interest as assigned condition. Since some problem is urgent issue in the community which could not wait for sufficient budget. In case that waiting for investment would result of more expense on the construction or more operates cost due to the inflation rate and more interest every year according with changing on economy variation. Local government then,

requires consolidating some debt. In Thailand local government can consolidate debt as initiated in the law means that local government in the provincial level, municipality, except sub-district administrative organization due to reflection of fiscal capability. The local government can do the debt consolidation by bond issuance, make loan either from ministry, bureaucracy, department, organization, corporate, overseas, or international organization. In case of consolidate from overseas. The local government should be concern on the risk of exchange rate which could cause more on loan rate and interest rate. Debt consolidation of local government in Thailand tends to increase every year but making loan through debtor who is general fund such as municipality promotion fund (MPF) and only some monetary institutions such as Krung Thai Bank, Government Savings Bank, Bank of Agriculture and Agricultural Cooperatives. Although, the central government opens for debt consolidation by local government under the interacted law and regulations, but the ministry of Finance, Public Debt Management Organization provide non-guarantee for debt which consolidated by local government in case the local government could not manage the debt itself. Therefore, the local government needs self-discipline on its finance as self-debt management. The debt consolidation's objectives can be divided into 2 types which are consolidation for assigned authority administration and consolidation for circulation of pawn shop.

### 3. Debt consolidation of local government in Thailand

In Thailand, there are 7,853 local governments distributed into 76 Provincial Administration Organizations, 2,441 municipals (30 city municipals and 178 Muang municipals, 2,233 Tambol municipals), 5,334 Sub-district administration organizations, and 2 special local governments (Bangkok and Pattaya). Debt consolidation of local government between 1998 - 30<sup>th</sup> September 2012 (only approved and consolidate from monetary organizations) in total of 673 governments which are 38 Provincial Administration Organizations as 50 % of total Provincial Administration Organizations and 673 municipals as 27.73 % of summary of 1,371.24 million USD (Pichitchai Kingpuang, 2012) and found that debt projects by local governments (excluding loan for circulation of pawn shop) as followings:

Table 1 Top 5 projects on loan consolidation amount (excluding loan for circulation of pawn shop) during 1998 - 30<sup>th</sup> September 2012 (only approved and consolidate from monetary organizations)

Order	Project Type	Total	Amount (USD)	Amount per project (USD)
1.	Land purchasing and office construction and building of local government project.	254 (27.88%)	193.65 (22.96%)	762,469.34
2	Reform and development of basic infrastructure project.	243 (26.67%)	278.74 (33.05%)	1,147,062.26

Order	Project Type	Total	Amount (USD)	Amount per project (USD)
3	Durable goods - purchasing project.	140 (15.37%)	54.69 (6.49%)	390,726.38
4	Fresh market operation project.	57 (6.26%)	34.21 (4.06%)	600,105.13
5	Slaughter house construction project.	43 (4.72%)	24.22 (2.87%)	563,310.36

*Source: Pichitchai Kingpuang, 2012*

#### **4. Muang Kalasin Municipal**

Muang Kalasin Municipal used to face the finance crisis in the fiscal year 2009 - 2010 due to the finance problem during the first six months of fiscal year 2009. Municipal has general revenue with subsidies in total of 4,408,667.77 USD lower than forecast revenue 2,977,234.65 USD and lower than last year in the same period 708,163.30 USD While the first six months of the fiscal year, the municipal spent 2,900,248.17 USD lower than forecast expenditure 4,485,656.28 USD and higher than last year in the same period 110,400.50 USD In the fiscal year 2010 during the first six months, municipals gain general revenue with subsidies in total of 3,433,305.78 USD lower than forecast revenue 2,710,312.30 USD and lower than last year in the same period 886,835.43 USD While the first six months of the fiscal year, the municipal had spent 2,228,108.88 USD lower than forecast expenditure 3,915,489.70 USD and higher than last year in the same period 674,076.03 USD Consequently, the municipal had solved the finance problem to success and received the King Prajadhipok's award on the transparency and promotion on public's contribution in 2012 - 2013, and promotion on network government private and social, King Prajadhipok's golden award 2014, Good Government award (large local government) 2016, Good Government award 2017 on outstanding large local government from Prime Minister's Office as the municipal with well debt management. The researcher, thus, is interested in analyzing the finance data of Muang Kalasin Municipal for analysis the debt management of Muang Kalasin Municipal.

##### **General circumstance of Muang Kalasin Municipal**

Muang Kalasin Municipal was established on 14th March 1937 as ordinance of Muang Kalasin Municipal establishment, covering 16.96 square kilometers, total of 13,434 household in the municipal, total 33,754 population as of registrar in 2017 (divided into 16,224 males and 17,521 females). The population density is 1,990 peoples per square kilometers (Registration Office of the permanent secretary in 2017)

##### **Basic structure**

Transportation/ road traffic: Dirt road 46 lines - length 8,140 kilometers  
Paved road 289 lines - length 12,228 kilometers

Total responsible road by municipal 542,760 square kilometers

Bridges 14 Concrete bridges 14 and 3 other bridges (overpass)

Transportation 1 bus terminal

Broadcasting tower 36 places in total voice area of 131 points

Water supply 13,242 households with water supply service

Electricity 13,449 households with electricity service with public electricity 5,300 points

Natural resource and environment Waste disposal 137 Rai - 2 places with total municipal waste of 31.57 tons/day, Disposal capacity of 58.1 tons/day (other local governments joining the disposal service the municipal gain revenue from other's disposal)

Economy 1 pawn shop, 1 slaughter house, 1 fresh market, 6 tourism places

Sociology 9 temples, 1 mosque

Muang Kalasin Municipal's monetary status in fiscal year 2017 as of 30 June 2017 comparing with monetary status in fiscal year 2010 as below

*Unit: USD*

<b>List</b>	<b>2017</b>	<b>2010</b>
Bank Savings	3,452,091.24	168,874.42
Accumulation	4,250,238.32	398,646.37
Reserve Fund	1,010,374.92	331,815.06
Total Cash	8,712,704.48	900,304.22

Outstanding loan

*Unit: USD*

<b>List</b>	<b>2107</b>	<b>2010</b>
Outstanding Loan	1,310,334.34	377,992.25 * (some debt consolidation)

\*Loan for night market - construction

Source: Ordinance expenditure in fiscal year 2010 and 2017 of Muang Kalasin

Municipal

Outstanding Loan in 2017 as follow

*Unit: USD*

<b>Order</b>	<b>List</b>	<b>Consolidate year</b>	<b>Loan length</b>	<b>Current payment period</b>	<b>Pay from</b>	<b>Amount</b>
1	Municipal promotion fund loan for general construction 31 projects	2009	10 year	Period 8	<ul style="list-style-type: none"> <li>• Revenue 42,730.79</li> <li>• General subsidies 42,730.79</li> </ul>	
	Interest rate				<ul style="list-style-type: none"> <li>• Revenue 3,445.77</li> <li>• General subsidies 3,445.77</li> </ul>	

Order	List	Consolidate year	Loan length	Current payment period	Pay from	Amount
2	Municipal promotion fund loan for basic infrastructure 11 projects	2010	10 year	Period 8	• Revenue • General subsidies	8,637.83 8,637.83
	Interest rate				• Revenue • General subsidies	800.52 800.52
3	Muang development in region fund loan for purchasing of mud sucker car and truck	2010	10 year	Period 14 and 15	• Revenue • General subsidies	27,966.43 27,966.43
	Interest rate				• Revenue • General subsidies	5,329.24 5,329.24
4	Krung Thai Bank (PLC) laon as of local government development loan project	2009	10 year	Period 8	• Revenue • General subsidies	19,028.41 19,028.41
	Interest rate				• Revenue • General subsidies	5,810.20 5,810.20
5	CAT laon for operating 3 projects	2013	10 year	Period 4	• Revenue • General subsidies	32,107.81 32,107.81
	Interest rate				• Revenue • General subsidies	228,650 228,650
	Total principle andd payable interest in 2017					306,475.15

*Source: Ordinance expenditure in fiscal year 2017 of Muang Kalasin*

From the above loan, most of Muang Kalasin Municipal's debt consolidates in long term for 10 years, choosing most fund from municipal promotion fund and Muang development fund in region which has source of investment fund supporting by the government with low interest rate. Consideration of improving basic infrastructure project - investment i.e. mainly in road and drainage due to the urbanization expansion, increasing of population, and urgent need in drainage development since raining will cause flooding and undergone drainage damaging to its public. Also, investment on mud sucker car and truck in order that sanitary the drainage and canal to solve that problem as the permanent asset - investment with more lifetime than repaying debt, considering as urgent issue for municipal to find budget solving the issue. In case municipal wait for sufficient fund,

would cause more investment for construction as of inflation and interest rate. Once the municipal is capable to solve the issue, result an indirect benefit to the economy system within Muang Kalasin Municipal. Since the economy in the area is good the municipal then, could collect more tax revenue to itself bearing in mind from higher trend of self - revenue collection every year. Debt consolidation by municipal investing on the revenue on return project, unseen in direct amount in return from the project but could cause higher trend on economic return every year resulting in gaining revenue for repay loan and interest accordingly while it will up grading to its public's quality of living.

Muang Kalasin Municipal has 5 revenues backdate as followings

*Unit: USD*

<b>Revenue</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Tax	530,804.67	588,135.65	665,682.84	709,649.77	778,921.89
License and Fee	298,284.60	327,455.71	377,575.97	404,635.06	393,350.55
Income from property	282,693.36	321,748.25	300,444.81	287,704.56	305,842.48
Income from infrastructure and commercial	18,789.45	26,828.07	26,765.85	39,162.10	15,3223.43
Other Incomes	581,052.56	239,702.91	227,971.72	188,746.85	232,746.93
Income for capital			135,680	52,750	200,000
<b>Total self-income</b>	<b>1,711,624.63</b>	<b>1,503,870.59</b>	<b>1,602,820.78</b>	<b>1,631,568.77</b>	<b>1,768,641.06</b>
Tax allocation	4,165,471.68	3,731,460.73	4,052,107.97	4,121,470.23	4,367,333.76
Subsidies	3,399,758.88	3,917,126.95	4,220,591.48	4,335,844	5,652,456.04
<b>Total income</b>	<b>9,776,855.47</b>	<b>9,152,458.27</b>	<b>9,875,520.23</b>	<b>10,088,915.28</b>	<b>11,788,430.86</b>
<b>Population</b>	<b>34,752 persons</b>	<b>34,437 persons</b>	<b>34,190 persons</b>	<b>33,965 persons</b>	<b>33,745 persons</b>
<b>Average income per capita</b>	<b>281.31</b>	<b>265.75</b>	<b>288.83</b>	<b>299.42</b>	<b>349.32</b>

*Source: Ordinance Ordinance expenditure in fiscal year 2013 - 2017 of Muang Kalasin Municipal, Office of Registration, Muang Kalasin Municipal*

Using of index on the ability of public debtor index (IMF and World Bank: 2005) calculating of debt service ration as the index for short term debt consolidation, this ratio must be less than 35-45%. It means that municipal is proficient to repay debt. Payable debt/ total revenue per year (306,475.15/11,788,430.86) result as 2.6% shows that municipal is adequate to repay debt. Furthermore, Miller and Evers (2007) present the capability of public debtor index at debt per capita 306,475.15 USD/ 1,143.42 persons. In average, net debt per capita is 8.65 USD per person per year comparing with average

income of population (total revenue of the municipal/ total population) found that average income per capita is 349.32 USD in 2017 and tend to be higher every year. Therefore, reflection that municipal is proficient to repay debt effectively and there is a steady on finance.

Muang Kalasin Municipal's expenditure backdate 5 years

<b>Expenditure</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017 (estimate)</b>
Central budget	693,042.79	674,801.99	704,445.89	753,612.50	1,686,681.41
Personnel budget (salary, wage, and temporary wage)	3,831,083.36	4,126,612.72	4,608,170.91	4,946,001.03	5,326,948.68
Operating budget (incentive, supply and equipment expense, utility bills)	2,713,751.49	2,529,473.14	2,562,198.13	2,871,590.63	3,063,976.05
Investment budget (durable object, land, and construction)	1,721,315.73	951,946.97	993,622.30	769,353.13	1,139,262.43
Other expense budget	3,227.89	806.97	1,613.94	1,613.94	1,646.22
Subsidies budget	373,894.61	568,648.61	614,750.95	545,735.83	569,916.07
Total expenditure	9,336,315.57	8,915,290.41	9,484,802.14	9,887,907.07	11,788,430.86

*Source: Ordinance Ordinance expenditure in fiscal year 2013 - 2017 of Muang Kalasin Municipal, Office of Registration, Muang Kalasin Municipal*

From the expenditure statistic, Muang Kalasin Municipal since 2013 - 2017 shows that the municipal spends central budget i.e. installment and interest expense, expansion of water supply more and more every year. This central budget is a part of list which the municipal set as emergency expense for public disaster or relieving mutual public trouble such as flooding, storming effect. Previously, public in Muang Kalasin Municipal had been affected to the flooding and storming as majority with hydrophobia scourge. Consequently, the municipal require budget for supporting public and urgently prevention in long term. Though, the municipal spends more on central budget, there is no effect on the operation budget on other projects for development of public's quality of living and public service providing in the area realizing from expenditure - statistic in 2013 - 2017 that operating budget has been increasing as well.

Noticeably the municipal, although, has more revenue and expense, personnel budget - salary, wage, temporary wage - of the municipal also increase every year and quite high comparing with other expenses budget which is higher ratio than central budget and operating budget and investment budget - in average at 7.75% yearly. Particularly, the municipal could use technology replacing labor, it will reduce the personnel budget for other project usage accordingly.

## 5. Conclusion

Debt consolidation by local government will bring opportunity to the local government on development on goods and service - investment as of its area and public's need. Nevertheless, the local government should consider on its self-debt repay competence with public's benefit on those investment. Allow public to join the project's prioritize selection in order to gain benefit and response on the budget together more than just earning campaign for local governor. Even though, the project is not direct return on investment, but it suitable to context of the area such as investment in basic utilities. The indirect return for public is encouraging the community's economy, better quality of life considering of performance, effectiveness, and value on debt consolidation will lead to public tax-pay willing to the local government. As of debt management, local government needs to plan for short and long term cautiously and carefully and always review its debt status regularly in order that planning to handle on emergency fiscal situation and having self-discipline on fiscal strictly. To achieve debt consolidation as plan in consequently results to the local government's credit for debt consolidation in future.

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# EVALUATIONS OF TOURISM ENTERPRICES ON INVESTMENT ATTRACTING AND DEVELOPING ACITIVITIES OF PHU THO GOVERNMENT

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## **Abstract**

*Local business firms have proved their roles in place development by no means less important than the FDI sector, hence they are key target customer of local government in place development. From place marketing approach, this study explores the effectiveness of active local government involvement in tourism development by determining how 76 local tourism firms assess the planning initiative of local government, their policy framework in developing tourism, the implementation of such policy and operation program and some other forms of government involvement. In-depth interviews with local authorities and local tourism firms show that...*

**Keywords:** *Local government involvement, place marketing, local tourism firm, Phu Tho*

## **1. Introduction**

In an effort to find a new way to grow, numbers of region, nation, as well as city have applied a marketing approach to planning to enhance their competitive capacity and to boost their local economies. This approach is called “place marketing”. The place marketing approach implies that the place follows a marketing philosophy in forming development strategies and adapts marketing tools and techniques to determine its target markets, and then to create the market offerings, which the place believes may satisfy the target market’s needs in a better manner than other places can do, to the target markets (Kotler et al. 2002).

The target markets of a place can be tourists, conventioners, corporate headquarters, export markets, manufacturers, investors, and entrepreneurs-local and international (Kotler, Haider, and Rein 1993). Business customer is considered a key target for every place, especially in developing economies like Vietnam. Many studies have been carried out to explore attributes that a place should develop to create the crowd-in effect of foreign direct investment (FDI) as well as to create a high level of investor satisfaction, especially in the developing world (e.g., Nguyen and Haughton 2002; Mmieh and Owusu-Frimpong 2004; Fung et al. 2005, Pham 2010).

Regarding local business firms, although their roles in place development are by no means less important than the FDI sector, their concerns have been largely ignored (Nguyen, 2009). Small firms sector in developing countries including Vietnam, is steadily growing and more and more dynamic in regional tourism industries (Ateljevic and Doorne 2003). Small firm development is being promoted as the path for enhancing local economies and offering more relevant development to marginal and/or peripheral physical, social, and cultural environments (2003). In place marketing literature, the local business firms, similar to FDI firms, provide jobs and incomes for place citizens and revenues for the government (Kotler, Haider, and Rein 1993). Hence, our concern is *how local government has been doing to attract and satisfy the target segment of local small firms, particularly local tourism firms?*

The role of government is in political, social, as well as economic life of countries for a long time. The government is required to involve at a higher level as the private sector is less developed and less innovative in many developing countries so as to fulfil material objectives (Jenkins and Henry 1982). Particularly in tourism, as it is highly fragmented and may involve many stakeholders in the delivery of combined diverse activities and services in forming a tourism product, the active role of the government is required in facilitating and promoting the tourism development (Jenkins and Henry 1982; Gunn 1988; Hughes 1994, Akama 1997, 2002). The government roles in tourism development take place at different levels: national, regional and local governmental levels (Treuren and Lane 2003; Cooper and Abubakar 2004). From the place marketing approach, our question is *how the local tourism firms assess the active involvement of local government in tourism development?* These firms' assessment is the antecedent of their satisfaction which is the core concept for place marketers - the local government, in building long-term relationship with the target customer - local firms.

The active role of the government is categorized into managerial and developmental, which involves not only in establishing policies and legislative frameworks, in managing the tourism sector, but also in the public investment relating to tourism (Jenkins and Henry 1982).

From *managerial active involvement* aspect, the local government sets the objectives, develops a specific development plan, and introduces needed organizational and legislative support as well as engages officers at all level in local government system in order to attain the objectives. However, a big gap between the planning efforts for tourism development and its actual implementation does exist (Brokaj 2014). As the result, determining how the tourism firms assess the tourism management of local government from policy framework to the implementation as well as the involvement of local authority personnel would help revealing the reasons why this gap exists and the suggestion for proper solutions.

*Developmental involvement* of the government is their operational role or that of its agencies in the tourist sector (Jenkins and Henry 1982). In most of developing countries, it requires public investment in tourism activities for the reason of the lack of robust tourism-experienced private sector. Literature on the effects of public investment in the context of developing countries shows that it positively affects, but it either negatively or crowds out

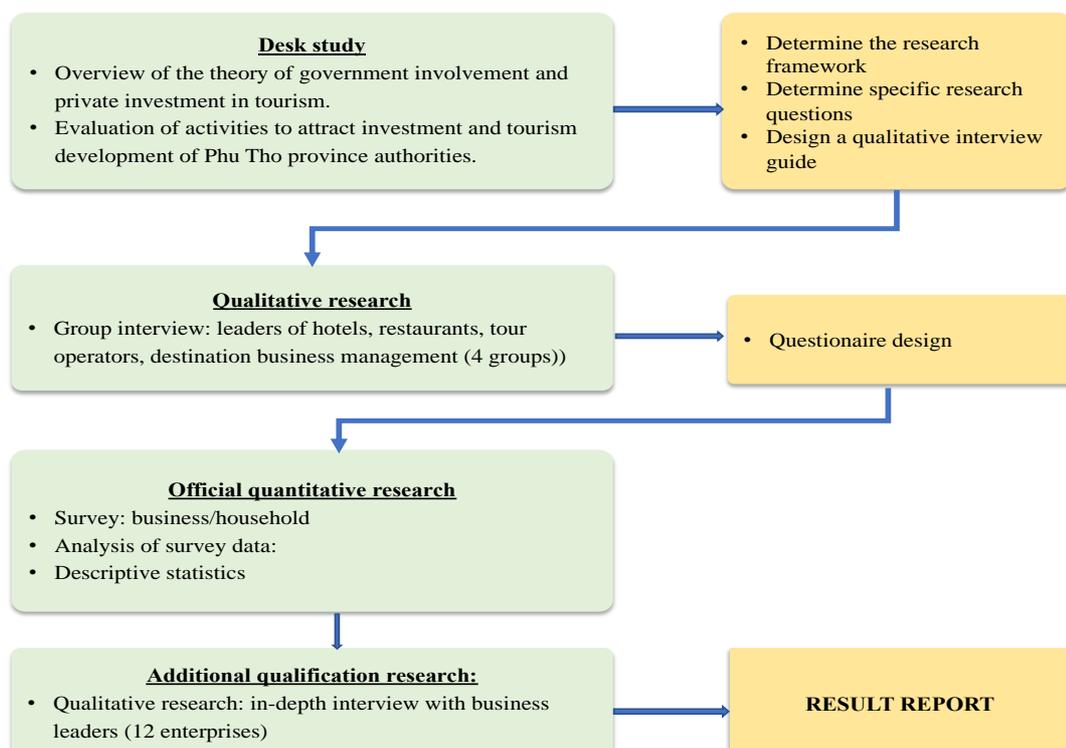
private investment (Bende-Nabende and Slater 2003; Nawaz and Hassan 2016). Particularly in tourism, it is argued that the high risk of investment in tourism enhances public and private sector collaboration in order to ensure the security of private investors (Petrescu 2011). It is the public sector to create favorable political and socio-economic environment, establish and provide transport infrastructure, communication and promotion network, and develop and preserve other attractiveness of the place for the private investment to attain a sustainable development in the tourism industry (Akama 2002). Public investment in tourism such as investment in infrastructure, in preservation and development of heritage, in supporting tourism community like traditional villages and households, would influence directly the private input (2002). Other public investment such as in promoting local tourism products, building tourism brand image for the province, engages in generating demands for local tourism (Nawaz and Hassan 2016). These public investments are assumed to affect private input indirectly by reducing the spending in promotion and advertising for instance, hence positively affect private output.

Accordingly, this study aims to determine the effects of both two aspects of active involvement of local government in attracting private investment in tourism and tourism development through testing how small tourism firms assess the local planning initiative, policy framework, policy and operation program implementation, local government officials involvement and the public investment in tourism. Better understanding of the local firms assessments is expected to be good measures for local government in tourism management applying place marketing approach.

## 2. Method

The research process is carried out according to the stages as demonstrated below:

### Research process



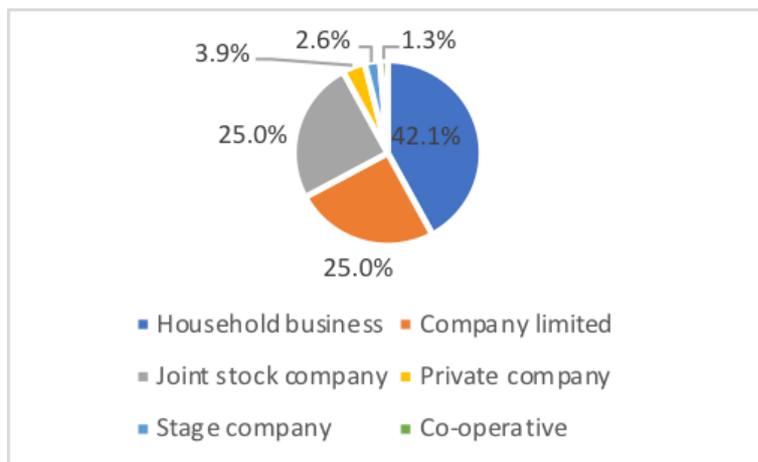
The desk research method is used to gather the information on:

- Local government involvement and private investment in tourism actual situation
- Attracting investment and tourism developing of Phu Tho province authorities activity

This stage helped us identify the research framework and select the model of studying the influence of local government involvement on investment intentions in tourism of small firms. The qualitative interview guidelines were designed accordingly.

Focus group interview method is used in stage 2 of quantitative research with the sample of 4 groups of tourism firm leaders. The content of the group discussion focused on policy issues and policy implementation; local officers managing the operations of enterprises of the tourism industry; public investment, and the influences of these factors on the investment intention of these enterprises. The questionnaire for the preliminary quantitative research was developed accordingly.

In official quantitative research, the data collection was conducted using interviewer-administered survey in December, 2017. The interviewees are firms and business households registered to serve tourists at Phu Tho Department of Culture, Sports and Tourism in the field of travel business. A stratified sampling technique was used to generate a sample based on types of business. The specific survey structure is as follows:



*Source: Survey data of the research team, 2017*

Data processing: SPSS software is used for descriptive statistic

Finally, we conducted in-depth interviews with 12 tourism firm leaders to discuss issues related to the quantitative research results to have insights into the small firms' investment intention and explanation of the research findings. We also looked for suggestion of proper solutions to leverage the local government involvement in investment intention of small firms in tourism industry.

### **3. Results**

#### ***3.1 Qualitative research results***

With specific characteristics in Phu Tho, its local tourism businesses can be divided into two groups: enterprises/cooperatives and individual business households. Hence,

survey results of business owners on investment attraction and tourism development in Phu Tho province were presented through the assessment of average value of all respondents and the two groups including individual business households and enterprises/cooperatives.

The calculation of the mean (average value) show that all activities which aimed at attracting investment and developing tourism of Phu Tho provincial government as assessed by the business owners, are only at the average or fair level. In most items, enterprises/cooperatives are more likely to make a positive assessment than individual business households

Items have means in 3.4 to 4.2 - more than average values

Factor	Item	Mean		
		All	Family business	Enterprise/c-operative
Tourism planning initiative	The suitability of the provincial tourism development strategy with Phu Tho resources and tourism resources.	3.73	3.55	3.86
	The suitability of the tourism development strategy of the province with the needs of visitors.	3.64	3.55	3.75
	The support of the public in the province for Phu Tho tourism development strategy.	3.41	3.22	3.55
Policy framework supporting to tourism sector	The policy to preserve and develop the provincial tourism products.	3.64	3.63	3.66
The implementation of policy and operation programs	The compliance of state management agencies for the tourism development policy in the province.	3.53	3.38	3.67
	The flexibility of the state management agencies in the implementation of Phu Tho tourism development policy.	3.56	3.52	3.58
	The development of the provincial action plan to implement the tourism development policies.	3.70	3.41	3.91
	The suitability of the tourism development action plan with the context of the province.	3.43	3.27	3.51

Factor	Item	Mean		
		All	Family business	Enterprise/c-operative
	The activities of state management agencies in propagating strategies and policies for Phu Tho tourism development.	3.49	3.39	3.60
Local government officer	The awareness of civil servants about the policies to encourage the provincial tourism development.	3.52	3.56	3.48
	Professional capacity of civil servant in the province.	3.49	3.53	3.45
Public investment that directly influences private input	Investment of the province to ensure the tourism landscape and environment.	3.64	3.56	3.74
	Investment of the province for the tourism business community.	3.74	3.69	3.79
	Provincial investment in tourism preservation and resource development.	3.64	3.59	3.70
Public investment in generating demands	Provincial investment in infrastructure development.	3.63	3.72	3.56
	Provincial investment to develop entertainment areas.	4.05	3.97	4.12

*Source: survey results of group authors (Dec 2017)*

Rated as fair, there are some items including three out of six items in the "Tourism planning initiative" factor; one out of five items in the "Policy framework supporting to tourism sector" factor; all five items in "The implementation of policy and operation programs" factor; two out of five items in "Local government officer" factor; all three items in "Public investment that directly influences private input" factor and two out four items in "Public investment in generating demands" factor. This apparently shows that business owners highly appreciate the efforts toward policy implementation and action programs to attract investment and develop tourism of Phu Tho province. Public investment that directly influenced private input is well acknowledged which denotes that the owners of business establishments fairly evaluate the investment efforts in providing direct support to enterprises and business households.

*Items have means in average value*

Factor	Item	Mean		
		All	Family business	Enterprise/co-operative
Tourism planning initiative	The support of state management agencies in the province for Phu Tho tourism development strategy.	3.39	3.38	3.40
	The support of investors to the tourism development strategy in the province.	3.06	3.00	3.11
	The suitability between the provincial tourism development strategy with the national tourism development strategy	3.38	3.28	3.41
Policy framework supporting to tourism sector	The consistency between tourism development policies and the provincial strategies	3.30	3.34	3.30
	The policy to encourage and support tourism firms to operate in the province.	3.33	3.25	3.42
	The policy to manage tourism business activities	3.27	3.06	3.41
	The policy to attract and develop human resources in tourism of the province.	3.30	3.03	3.50
Local government officer	The trust of civil servants in the provincial tourism development encouraging policies.	3.17	3.22	3.11
	The compliance of the provincial tourism development encourages policies of civil servants.	3.12	3.06	3.16
	Effort of civil servants to develop tourism in the province.	3.29	3.28	3.33
Public investment in generating demands	Provincial investment in promoting tourism products.	3.14	3.22	3.09
	Provincial investment in tourism branding development.	3.39	3.44	3.34

*Source: survey results of group authors (Dec 2017)*

Although the implementation of the policy is greatly welcomed, the policy framework supporting to tourism sector has not lived up to the business owners' expectation which indicates that they are not satisfied with the policies of attracting investment and developing local tourism. What is more, the "Local government officer" factor also has three out of five items rated as average, implying that more efforts should

be made by the local government officials. Investment activities to attract more visitors also need further improvement to ensure the objectives in local tourism development.

In general, not many differences exist between the assessment of business owners/cooperatives and that of business households in the activities of local authorities to attract investment and develop tourism in Phu Tho. Also, the survey results reveal that business owners/cooperatives are more aware and appreciative of the actions on investment attraction and tourism development of Phu Tho province since there are many items rated at a higher level by business owners compared to individual business households.

### ***3.2 Results of in-depth interviews with business owners and individual business households***

#### *Tourism planning initiative*

The enterprises think that the provincial tourism development strategy is suitable with Phu Tho and tourism resources because (1) government develops tourism depending on existed resources: destinations, cultures, transportation state and so on; (2) Government provides all of information about marketing programs to enterprises with clear instructions and follow them when they implement these programs to support if they need so government can understand exactly the tourism and Phu Tho resources.

Moreover, the tourism development strategy of the province also focuses on visitors' needs because of 2 main reasons: firstly, depending on the visitor perception about Phu Tho as a historical and cultural destination - they come to Phu Tho to go to Hung Temple - the government plans to develop intangible and cultural heritage of humanity such as Xoan singing, Mẫu Temple,... Secondly, government also focuses on developing some entertainment services such as hotel, park, hot spring and so on that helps the customer satisfy most when go to Phu Tho. That is the reason why enterprises highly appreciated the government's policy in preserve and develop the provincial tourism products.

In general, all of the Phu Tho tourism strategy follow the nation tourism development strategy. Besides, the support of state management agencies in the province for Phu Tho tourism development strategy is not clear. They have encouraged to develop tourism strategy however they had not have clear instruction or strategic orientation. Because of limited resources to develop tourism by themselves so government is welcome projects investing in Phu Tho.

There is no barrier for investor in tourism development such as administration procedure, special tax and so on. However, investor should be proactive to call the support when they need. In fact, the investors set priority for their business after that they help developing the provincial tourism. There are some big investors in hotels and entertainment sectors, however, they can not create a real tourism atmosphere for visitors, they are just for officers from other provinces come to Phu Tho for business purpose or for providing services for daily use of Phu Tho residents. Additionally, there are some projects uncompleted over the years, so it prevents to attract more investors.

### *Policy framework supporting to tourism sector*

In general, government encourage to develop and make good conditions for the province, however, government's financial resource is limited so they can not release finance support policy for the enterprises. About policy to manage tourism business activities, enterprises required to obey general business laws/ regulations. However the province has not release tourism business regulations so unfair competition has still existed.

In the policy to develop tourism of Phu tho province, government always focus on preserve the and develop provincial tourism product. In the plan to develop the tourism sector, government focuses on improving material and immaterial cultures such as temples, traditional trade villages and Xoan singing (Hung, Hung Lo, Lai Len temples,...).

Human resources have important roles to quality of tourism services, however, this factors have not focused because some reasons: (1) scales of enterprises are still small; (2) the number of visitors are limited and it's in high season on Hung temple festival only ; (3) Enterprises and government do not realized the relationship between the service quality and human resources ability.

### *The implementation of policy and operation programs*

Enterprises are highly appreciated the compliance and flexibility of the state management agencies in the implementation of Phu Tho tourism development policy. State management agencies follow the implementation process to support for the enterprises, whenever enterprises have problems, they always have enough and clear information and instruction to solve with out any difficulties caused by officers and processes. Government's policies and programs are consistent. However, in some cases, because of controlling ability, there are unfair competition between enterprises but the government have no solutions to solve as mentioned above.

Moreover, to develop tourism, provinces also develop suitable action programs to implementation on policies. Phu Tho have invested in developing transportation connecting heritage destinations such as Lãi Lèn shirn with Hùng Lô, An Thái, Kim Đới temple; Viet Tri, Tan Son and Thanh Thuy. With their effort, Xoan singing is recognized as Unesco world heritage. And Province always try to design action plans to fullfil their strategy however strategy implementation has not clear results, there are some projects have uncompleted over the time and it prevents other investments.

### *Local government officer*

Almost of government officers are determined to Phu Tho tourism development, they are aware of the role of tourism development in improving the standard life in Phu Tho province. They consider to develop Phu Tho tourism to attract visitors during the year (not just in Hung temple festival), they try to develop tourism product that helps visitors having best experiences. Besides their effort, their capacity is still limited in building the trust with enterprises. Although government's policies and implementation are appreciated, enterprises are not reassured whether they can get the support from government's policies to their investment in long term. They have just invested circumspectly in their controlling ability. That is the reason why the Phu Tho's tourism development are in low speed.

### *Public investment that directly influences private input*

Up to now, almost tourism destinations and services in Phu Tho are public investment to create tourism products for province such as tourism preservation (Hung, Hung Lo temple, Xoan singing) and develop traditional trade villages (traditional hat, weaving, chung cake and so on) (except some project invested by private enterprises but uncompleted). They also have project to protect province's landscape and environment such as Văn Lang park, Xuân Sơn forest and so on. Tourism enterprises depends on these to design tours and develop their businesses.

### *Public investment in generating demands*

With tourism development strategy, besides investment in Hung Temple, government also focus on develop other interesting destinations as mentioned above to attract visitors during year such as entertainment destinations such as spring hot water in Thanh Thủy, Xuân Sơn national forest and so on. Moreover, to advertise their brand, they has it own website and material to introduce about their destinations and follow national communication programs.

## **4. Discussion and Conclusion**

Through investigation with questionnaire and in - depth interview with enterprises having business on tourism and tourism service, this research evaluated the actual situation of attracting and developing tourism activities of Phu Tho government. In general, government activities that focuses on attracting investment and developing tourism in Phu Tho evaluated in more than average. This research also showed factors that evaluated at average and more than average value. Moreover, the depth interview Phu Tho leaders also supported the qualitative results and point out the reason of the actual situation of attracting and developing tourism activities of Phu Tho government.

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# LIFESTYLE AND ACTIVITIES OF SUBURBAN PEOPLE

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## **Abstract**

*This paper investigates lifestyle and activities of suburban people in Khon Kaen city. Qualitative methodological approach was implemented in the study with in-depth interview and non-participatory observation, which were used as research instrument. Key informants included seven labour-aged people who lived in Khon Kaen suburban village. Data analysis was done by the content analysis method. Research results found lifestyle and activities of suburban people including 1) suburban people who have a good living; they had high income, and they had many activities to do such as shopping and travelling. 2) Suburban people who have a moderate living; they had middle income. Activities they did adhered to religious practices, and they preferred to stay at home for relaxing, and went to shopping sometimes. 3) Suburban people who have a difficult living; they had low education and low income. Their activities related to survival practices such as collecting natural resource for livings.*

**Keywords:** Activities, lifestyle, suburban people

## **1. Introduction**

Thailand is agriculture-based country. Mode of production of the country primarily based on subsistence mode in which most products have made for household consumption (Pothisita, 2012). Natural resources has used as a main source of household production, and production yield is exchanged with other households when production yield is over supplied. In the past, most Thai households were poor, and they lived in the countryside. Many Thai households has been living as the extended households in which several households have lived together at the same area. They help each other to conduct household production, and they exchange their labour forces with neighbors. Therefore, it is to say that relationship within community is based on kinship system which link people together (Yothakong, 2011).

Decades ago, Thailand launched the National Economic and Social Development Plan as a guideline for the development of the country. The plan has implemented since the first issue (1961-1966) to the twelfth issue (2017-2021). The plans have focused on development of economic, transportation, and infrastructure of the country. This becomes a turning point of Thailand. Production mode of the country has changed from agriculture-

based production to industrialization-based production in order to meet the capitalism, which has been global trend of economic development. Moreover, the change has resulted in the city growth and migration phenomenon from rural areas to urban areas (Palen, 1987). The changes have occurred rapidly, and it has affected development on economy, society, politics, and technology. Rate of development in industrial and service sectors has been increasing, and urban area of the city has expanded (Leoprapai, 1998). It was found that rate of urbanization growth in Thailand has increased from 20 percent in 1960 to 55 percent in 2017 (World Urbanization Prospect, 2014)

The expansion of urban areas has led the fragmentation of people in urban areas to suburban areas, where socio-cultural context is still presented as rural lifestyle (Guest, 1998). In Thailand, suburb area often refers to the Sub-district where located next to boundary of city downtown. Due to city expansion, those sub-districts are full of well-prepared infrastructure as same as in urban area. Although city expansion provides several types of development to suburban areas, it resulted in the decreasing of natural resources, and lifestyle of people in suburban areas has changed into urban lifestyle. Such development encourages suburban people to move into urban areas in order to seek for better opportunities in life so that lifestyle of suburban people has changed into urban lifestyle (Sawaengdee et al., 2007). Moreover, the development causes of capital accumulation. Lifestyle of people is more convenient. People have more chances to choose which lifestyles are suitable for them in accordance with the Capitalism (Bourdieu, 1984). Those lifestyles, thus, are based on everyday life and activities of suburban people which are different from in the past.

This paper has set a research question on how lifestyle and activities of suburban people has changed, while research objective is to investigate lifestyle and activities of suburban people who work in urban area. Scope of the research focuses on two issues which are lifestyle and activities of suburban people who work in urban area in order to understand lifestyle and activities of suburban people in a context of Globalization.

## **2. Method**

This research focused on lifestyle and activities of suburban people. Qualitative methodological approach was applied to the research. Unit of analysis was individual. Key informants were divided into two groups included 1) village stakeholders included village headman, village health volunteer, sub-district healthcare officer, community development officer, plan and policy analyst, and community seniors. This group of key informant were interviewed to collect data about village background. Another group were ten suburban people in Khon Kaen city. In-depth interview was applied to collect data from those suburban people with inclusion criteria included 1) key informants were aged between 18-59 years old, 2) key informants worked in Khon Kaen urban area, and they lived in suburban area where located within 20 kilometres away from the city, 3) key informants have lived in suburban area at least 1 year. Those key informants were interviewed to collect data about lifestyle and activities of suburban people. In-depth interview and non-participatory observation were applied to the research as research instrument. Research

area was “Ban Sai Ngarm” village (pseudonym), where located in Khon Kaen suburban area. Data collecting period was during in January to March 2018, and content analysis method was used to analyse data.

### **3. Results**

Research results were presented as several parts included village background, lifestyle of suburban people, and activities of suburban people. Each parts were presented as following details.

#### ***3.1 Village background***

A village named “Sai Ngarm” (pseudonym) is a suburban village located in the Southwest of Khon Kaen city. The village is 18 Kilometers away from Khon Kaen urban area with 1,559 of village population. The village locates near a natural creek named “Kaeng Nam Ton”, and the village is also rich of other natural resources such as forest and soil. The village settles on the flat plain area, and soil surface is sandy loam, which is suitable for cultivation.

People in the village like to settle up their houses at center of the village, while their agricultural lands mostly are out of the village. Villagers in Sai Ngarm village lived with simple lifestyle. They grew vegetables and fed up animals for household consumption. However, over a past decade, the village had been changing due to modernity which invaded in every single area of the rural village. The village was influenced by urban society. For instance, people in the village built their houses as the two-storey concrete house instead of one-storey wood house, or someone dressed up in urban style. The village then was full of combination style between rural style and urban style. Although the village was getting closer to urban lifestyle, the villagers still tied with kinship system and traditional lifestyle.

Main occupation of the village was agriculture. Many of villagers did rice farming, while someone were working as contracted labours. Some villagers also worked in service sector at urban area of Khon Kaen city, for instance, laundry service, housekeeping task, etc, and some worked in the industrial factory, where located not far from the village. Government jobs such as teacher, deputy officer, nurse, or public health officer also found in the village. Those jobs reflected that people in the village set priority to education, and it resulted in achievement on government jobs in some households. In addition, SMEs were found as well. Some households had big grocery shops or small grocery shops in the village, while some had own construction shop, mobile shop, or agro-trading shop.

Socio-cultural of the village still based on religious practices. Most villagers especially seniors always participated in traditional practices such as making merit at temple, or attending traditional events named “Boon Hee Sib Song Klong Sin See”. There was a big temple located in the village. The temple was considered as a place for assembling people. Most of the events set up at the temple, and it allowed people to keep relationships each other. Infrastructure of the village also was provided to villagers. There were child development center and the opportunity expansion school in the village.

Regarding healthcare service, the Sub-district Health Promotion Hospital set up at center of the village. However, suburban people lacked of chance to access some services by the Sub-district Health Promotion Hospital because they had to work in urban area during daytime. In addition, there were some occupation group presented in the village such as the handcrafting group.

### ***3.2 Lifestyle in suburban area***

In the past, Sai Ngarm village was a rural village that people used their simple lifestyle, and their livings relied on agriculture. Kinship system ran relationships among the villagers. When urbanism came to the village, people from outside village had moved to settle the residence at the village. This caused the village was integrated by traditional lifestyle and modern lifestyle. Infrastructure of the village such as water supply, electricity, and transportation system was developed. Villagers were able to travel to the city easier by private car or public buses. The villagers likely to do business in urban area. For example, shopping at the market or convenient store, or medical treatment at the provincial hospital. Moreover, urbanization caused differences on land use change in the village. There were more grocery shops in the village, and the community market was available for the villagers who want to buy or sell agricultural products.

“Sai Ngarm village” is a village located close to urban area, so the village took the culture of urban society into the village. Relationships among villagers had been changing from collective relationship to individualism. Development of economic in the village caused villagers had own lands for agricultural activities. Those who did not have own lands had to work in the city. In 1998-2002, villagers suggested that it was a golden period for villagers. Economic growth caused people in the village decided working at industrial estate where located not too far from the village, while others worked as contracted labour in service sector. It resulted in a shift of village’s livelihoods which was able to divided into 3 period as follows.

**Period 1 (before 1997);** in this period, it was a traditional rural society. The villagers had poor economic status, so they sustained their livings with simple lifestyle. Foods were collected from natural resources. This is confirmed by Woods (2011) who found that people’s living in prehistoric era was based on nature. In this era, lands for cultivation was limited, so villagers did not have to work outside the village. Villagers lived and adhered to local tradition. They helped each other. Money is quite valuable, since the cost of living was very cheap. This findings is confirmed by Eiwswong (2014) who found that traditional rural society was rich in natural resources. Commercial purpose had not yet introduced to traditional society, and no facilities to support lifestyle as much as in the present. However, in 1994, many villagers sold their lands to the outsiders because price of the lands was increasing. Agricultural products including livestock was at high selling price. Therefore, villagers decided selling lands and livestock, and they bought a variety of facilities to support household’s needs such as vehicle.

In 1997, Thailand had faced with financial crisis (aka Tom Yum Kung). The crisis started in Thailand. Thai government was forced to float the Baht (Thai currency) due to

lack of foreign currency to support its currency peg to the U.S. dollar. (Bank of Thailand, 2013). The crisis severely affected the living of Thai people. Many business, such as housing companies, construction business, industrial sector, and financial institutions were severely affected. Many companies had closed down with debt. A huge number of employee were laid off. Every family had to save money. Unemployed people in the city could not return home because they migrated out of the village for a long time. Those who work in many companies have been confiscated, while their children were not able to continue studying because their parents had no money for education expense. These severely effects also hit Sai Ngarm village unavoidably. Villager's lifestyle turned to be simple again.

**Period 2 (after 1997 to 2006);** financial crisis caused livelihoods of villagers especially on household economic status. Villagers of Sai Ngarm did not have any jobs or incomes to support their livings until 2002. Country's economy was getting better in the government of Thaksin Shinawatra, a Prime Minister. Villagers had a chance to work outside the village again. They worked in industrial estate, and some worked as contracted labour at urban area of Khon Kaen city, or they migrated to worked over the country where jobs were available for them. This findings was supported by Kanchanapan (2011) who found that rural societies have been entering into a new form of social structure. Several governmental projects took place, and villagers received benefits from the projects such as the village fund which allowed villagers made a loan when they needed, or the 30 Baht Health Care which provided health security to Thai people (National Health Security Office, 2015). The villagers were able to access medical service by paying 30 Baht of medical fee. Moreover, the project had well-managed operation. There were the ambulance cars available for every single area of Thailand. The villagers did not had to pay for transportation fee. This was quite different from the past that villagers had to rent a car to take patients to the hospital, and both transportation fee and medical fee were quite high. The 30 Baht project could save extending the life of the poor people. In addition, the project was more effective when the 30 Baht project was run by Sub-district Administration Organization. This change would provide more accessibility of medical treatment to villagers.

**Period 3 (2007-present);** an era of economic growth. Capitalism played an important role in villager's lifestyle. Many villagers went to work in industrial areas and urban areas due to a high wage they received. Working in industrial areas and urban areas helped them improving household economic status. Villagers had more opportunities in life, and they got more properties and compensations from the state. Quality of life among households was better with a lifestyle combination between traditional lifestyle and urban lifestyle. The findings supported Kearney (1996) who found that rural communities had been changing in the context of globalization. He also suggested that most of rural society in post modernity era had characteristics which is a combination between localism and urbanism. It was not a traditional peasant society anymore. Suburban community located close to urban area, so the community might receive influence of urban culture easily. However, traditional lifestyle was still exist. Villagers still fed up their livestock, grew vegetable, collected wild foods from forest, etc, while someone worked outside community such as working in industrial areas. The income of this group will be fixed, and they

earned regular income rather than those who still relied on traditional way of life. Those who worked in the factory would earn 300 Baht daily wage, and working condition in workplace was good. It was different from traditional lifestyle which villagers had to find wild products in the forest.

According to statement above, it is found that villagers did not only focus on income, but they also focused on working condition. Although it was a hard work, working in industrial factory provided regular income and comfort facilities, while natural resources nearby village were decreasing. However, it is found some households with good financial status also had activity related to natural resources as well. Those who had big houses and facilities, they would feed up the cattle within resident area. The findings was supported by Rigg and Ritchie (2002) who found that rural people had changed their roles and activities. They turned themselves from the producers to supply their households into the producers who played important role in the market. They could make money and move up their social status. Selling price of cattle currently is high. Now the villagers could sell cattle with a price of 20,000-30,000 Baht per unit, while in the past the villagers sold cattle 3,000-4,000 Baht per unit. Moreover, the trade of cattle could be made easier than in the past. The middlemen would come to the village directly to buy cattle. Then, the middlemen would sell cattle at the cattle market, where located not far away from the village. Now there are estimated 20 percent of villager in Sai Ngarm village who raise cattle. The study found that villagers who raised cattle might not be poor people as in the past because they could make a lot of money from the cattle trade. In addition, villagers who have their own rice field, it is found that nowadays the fields are sold to the capitalists from outside the village.

From statement above, villagers have lifestyle which is a combination between rural lifestyle and urban lifestyle. Some villagers do not conduct rice farming anymore, since rice fields are sold to the capitalists from outside the village. They, thus, turned to work in the factory. Some villagers are still working in rice farming. They tried to do rice farm with integration method because nowadays the current farming does not have to do throughout the season. It has more facilities to grow rice. Modern technology helps farmers to do rice farming easier. Some farmers could hire contracted labour to do farming in order to save time, while farmers have more time to do other jobs in the city. According to findings above, conclusion of lifestyle of suburban people is presented as follows. (Table 1)

**Table 1: Lifestyle of suburban people in Khon Kaen city**

<b>Period Lifestyle</b>	<b>Period 1 before 1997</b>	<b>Period 2 1997-2006</b>	<b>Period 3 2007 - present</b>
<b>Lifestyle</b>	<ul style="list-style-type: none"> <li>- Agrarian society – subsistence mode</li> <li>- Simple lifestyle</li> <li>- Rely on rural traditions</li> <li>- Kin-based relationship</li> <li>- Non-monetary system</li> </ul>	<ul style="list-style-type: none"> <li>- Economic growth</li> <li>- People started working out of community or working in the factory</li> <li>- Better livings</li> <li>- Money is used to</li> </ul>	<ul style="list-style-type: none"> <li>- Combination between rural lifestyle and urban lifestyle</li> <li>- Capitalism flows, money becomes primarily concern in life</li> <li>- More commercial-</li> </ul>

<b>Period Lifestyle</b>	<b>Period 1 before 1997</b>	<b>Period 2 1997-2006</b>	<b>Period 3 2007 - present</b>
	- No facilities	exchange facilities for themselves or families	based production - People started working out of community or working in the factory - Capital accumulation- resulted in better economic status - Active life and competitive life for owning resources

### ***3.3 Activities of suburban people***

This part focused on activities of suburban people who spent their life as the commuter. It was found that suburban people were influenced by location of village where was close to urban areas of Khon Kaen city. Therefore, suburban people and urban area had related to each other through socio-economic aspect. Sub urban people took urban culture and activities into village. Conditions related to activities of suburban people were presented as following detail.

**1) Recreation;** is one of activities that suburban people loved to. Types of recreation were designed based on several conditions. For instance, the type of work that is determined by time, economic status in which money is the main factor in life, and age difference among family members. The study found that people in the suburban areas who had a stable job. They would have high income and owned a lot of property. Those conditions resulted in good economic status of the family. They had a good quality of life. They had many activities to relax themselves. The activities they did normally reflect family's status and desires such as leisure trips to tourist attractions on the weekend. This symbolic consumption was generally expressed by the Generations X people and Generations Y people. This findings was supported by Piriya phonphiroon and Pangpond Rakamneukit (2007) who found that people nowadays have more consumption of signs. For instance, the selection of foods and restaurants, shopping luxurious facilities, going to the mall to shop for convenient amenities, or other activities that are often associated with technology. While group of suburban people, who were moderate life, would have regular jobs which provided middle income to them. Thus, activities they did mostly were reasonable, and they would do something which was necessary to their families. Activities they did such as leisure activities, shopping some necessary items. They normally shop and used the items that were usually available in the market. Suburban people who were faced with difficult life. Their options in lifestyle were quite limited. So, their activities they did mostly related to recreation and survival strategy. For instance, they spent time to find wild products for household consumption. In addition, the items that they used in daily life were usually found in the village.

**2) Community-related activities;** are activities that suburban people participated together. Most of activities related to religious practices, traditions, and local culture. According to an interview with suburban people who participated in community activity, the Generation X and Generation Y people were main group that participated in community activities, especially religious activities. The findings was confirmed by Gray et al (2016) who suggested that those two group of people were still adherent to local traditions. When they had day-off, they usually went to temple to make a merit. While suburban people participated in some local rituals and traditions depended on their time availability. They could not participated in all rituals and traditions because they had regular job to do. One of key informant stated about the participation of local rituals and events as following detail.

“I occasionally go to temple for making merit. If the Buddhist day is on the same day as my day-off, I will go with my children. But I cannot attend every events because I have work to do”

(Ms.Nongluck (pseudonym))

Moreover, suburban people who had a middle financial status gave an interview as follows.

“In the past people in the village spent time together to do activity in the temple, but now they have to work. They do not have time to do community events. Moreover, people think about themselves more and more. They would not become a member group if they do not get any advantages. If there are some advantages for them, they would participated in. for example, the village fund. The fund has some money for villagers. The villagers are happy to be a member of the group”

(Ms.Daoreung (pseudonym))

It is clear that suburban people still have the desire to participate in community activities, such as bringing children to temples to learn traditions and religious practices. However, participation of group would be interested when there are some benefits for villagers. It is noted that suburban people, who have middle quality of life and poor quality of life, would be applying for community group such as the village fund because there are loans to make when they needed.

From the above, suburban people are trying to adapt themselves. In the past, they had lived with a simple lifestyle, but currently "money" is the main factor for villagers to select lifestyle and activities. Suburban people try to seek for money and resources in order to sustain livelihoods of themselves and households. Therefore, they choose to move to work in urban areas because they believe that working in urban areas would provide better economic status to their households. When they come back to live in suburban areas, they take urban lifestyle activities into suburban areas. Researcher divided the lifestyle and activities of suburban people which related to their livelihoods into 3 groups as following detail.

**Table 2: Activities of suburban people in Khon Kaen city**

<b>Livelihoods Activities</b>	<b>Poor livings</b>	<b>Fair livings</b>	<b>Well livings</b>
<b>Activities</b>	<ul style="list-style-type: none"> <li>- Main purpose of activities is for household consumption, occupation, or survival.</li> <li>- Relying on natural resources. For example, agro-activity on their lands, or make natural-based household facilities.</li> <li>- Being contracted labour in vary business.</li> </ul>	<ul style="list-style-type: none"> <li>- Activities are more reasonable</li> <li>- Activities related to religious practices such as making a merit at temple</li> <li>- Activities of participating community event such as be a member of the village fund</li> <li>- Recreation such as doing housekeeping tasks with household members, or go shopping. However, activities are depending on household economic status and age of household member.</li> </ul>	<ul style="list-style-type: none"> <li>- Activities are variety.</li> <li>- Activities were made in order to meet household's desire</li> <li>- Consumption of signs such as eating at restaurant, or shopping some luxurious goods.</li> <li>- Activities for recreation such as travelling with family in weekend.</li> <li>- Shopping some luxurious goods or high price facilities. People who were generation X and generation Y liked to do shopping.</li> </ul>

#### **4. Discussion and Conclusion**

The study of lifestyle and activities of suburban people in Khon Kaen province can be concluded into three pattern as following details.

1) Suburban people who have a good living and high income; it is found that this group owned many resources. When they worked and were able to collect money, they had several ways to accumulate capitals such as economic capital, social capital, cultural capital, and even symbolic capital. They choose to do activities depending on their desire such as family vacation, shopping on the weekend, eating at their favorite restaurants, or shopping luxurious goods. These activities refer to their identity and social status.

2) Suburban people who had moderate living; they normally have reason to choose activities. Most activities would be considered based on their incomes from regular work and necessities of livings. Activities often relate to religious practices such as making a merit at temple. Moreover, they are members of the group within community in order to receive some benefits, such as being members of the village fund to get a loan. They usually spend their time with family at home on the weekend, or go to shopping mall to buy the necessary items. It is noted that most items they bought usually are available in the market.

3) Suburban people who had difficult living; people of this group had low education and low income. They had a limit in life, so they cannot do activities as they wish. Most of activity relate to survival strategy including collecting wild foods at the forest, working in the rubber plantation to get a place to live in return. However, they still have some time for relaxation.

The results also found what makes differences of lifestyle and activities of suburban people. Occupation and economic status are major conditions relate to the differences of lifestyle and activities among suburban people. It is to say that different occupations would lead to different economic status among suburban households. The differences of economic status among suburban households also relate to lifestyle and activities of people. This findings is confirmed by Bourdieu (1984) who investigated a concept of social stratification. In this study, behavior of suburban people and social stratification can be linked as following details.

Each group of suburban people has different lifestyle and activities including **1) sociable person**; who mostly are those who success in life, and they have high income, properties, and other capitals. They are educated, and have high confidence in themself. Social image is important to them, so they usually present themselves with a unique lifestyle. They usually perform their identity through activities such as shopping luxurious goods, or eating at a high-class restaurant. **2) Those who want to succeed**. This group owns some capitals. They mostly are well-educated, and be responsible in work and life. This group primarily concern activities relate to recreation or family vacation. They have middle income, and like to consume trendy fashions. They have wide-knowledge, and be reasonable in life. Therefore, they have belief which adhere to social morals. Regarding consumption in daily life, they love to consume mass-branded products. Their lifestyle and activities are about families, temples, clubs, and nation. And **3) the struggling person**; they mostly own less living capitals, and low-educated. They have limits in life, so their social engagement are quite low. They are quite concern their daily expenses. They prefer to use the same old items in life so that their lifestyle and activities are for living rather than recreation.

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# **PUSH-PULL NETWORK: FACTORS AFFECTING THE MIGRATION OF LAOTIAN WORKERS TO UDON THANI, THAILAND**

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## **Abstract**

*The tendency of migration of Lao workers to Thailand is likely to increase especially migration pattern is social network. The objective of this research was to study factors effecting the migration through social network of Lao workers in Udon Thani. Qualitative research method was applied in the study. Unit of analysis was group level. In-depth interview guideline was applied to collect data from 15 Laotian workers the research site was Udon Thani province, and together with participatory observation and non-participatory observation. The ATLAS.ti programme was applied to categorize data, and data analysis was based on the content analysis method. The research results showed that the crucial push factors which contributed migration among Laotian workers included Udon Thani Unemployment in residency, and low revenue in residency and important pull factors include higher compensation, worker demand of establishments in Udon Thani province, Laotian employers' values in Udon Thani, and social network of Laotian workers in destination.*

**Keywords:** Social Network, Migration, Push factors, Pull factors, Laotian workers

## **1. Introduction**

Labour migration is a global phenomenon which has been observed over the world. Tendency of labour migration has been increasing due to the development of socio-economics and advancement of technology (IMU, 2008). In Southeast Asia, labour migration occurs due to a different rate of economic development in ASEAN countries. Burma is the country where send the most workers to destination countries, followed by Indonesia, Laos, Malaysia, Thailand, the Philippines, and Vietnam respectively. While Brunei, Singapore, Malaysia, and Thailand are counted as the destination country. It is to say that labour migration in Southeast Asian Region is an output of economic development of ASEAN countries (Chamaratana, 2016)

Thailand has been considered as origin country and destination country (Chamaratana et al, 2554), since economic change of Thailand in past decades boosted economic growth in Thailand. A huge number of development project has been settled up

in Thailand especially development project on infrastructure facilities and industrial sector. Those conditions has caused the flow of labour migration in Thailand. In addition, Thailand currently is becoming the aging society, and it resulted in a decrease of working-aged people. In addition, the working-aged people seems not to work as workers due to higher education they received. This circumstance tends to be contrast with current country's economic which is growing and need more unskilled workers to serve industry (Kulkolkarn, 2010).

Udon Thani is a city located in northeastern region of Thailand. Udon Thani city nowadays is growing rapidly due to the growth of economics. According to statistics of Udon Thani Economics (2013), the provincial economic revenue of Udon Thani is 8.5 billion Baht (THB), GDP is 52,000 Baht/year, total loan is 6.3 billion, and total deposit of 4.9 billion. Economic growth rate is increasing 5 % comparing to year 2008, and 100% comparing to year 2003 (The Udon Thani Provincial Office of The Comptroller General, 2013). A massive economic growth rate offers a huge number of employment slot in Udon Thani However, it appears that number of unskilled workers in Udon Thani is insufficient due to the fact that many Thai workers have their own lands so that they prefer doing agriculture in their own lands to working in some unskilled jobs. These are reasons why Udon Thani needs migrant workers to serve economic sector. (Thongyou and Ayuwat, 2005)

Udon Thani located 70 Kilometers away from Vientiane capital of Lao PDR, and there are international bus that serve passengers travelling from Udon Thani city to Vientiane capital. Moreover, people from those two cities have shared same culture. They have similar language and traditions. These conditions encourage a number of Lao worker moving to work in Udon Thani city through their social networks, which are labour broker network and their relatives (Chamaratana, 2010). Migration through social network is necessary for Lao migrants in order to ensure security during they are working abroad such as jobs, housing, and etc. Moreover, social network reduces risk on migration, such as human trafficking, exploitation by employers, etc. (Chamaratana et al, 2011).

As mentioned earlier, research question has been set up to explore what are factors encouraging migration through social network of Lao migrant workers in Udon Thani city. Findings of the study are advantage to governmental organizations and private organizations that are working on migrant workers to cope with an increasing of migration circumstance practically.

## **2. Research objective**

To investigate factors encouraging migration through social network of Lao labour in Udon Thani city.

## **3. Literature review**

This paper investigated factors encouraging migration through social network of Lao migrant workers in Udon Thani city. The study applied academic concepts including 1) **migration**, which explores meaning of migration and factors influencing on migration, and 2) **social network**, which describes meaning of social network as following details.

**Migration;** a concept of migration refers to the movement from one place to another place. International migration means the movement of people across state or country's boundary. Purposes of the movement are to settle permanently at destination areas, or look for jobs. In addition, migration can be made legally and illegally (Applyard, 1992).

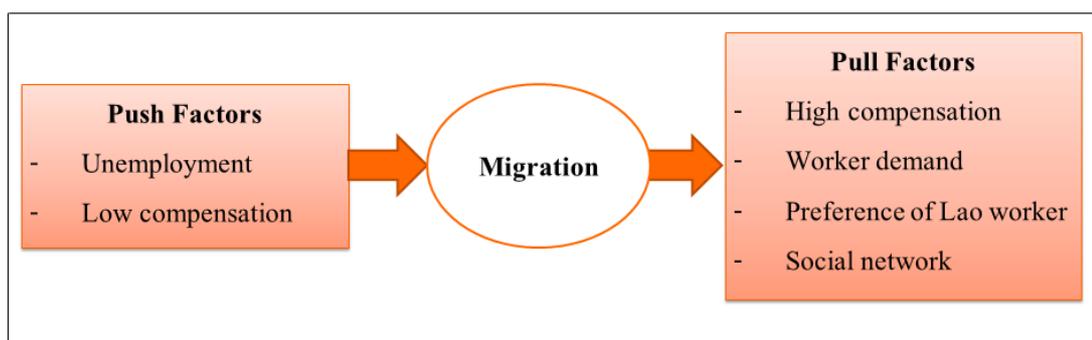
Everett S. Lee (1996) describes factors that influenced on migration. Migration consists of four elements including 1) push factor; which is factor that forces migrants to move out of origin area, 2) pull factor; is factor that encourages migrants moving to destination area. 3) Intervening of sets of obstacles, which is the condition, such as law, that obstructs migrants to move to another places, and 4) personal factor that causes decision of migration. Personal factors appears differently among migrants.

This paper aims to investigate push factors and pull factors, which are important factors of the migration, and it is essential to explain migration circumstance of Lao migrant workers in Thailand.

**Social Network;** is an interrelationship among individuals, groups, or organizations, who share same goals, rules, and resources together. Functions of social network also coordinate and create interrelationships to each other through mindset of individuals and activities that individuals do together. In addition, interaction of social networks relate to roles of individuals within the network (Niratrom, 2000; Niyomna et al, 2009; Chamaratana, 2554).

Moreover, social network can be considered as another type of collaboration among people within the network, and it is useful to analyze behavior of people. Social network is a social phenomenon that expresses social relations among individuals (Ponpanatham et al, 2010; Chamaratana, 2554).

Therefore, the definition of social network is applied to the study to explain factors encouraging migration through social network of Lao migrant workers in Udon Thani city as a figure below (see figure 1).



**Figure 1. Conceptual framework**

#### **4. Research methodology**

This paper applied qualitative methodological approach to the study, and unit of analysis was group level. Key informants consisted of fifteen Lao migrant workers who immigrated to Udon Thani city legally and illegally through their social networks. Criteria of key informants including 1) key informants must be Lao migrant workers, 2) they must

work in Udon Thani city. 3) They used social network as a mechanism to assist moving to Udon Thani city, 4) key informants were experienced in recruiting other Lao migrant workers to work in Udon Thani city, and 5) they all are in the same social network. In-depth interview, participatory observation, and non-participatory observation were used as research tool.

Data collection started with contacting employers in Udon Thani city. We introduced ourself to employers, and explained research objective to employers. Thus, researcher asked for permission to employers to collect research data from Lao migrant workers. Once researcher and Lao migrant workers met each other, researcher made appointment with Lao migrant workers to interview on later date.

Data analysis was made briefly during the interview, and it would be analyzed carefully based on conceptual framework of the study after the interview. Data, thus, was categorized and analyzed by the ATLAS.ti platform. In addition, analytical description was used to present research findings.

## **5. Findings**

This paper presented empirical findings in three topics including 1) characteristics of Lao migrant workers in Udon Thani city, 2) push factors of Lao migrant workers in Udon Thani city, and 3) pull factors of Lao migrant workers in Udon Thani city.

### ***5.1. Characteristics of Lao migrant workers in Udon Thani city***

Most Lao migrant workers who worked in Udon Thani is female worker. Interviewed Lao migrant workers consisted of nine female workers and six male workers, who aged between 18 to 30 years old. Most of them did not graduate junior high school because they were poor and their families could not support education expense for them. Lao migrant workers experienced in migration 2-5 times averagely. Agriculture, self-employed job, and industrial jobs were prior occupations before they moved to work in Udon Thani city. Since they were in Udon Thani city, five of them worked at noodle restaurant, five of them worked at livestock farms, and another five worked at Som Tam (Papaya Salad) restaurant. In addition, it was found that most of Lao migrant workers came from the same community.

### ***5.2. Push factors of Lao migrant workers in Udon Thani***

#### ***5.2.1. Unemployment in Lao PDR***

Lao migrant workers who migrated through social networks to work in Udon Thani city, most of them did not work on a regular basis. Their works mostly based on agricultural tasks, which operated on seasonal basis such as in wet season (eg. rice cultivation), or harvesting in winter season. However, in off-season, they were unemployed, so it resulted in financial insecurity of the families. They did not have sufficient income to support all family members, while the cost of living in Laos is high.

To solve this problem, Lao migrant workers tried to look for jobs near their own communities. Some of them got a short-contracted job, while some of them were getting a

job in factories, where located nearby Vientiane capital. Although they got higher income from those jobs, they had to pay other expenses such as travelling, meals, accommodation, etc. Therefore, they did not have much money for savings. They had only money to spend in each day.

When their social networks encouraged them to work in Udon Thani city, Thailand. Those who interested in would ask about job details, income, and lifestyle in Udon Thani city as Mr.Tong said.

“Once I finished rice cultivation, I stayed at home and had nothing to do. My friends who have worked at Udon Thani came to my house. He convinced me to work together at Udon Thani. I firstly consulted with my parents, and they were okay if I agreed to work. Therefore, I decided going with my friend because I trusted him. My friend and I knew each other very well for a long time. I then went to governmental bureau to get the passport” (interviewed on September 18, 2017)

Unemployment in Lao PDR is one of major factors contributing the migration, and the social network that they had at Udon Thani functioned the migration as a supporter in which encouraged Lao migrant workers to work at Udon Thani city easier. In this case, social network was presented as his friends who encouraged Lao worker with information about income they would get in Udon Thani city.

#### *5.2.2. Low income in Lao PDR*

Low income is a crucial issue that directly affected livelihoods of Lao families. Background of Lao families mostly based on agricultural activity. They were poor and lived in rural area. Financial issue was a primary issue that caused education problem of young family members. When families could not have sufficient income, their family members could not attend higher education. Many of Lao children have to leave school to work for families.

The study found that when migrant workers stayed at their homes, they did not have regular income. They did agricultural tasks which provided low income to families. Moreover, they also faced with a circumstance of low production price and natural disaster such as drought and flood. Some years they only had agriculture products to consume within the household as Ms.Dee mentioned.

“Once I stayed at home, I did rice farming. I had sufficient rice for livings. However, some years my rice field was flooded, and I did not have rice to eat. Sometime I had to ask my relative for rice. I also grew vegetables, but it provided small amount of income. I got few money in each month” (interviewed September 18, 2017)

Due to those reasons, families of Lao migrant worker were not able to generate sufficient incomes. This became a reason that pushed them to work outside community in order to support families. Some went to work in the factory, while some worked at restaurants in Vientiane capital.

In conclusion, low income and poverty among Lao families is a crucial factor that influenced on migration. Lao migrant workers had to work outside their hometown to support

their families. When they accumulated sufficient income, some of them would return their home. They would change occupation to improve the quality of life of the families.

### ***5.3. Pull factors of Lao migrant workers in Udon Thani city***

#### ***5.3.1. Higher income***

Income is the first factor that Lao migrant workers concern when they migrated to work in Udon Thani city, since they needed more incomes to support family expenses at origin area, for instance, living expenses, education expense, etc. as Mr.D mentioned.

“Firstly I heard that working in Udon Thani was a well-paid option. You easily got at least THB 9,000 each month, or you could get THB 300 daily. It is hard to find such a well-paid job in Laos. It is impossible for those who did not graduate school to get a good job” (interviewed September 18, 2017)

Lao migrant workers decided working in Thailand because of higher wage, and they did not pay too much for living expenses because they had relatives or colleagues, who previously worked in Thailand, took care of them during they are working in Thailand. It resulted in Lao migrant workers had much remittance to send to their households as MS. A mentioned.

“It is reasonable for migrants to get THB 9,000. Moreover, you can stay with employers. Employers normally provide accommodation to Lao migrant workers. You can save money as much as you could. If you work in Laos, you get THB 5,000, and you had to pay for accommodation. It is difficult to save money” (interviewed September 18, 2017)

According to statement above, Lao migrant workers compared wage between Laos and Thailand. They concluded that working in Thailand could be better than working in Laos. Many of them, thus, decided migrating to Thailand. Income they got in Udon Thani city was between THB 8,000-12,000. Most of Lao migrant workers worked at restaurants and livestock farms. Employers would offer free accommodation and meals. Lao migrant workers spent some money for personal expenses, and a large portion of the wage would be sent to their families in Laos. Comparing to the factory job in Laos, workers would get monthly THB 3,000-4,000. It was impossible to save money, since they had to pay for accommodation, meals, and travelling cost.

#### ***5.3.2. Worker demand in Udon Thani city***

Udon Thani city currently has been facing with labour shortage especially unskilled worker. Many unskilled workers were working in agricultural sector, but there were a huge number of job available in service sector. Therefore, it was an opportunity for Lao migrant workers to find job in Udon Thani city. Working in Udon Thani city was not difficult for Lao migrant workers, since people in those two countries shared similar culture such as language, tradition, etc. Moreover, Udon Thani city located not far from Thai-Lao border, and there were convenient transportation system to serve people from two countries, such as international bus or train.

Due to those reasons, it caused number of Lao migrant workers living in Udon Thani city was higher than migrant workers from other GMS countries. Moreover,

employment demand in agricultural sector, service sector, and industrial sector are still high, and it resulted in vary jobs available for Lao migrant workers, as Ms.Koy mentioned.

“Previously the shop I worked for was small. There were only two workers. Later, the business was growing. The owner decided expanding the shop, and he needed more workers. I then took my brother from Laos to work together” (interviewed November 29, 2017)

Economic growth in Udon Thani city caused more job positions, but domestic workers could not support employment demand. Therefore, Lao migrant workers were option for employers especially on the jobs that Thai workers considered as dirty job, hard job, and low-paid job.

### *5.3.3. Employment trends on Lao worker among employers in Udon Thani city*

Thai employers preferred Lao migrant workers to Thai workers because Lao migrant workers would be diligent, and the wage was lower than Thai worker’s wage. Almost Lao migrant workers had only one purpose in Thailand. They wanted to make money as much as they could. When they had enough money, they would back home and started small business. Therefore, Lao migrant workers would work very hard to make money. This was different from Thai workers. Thai workers had more chances to choose jobs. They might change jobs immediately once they found new opportunity. This was why labour shortage became a major issue in Udon Thani as Ms. C said.

“My boss said she don’t want to hire Thai workers because Thai workers always come to work late, and they have many requirement of working. They can’t work hard. It’s different from Lao migrant workers.” (interviewed September 18, 2017)

Moreover, some Thai employers preferred hiring Lao migrant workers due to low wage paid. Wage of Lao migrant workers was lower than Thai worker’s wage. Employers would like to recall Lao migrant workers, who were in their labour network, to work with them again once labour shortage arose as Ms. A said.

“At that time the shop needed more workers. My employer asked me to work at his shop again because I was ex-employee at his shop. We had a contact each other such as Facebook, or Line. I had nothing to do in Laos, so I said okay. Another reason is; my boss contact me directly. He said he really wanted me to work for him. I appreciated him” (interviewed September 18, 2017)

According to information above, it is concluded that Thai employers in Udon Thani city, who had ever hired Lao migrant workers, preferred Lao migrant workers to Thai workers. Moreover, there was an encouragement of migration among Lao migrant workers. Lao migrant workers would be rewarded by Thai employers once they recruited Lao migrant workers to work for Thai employers during labour shortage circumstance.

### *5.3.4. Social network of Lao migrant workers in Udon Thani city*

Social network is another factor that influenced on migration. Lao migrant workers used advantage from their own social network to help working in Udon Thani city. Social network performed through kin relationship. Lao migrant workers normally convinced

their relative to work in Udon Thani city, and they would prepare travelling details for the new comers as Ms. A mentioned.

“I allowed him to prepare my travelling. When he had completed everything, he and I made appointment to go to Udon Thani. I asked him to pick me up at my house because I never go to Udon Thani. He came to my house, and crossed the border. I worked immediately when I arrived Udon Thani. He would introduce me to others, and advise me to work” (interviewed September 18, 2017)

Social network is a mechanism to ensure that migration to work in Udon Thani city would be smoothly. Lao migrant workers decided moving to work because they trusted persons who were in social network, mostly were their relatives. Moreover, Lao migrant workers would be safe if they came to work with their relatives. They would be safe from human trafficking or exploitation.

Social network is another pull factor which influenced on migration. Social network would have major impact on migrant workers, since most of social networks of Lao migrant workers were relative each other, such as siblings, or close friends. This was a reason why Lao migrant workers had confidence in migration, and they made a decision to migrate easily.

In conclusion, both push factors and pull factors are influenced on migration of Lao migrant workers. Push factors consist of unemployment in Lao PDR, and low income in Lao PDR. While pull factors consist of higher income in Udon Thani city, worker demand in Udon Thani city, and employment trends among Thai employers. Thai employers prefer Lao migrant workers to Thai workers because Lao migrant workers are diligent, and they share similar culture such as language. In addition, the wage paid to Lao migrant workers is lower than Thai worker’s wage, and social network is a mechanism to ensure safety during they are working in Udon Thani city.

## **6. Conclusion and Recommendation**

Push factors that influenced on migration of Lao worker consist of two causes including 1) unemployment in Lao PDR, and 2) low income in Lao PDR. This result is supported by Suwicha (2008), Laosai (2012), and Wannahong (2016) who suggested that push factors of migration in Laos are poverty and high unemployment rate in Laos. Those migrants are considered as surplus labour who are not able to find jobs in Laos. While pull factors consist of conditions including 1) higher income in Udon Thani city, 2) worker demand in Udon Thani city, 3) employment trends among Thai employers, and 4) social network of Lao migrant workers in Udon Thani city. These conditions are supported by Suwicha (2008), and JungJing (2016) who suggested that high employment wage in Thailand is a priority that convinces Lao migrant workers come to work in Thailand, while employment availability and social network are important as well. Wannahong (2016) also suggested that decision of migrating to Thailand has been made easily when Lao migrant workers have their networks at destination country. Friend, neighbors, or relatives who have moved to Thailand earlier would facilitate the new comers, and encourage them to live in Thailand smoothly.

The research result show that effect from social network contribute to the decision to migrate more. So that, Department of employment ministry of labour, Thailand deserving has measures receive migration from social network. When it was discovered that Laotian migrant workers has migration with relatives who used tourist passports to doubt beforehand that is migrating to work. And signing a letter of intent to work and then came the registration of labor later.

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# IMPROVING THE PROFIT FOR BLACK TIGER SHRIMP (*PENAEUS MONODON*, FABRICIUS, 1798) RAISING HOUSEHOLDS IN VIETNAM: THE CASE OF SOC TRANG PROVINCE

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## Abstract

*This study was carried out with the aim at finding factors influencing the profit and suggesting solutions to improve the profit of households raising Black tiger shrimp (*Penaeus monodon*) (to be called as shrimp raising households in this paper). The Multiple Regression was employed to analyse the collected data from 252 households raising Black tiger shrimp in Soc Trang province. The results showed that there were six drivers that affect the profit of shrimp raising households: the costs for feed, labour, building ponds, fixed assets depreciation, reconstruction ponds and raising area. The research results were useful for local authorities and policy makers to work out solutions to support shrimp raising households to improve their profit and contribute to the existing literature by providing the econometric evidences of factors affecting the profit of shrimp raising households for other studies in broader range.*

**Keywords:** Black tiger shrimp (*Penaeus monodon*, Fabricius, 1798), factor, household, profit

## 1. Introduction

Aquaculture places an important proportion in the total export of Vietnam. The exported aqua-products value of the country in 2017 was approximately 8.3 billion US dollar, went up 29 percent compared to 2016. Of which, the value of exported shrimp was over 3.8 billion US dollar, increased 22 percent in a comparison to 2016 and Mekong Delta accounted for more than 80 percent (VASEP). The two most cultured shrimp are White leg shrimp (*Litopenaeus vannamei*) and Black tiger shrimp (*Penaeus monodon*). With the advantage of short time farming, high productivity in a comparison to Black tiger shrimp, White leg shrimp has been selected to replace for Black tiger shrimp in many areas of Mekong Delta. However, Black tiger shrimp is still chosen by many households accompany with White leg shrimp in some crops because White leg shrimp is easy infected by much disease.

Soc Trang is a province in the Mekong Delta with 146,970 hectares was rice land, about 54,000 hectares was aquacultural land, 43,000 hectares was perennial land, and 12,156 hectares was forest land. Aquaculture is the spearhead economy of the province that has contributed significantly to the livelihood of households in the area. The aquaculture of Soc Trang can be developed in all three marine, freshwater and coastal

areas. In 2017, Soc Trang province had 54,361 hectares of brackfish water shrimp of all kinds, went up 16.9% compared to 2016. In which, the area of Black tiger shrimp was 20,263 hectares (Soc Trang Department of Agriculture and Rural Development). This is an important foundation for Soc Trang aquaculture to be developed further in the future. However, in a comparison to Ca Mau and Bac Lieu, the average productivity and the average profit of shrimp raising households in Soc Trang is still low. Beside the effect of the price, environment and the weather, the characteristics and the cultivating techniques of shrimp raising farmers also play an important role in this result.

This paper presents: (1) the results of the study on factors affecting the profit of shrimp raising households in Soc Trang province. (2) Some implications for local authorities and policy makers to work out solutions to support shrimp raising households to improve their profit and improve their livelihood. (3) Research results also contribute to the existing literature by providing the econometric evidences for factors affecting the profit of shrimp raising households for other studies in broader ranges.

## **2. Literature Review**

The factors affecting the profitability of shrimp culture can be divided into two main groups: group of cost factors and group of factors to increase productivity and reduce costs.

In the study of Shailender *et al.* (2012) on sustainable culture method of black tiger shrimp in Andhra Pradesh, India, and the study of Pushparajan and Soundarapandian (2010) in south India, to get profit, shrimp farming households should manage water quality and feed. The research study of Le Thi Phuong Mai *et al.* (2014) on the technical and financial aspects of shrimp (*Penaeus monodon*) intensive model in Soc Trang, Bac Lieu and Ca Mau provinces, the determinants of the yield and profit were energy, interest cost, labour, depreciation per year, medical and chemical cost, feed, pond rehabilitation cost and cost of hatching. Nguyen Thanh Long (2016) with the analysis on the effectiveness of the intensive black tiger shrimp system in Ca Mau province added the depreciation costs of house and vehicles for production as two more fixed costs affecting the financial effectiveness of shrimp raising households. Some other studies on the technical efficiency of shrimp raising farmers also found the correlations between operating costs (energy, feed, medicine, etc.), fixed costs and this indicator (Rajeeb *et al.*, 2014; Pham Le Thong, 2015; Navghan *et al.*, 2015; Ghee-Thean *et al.*, 2016).

For factors that increase productivity and reduce costs, the result from the research of Glee-Thean *et al.* (2016) on technical efficiency and factor affecting technical inefficiency of Malaysian white shrimp aquaculture showed the significant impacts of seminar and shrimp seed size on the technical efficiency of white shrimp farmers. Navghan *et al.* (2015) also found the correlation between seed (breed), good education and shrimp aquaculture profit in Navsari district of Gujarat, India. According to Hasan *et al.* (2007), it should be recognized that the majority of the farmers operate at the household level and have relatively limited education, and thus the transfer of complex technical messages is problematic and requires continuous attention. Moreover, Pham Le Thong *et al.* (2015) showed that education level of households' head and joining in training programmes as the

factors that could influence the economic efficiency of shrimp production system in Mekong River Delta.

In this study, the main types of costs of production include: energy cost, feed cost, pond building cost, labour cost and other expenses (cost of building new ponds, interest expense, etc.). These are the basic costs to get commercial shrimp for sale.

Production supporting factors included in the study were the raising area, using quality breed, education of households' head, gender and ethnicity. With the larger raising area, farmers will benefit from economies of scale, increasing productivity. Higher quality breed will help households prevent diseases, reduce costs and increase productivity. Higher farmers' education level will help households take initiative in production, apply technical advances and actively prevent diseases, reduce costs and increase productivity. Ethnicity and gender were included to test the effectiveness of programmes supporting ethnic minorities and female households' head in shrimp farming.

### **3. Methodology**

#### **3.1. Research methodology**

The research used descriptive statistics with the following criteria: average value, maximum value, minimum value, standard deviation, frequency to generalize the status of shrimp farming, total revenue, costs and profit of the households.

In this study, the multiple linear regression model was applied to determine the impact of factors such as costs, farming area, breed, gender and educational level of households' head, ethnicity to the profit of the shrimp raising farmers.

The model is as follows:

$$Y = \alpha + \alpha_1energy + \alpha_2feed + \alpha_3pond + \alpha_4reconstructcost + \alpha_5labour + \alpha_6deprecitaion + \alpha_7others + \alpha_8Area + \alpha_9education + \alpha_{10}gender + \alpha_{11}breed + \alpha_{12}ethnicity + e_i$$

Where,

Y: the profit.

Energy: average cost for electricity, petrol to operate machines and lights.

Feed: feed cost.

Reconstructcost: cost for reconstructing ponds.

Pondcost: the cost to build ponds at the first time.

Deprecitaion: the average depreciation costs of fixed assets used for raising shrimp.

Labour: the cost to rend labour for production.

Others: other expenses such as phone cost, harvesting cost, tools, etc.

These factors were measured by VND per hectare.

Area: raising area was measured by hectare.

Education: the education level of household head.

Ethnicity: the ethnicity of household

Breed: using quality breed or not (reflected by buying breed from prestigious sellers and certificates).

Gender: Gender of household head.

$\beta_i$  : The coefficient for the dependent variable.

$\varepsilon$  : Error terms.

### **3.2. Data and analysis methods**

Data were collected through direct survey of 252 shrimp raising farmers in Soc Trang province by random method. Selected sites were Vinh Chau, My Xuyen and Tran De districts. The information collected includes: household demographic characteristics, average productivity, shrimp raising costs, etc.

Multiple Linear Regression model has been used as statistical tool for this study. The model was used to test the impacts of factors consisting of costs, farming area, breed, gender and educational level of households' head, ethnicity to the profit of the shrimp raising farmers towards the dependent variable is the profit.

## **4. Results and discussion**

### **4.1. The reality of shrimp farming in Soc Trang province**

According to table 1, among 252 interviewed households, 35 households head were female (13.89%), 48 households head were ethnic minority, accounting for 19.05% of the total number of households in the sample. Out of 252 interviewed households, 155 households used quality breed (61.51%). Many households know the fact that the survival rate and the growth of good breed is higher, as a result, they chose confirmed breed.

**Table 1. General information of shrimp raising households**

	<b>Amount</b>	<b>Percentage (%)</b>
Female	35	13.89
Ethnic minority	48	19.05
Confirmed breed	155	61.51

*(Source: Investigated by the authors in 2017)*

The table 2 illustrated the information about characteristics and raising area of shrimp raising households. The average level of education of households head was primary school (grades 1.89 or equal to grade 1 - 5). In terms of farming experience, the average experience of the households was around 11 years, the household had the lowest experience of 1 year and the most was 45 years. With such age structure and experience, the households head would have more advantage in managing and producing, etc. This was the appropriate age for the farmer in shrimp farming. In terms of labour in family, the households had at most 10 people and at least 1 person. The average number of labours per household was around 2 people. In general, the average family labour per household was basically meet the demand for shrimp farming. In term of water area, the household had the largest water area was up to 24 hectares while the household had the least water area was 0.11 hectares. On average, each farmer had water area of about 1.68 hectares.

However, many households did not use all their water area for shrimp farming. The average of real farming area was 1.53 hectares. The rest area was used for building sedimentation ponds. The average area of sedimentation pond was 0.17 hectare. Almost all households had these ponds to treat water for new crops and after harvesting. In general, the average of 1.53 hectares of farming area meets the requirement for shrimp raising.

**Table 2. Characteristics and raising area of shrimp raising households**

	Units	Mean	Max	Min	Stdev
Education	Dummy, 0 (illiteracy)-6 (higher education)	1.89	6	1	1.12
Experience	Year	11.11	45	1	7.63
Family labours	Number	2.10	10	1	1.08
Water area	Hectare	1.68	24	0.11	2.49
Real farming area	Hectare	1.53	23	0.1	2.21
Sedimentation pond	Hectare	0.17	2.15	0	0.22

*(Source: Calculated by the authors from collected data in 2017)*

The statistical result in the table 3 reflected the average productivity, return, total costs and profit per hectare of shrimp raising households. Base on the results, the average productivity per hectare was a little low when it reached 1.42 ton per hectare. The total return was around 220 million VND meanwhile the total cost was up to 167 million VND per hectare. As a result, the profit for each hectare stood at around 54 million VND.

**Table 3. Productivity, return, total cost and profit of shrimp raising households**

	Unit	Mean	Max	Min	Stdev
Productivity	Ton	1.42	5.33	0	1.20
Return	VND/ha	221,409,406	1,304,545,455	0	215,384,589
Costs	VND/ha	167,278,952	554,545,455	6,409,091	457,100,222
Profit	VND/ha	54,130,454	750,000,000	-484,250,000	469,413,660

*(Source: Calculated by the authors from collected data in 2017)*

The costs structure of shrimp raising households presented in table 4 showed that the cost for feed placed the highest proportion in the average total cost per hectare with 60.27 percent. The cost for building new ponds and reconstructing ponds after harvesting accounted for 18.59 percent in the average total cost per hectare. The energy expense was over 10 million VND (equal to 6.42 percent). The depreciation value per hectare was around 4 million VND or equivalent to 2.42 percent in the total cost and the least cost was expense for renting labour with the average value was just 0.13 million VND per hectare, accounting for only 0.08 percent of total cost. The rest part in the total cost was for disease treatment, harvesting, interest for loan, tools, etc. The value of these costs was about 20 million per hectare (corresponding 12.22 percent in total cost).

**Table 4. Costs structure of shrimp raising households***Unit: VND/ha*

	<b>Mean</b>	<b>Max</b>	<b>Stdev.</b>	<b>% in Total Cost</b>
Energy	10,731,444.46	30,000,000	14,193,171	6.42
Feed	100,822,898.60	340,000,000	74,280,913	60.27
Pond cost	20,228,311.56	51,666,667	5,065,127	12.09
Reconstructcost	10,869,790.36	45,000,000	7,573,301	6.50
Labour	130,291.53	10,000,000	759,368	0.08
Depreciation	4,048,281.16	25,555,556	4,358,945	2.42
Others	20,447,934.33	75,000,000	15,789,453	12.22

*(Source: Calculated by the authors from collected data in 2017)***4.2. Factor affecting the profit of shrimp raising households**

The F test was used to estimate the appropriation of Multiple Linear Regression. The significant value of F test was below 0.05 (table 5). Therefore, the coefficient of the independent variables is different from zero. In other words, the model based on thesis was suitable to practical situations.

**Table 5: ANOVA analysis**

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	6.931E18	12	5.776E17	15.390	.000
Residual	8.857E18	236	3.753E16		
Total	1.579E19	248			

*(Source: Results extracted from SPSS)*

The table 6 illustrated the result from the model identifying factors influencing the profit of shrimp raising households. Among twelve variables were added to the function, six drivers were statistically significant. They were: the costs for feed, labour, building ponds, fixed assets depreciation, reconstruction ponds and raising area. The R square was 0.439 indicates that 43.9 percent of the variance in profit was significantly explained by predictors. The remaining 56.1 percent was explained by other factors that not included in the model. Durbin-Watson value (DW) was 1.820 supporting that there was no autocorrelation between residuals. The VIF values were less than 2 meaning there was no collinearity between independent variables (table 6).

**Table 6. Factor affecting the profit of prawn raising households**

	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>	<b>VIF</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>			
(Constant)	3.839E7	4.927E7		.779	.437	
Ethnicity	3.241E6	3.211E7	.005	.101	.920	1.047

Gender	2.713E7	3.671E7	.037	.739	.461	1.054
Education	7.976E6	1.128E7	.035	.707	.480	1.052
Breed	1.089E7	2.673E7	.021	.407	.684	1.119
Energy	-.318	.612	-.034	-.519	.604	1.761
Feed	-.644	.112	-.336	-5.768	.000	1.427
Others	27.780	22.597	.063	1.229	.220	1.106
Labour	-18.371	6.832	-.144	-2.689	.008	1.201
Pondcost	-.650	.218	-.178	-2.985	.003	1.494
Depreciation	-.257	.143	-.112	-1.794	.074	1.655
Area	3.191E7	6.486E6	.281	4.920	.000	1.375
Reconstructcost	-1.938	.376	-.281	-5.157	.000	1.251
R <sup>2</sup>						.439
Durbin-Watson						1.820

*(Source: Results extracted from SPSS)*

There were five out of six factors having the negative correlation with the profit of shrimp raising households: feed, labour, pondcost, depreciation and reconstructcost. Particularly, the cost for feed and reconstruction had negative effect to the profit and the significance stood at 0.000 and the standardized coefficient beta were -0.336 and -0.281 implying that when the household use more 1 percent of cost for feed or reconstruction, the profit of shrimp raising farmers will decrease 0.336 percent or 0.281 percent respectively. In term of cost for building new ponds, the coefficient value was -0.178 and the significant value was 0.003. That means the if the household spends 1 percent more on buiding new ponds, the profit will go down 0.178 percent. The t-statistic value of labour and depreciation were 2.985 and 1.794 and the significant value stood at 0.008 and 0.074 respectively. The standardized coefficients beta of labour and depreciation were negative numbers that mean if the households increase the cost for fixed assets depreciation and rent labour instead of using their own workforce in raising shrimp, their profit will be lower than households who use these less. Particularly, one percent decrease in profit of households was explained by 0.0144 percent increase of labour cost or 0.112 percent increase of cost for fixed assets.

We can not ignore the important role of these factors in shrimp farming because it is the essentials to create the weight of shrimp for sale. Feed and pond are two most essential things in shrimp farming. However, farmers usually use feed wastely. Therefore, this doesn't increase productivity, but increase costs. For labour cost, almost all shrimp raising households do many things by themselves to save the costs. These work are invisible if the farmers use their own workforce. Thus, the growth in labour cost will harm the profit. Depreciation cost represents for machines used in farming. Using machines helps households increase productivity and save the cost for labour. Reconstructing ponds after harvesting is essential to reduce diseases, clean ponds. This will help to keep the following crops more efficient. The negative correlations of these two variables imply that

households have not used machines effectively. Moreover, households have not reconstructed their ponds in the right way so they could not clean the ponds. As a result, they just waste the money and reduce the profit.

Beside five factors having negative effects on the profit of shrimp farming households, there was one driver having the positive correlation with the profit was the raising area. The standardized coefficient of area was 0.281 and the significant value was 0.000. This result complies that if the households has larger raising area, their profit will increase. Raising area is one of the precious material resources that help people develop income. The larger area of farmland will help farmers to take advantage of economies of scale, save production costs, increase productivity and profit.

## **5. Conclusion and policy implications**

From the results of the multiple regression model, it is possible to draw conclusions that the determinants of the profit of shrimp raising households in Soc Trang province were mainly due to using inputs insufficiently and the limited raising area. They have not used feed, labour, money for building and reconstructing ponds and machines economically. In addition, the limited raising area per household has prevented households from the advantage of economies of scale.

Base on the research results, the author made some recommendations to improve the profit of shrimp raising households in Soc Trang province as follows:

The Government and local authorities should pay attention to the dissemination of production techniques (through vocational training activities) and the advanced production models in order to help households improve production efficiency, save costs and improve the profit.

Local authorities should develop forms of groups or associations in the community through local official associations such as Farmers 'Association, Veterans' Association... to support each other in terms of information, production techniques,... At the same time, participating in these associations, households will be easier to get information and farming techniques thanks to these associations.

Planning for shrimp farming areas, increasing the size of farming areas as large sample fields to take advantage of economies of scale, reduce costs and increase profit.

Shrimp raising households should focus on management how to use machines effectively so that they could save the depreciation cost and labour cost.

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# REMOTE SENSING AND GIS OF AGRICULTURAL DROUGHT MONITORING IN THE NORTH CENTRAL REGION, VIETNAM

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## Abstract

*Agricultural drought is a natural hazard that characterized by shortage of water supply. In recent decades, the scientists usually deal with phrases Agricultural drought monitoring as an essential component of drought risk management and using remote sensing (RS) and Geography Information System (GIS) based on drought indicators, proposed and widely used in the field of drought monitoring. This paper presents some agricultural drought indicators to generate a suite of drought levels at monthly, seasonal, and annual time scales for the North Central regions, Vietnam. MODIS satellite image data and threshold drought lever were classified according to the measurement data survey that regarding the law of drought in Vietnam. Based on calculating NDVI index, our research built maps of VCI, LSWI, VTCI indicators. All the data sets are being produced and updated in near-real time to provide information about the onset, progression, extent, and intensity of drought conditions at research region.*

**Keywords:** Agricultural drought, indicators, MODIS satellite image, North Central Region.

## 1. Introduction

Drought is not only one of common disasters in Vietnam, ranking third place in disasters, only after flood and storm, but also experienced the longest and strongest El Niño-induced drought and saline water intrusion. According to the collected statistics, during the past 50 years, droughts have taken place in 40 years in different extents and locations. Drought also affected more than 18 provinces in the three regions which produce key agricultural export and food security crops such as rice, coffee, pepper, fruits and aquaculture. Particular vulnerable groups such as the poor, women headed households, landless, people with disabilities, children and the elderly are more heavily impacted than others. [4]

According to the Vietnam national hydro-meteorological service, in the last 50 years, Vietnam has more than 38 years that appearing drought (make up 76%) with difference drought level and drought regions, affecting seriously the development of economic - society. Vietnam ranked 13/16 of top leading country suffered a strong impact

of the phenomenon of global climate change in the next 30 years (Verisk Maplecroft 10/2010) . In the context of current climate change, Vietnam will be forecasted to have a heavy impact of rising sea levels, increasing temperatures and changing seasonal climate regime increasingly deeper. This means that with the increase of drought (both in frequency and quantity) in the next decade.

As regard the drought in the North central region, it not only seemly occur on whole area, but also appears during both winter-spring and summer- autumn crop seasons.

Typically drought occurred on the large regions, if using the traditional methods to assess its serve weather condition, it will be very difficult. Therefore, database from Earth observation satellite (EOS) was very helpful and deserve attention in this condition. NOAA and MODIS data can suply lots of informations about The Earth surface through difference spectral bands as spectrum band, near infrared and thermal infrared. NDVI index combines informations in red spectral bands and near-infrared bands have been used effectively in health status monitoring vegetation cover. Along to the development and increasingly modern remote sensing technology whole the world has been the application of remote sensing to monitor and forecast drought and yielded practical results.

## **2. Methods**

Drought indices are quantitative measures that characterize drought levels by assimilating data from one or several variables indicators such as precipitation and evapotranspiration into a single numerical value. Such an index is more readily useable than raw indicator data. The nature of drought indices reflects different events and conditions; they can reflect the climate dryness anomalies (mainly based on precipitation) or correspond to delayed agricultural and hydrological impacts such as soil moisture loss or lowered reservoir levels.

In addition, this research focus on some of these models allow this below:

Method of the relationship between vegetation indices: this method almost use specific reflex of crops and land surface at wavelength near-infrared spectrum to determine the soil moisture

Method of infrared heat: This method uses thermal emission reflex of the surface on the basis of the thermal inertia and lack of land surface water index to assess drought of cover land.

The method of using high frequency communication and sensing

## **3. Results**

### ***3.1. Overview of Agricultural Drought in the North Central Region***

During the summer monsoon here have many hot dry west winds are harsh as Dong Ha, Tuong Duong. The strong development of hot weather would falsify evolution-humid rainy season in the North Central considering the general situation of the Northern climate area.

The degree of hot dry here tied to the mechanism of the southwest monsoon. Laos wind is very dry and hot. July is the most popular month of the southwest with the highest temperature may be over 42°C. In this area, the rainfall from the first season up to June and July not only did not increase as a general rule, but also it is reduced, creating a local phenomenon characteristic term. Rain season began to increase from August and reached its maximum in September or October with 3-4 times the rainfall in other months.

In crop seasons during of last years, drought event has affected from 12,000 to 50,000 hectares and totally lost from 1,000 to 13,000 hectares of agricultural land.

### **3.2. Evaluating the Relationship between Vegetation Indicators**

#### **3.2.1. Normalized Difference Vegetation Index (NDVI)**

The NDVI algorithm subtracts the red reflectance values from the near-infrared and divides it by the sum of near-infrared and red bands.

$$NDVI = \frac{NIR-RED}{NIR+RED} \quad (3.1)$$

This formula allows us to cope with the fact that two identical patches of vegetation could have different values if one were, for example in bright sunshine, and another under a cloudy sky. The bright pixels would all have larger values, therefore having a larger absolute difference between these bands. It is avoided by the sum of the reflectance.

Theoretically, NDVI values are represented as a ratio ranging in value from -1 to 1 but in practice extreme negative values represent water, values around zero represent bare soil and values over 6 represent dense green vegetation.

#### **3.2.2. Vegetation Condition Index (VCI)**

The Vegetation Condition Index (VCI) compares the current NDVI to the range of values observed in the same period in previous years. The VCI is expressed in % and gives an idea where the observed value is situated between the extreme values (minimum and maximum) in the previous years. Lower and higher values indicate bad and good vegetation state conditions, respectively.[3]

$$\left[ VCI = \frac{(NDVI_j - NDVI_{\min}) * 100}{(NDVI_{\max} - NDVI_{\min})} \right] \quad (3.2)$$

#### **3.2.3. Land Surface Water Index (LSWI)**

For more than 20 years the Normalized Difference Vegetation Index (NDVI) has been widely used to monitor vegetation stress. It takes advantage of the differential reflection of green vegetation in the visible and near-infrared (NIR) portions of the spectrum and provides information on the vegetation condition. The Land Surface Water Index (LSWI) uses the shortwave infrared (SWIR) and the NIR regions of the electromagnetic spectrum. There is strong light absorption by liquid water in the SWIR, and the LSWI is known to be sensitive to the total amount of liquid water in vegetation and

its soil background. In this study we investigated the LSWI characteristics relative to conventional NDVI-based drought assessment, particularly in the early crop season.

LSWI index was calculated by below formula (Hunt et al., 1987&1989)

$$LSWI = \frac{\rho_{NIR} - \rho_{SWIR(2130nm)}}{\rho_{NIR} + \rho_{SWIR(2130nm)}} \quad (3.3)$$

#### 3.2.4. Vegetation - Temperature Dryness Index VTCI

VTCI is lower for drought and higher for wet conditions. The value of VTCI ranges from 0 to 1; the lower the value of VTCI, the higher is the occurrence of drought. [5]

Mathematically it can be written as

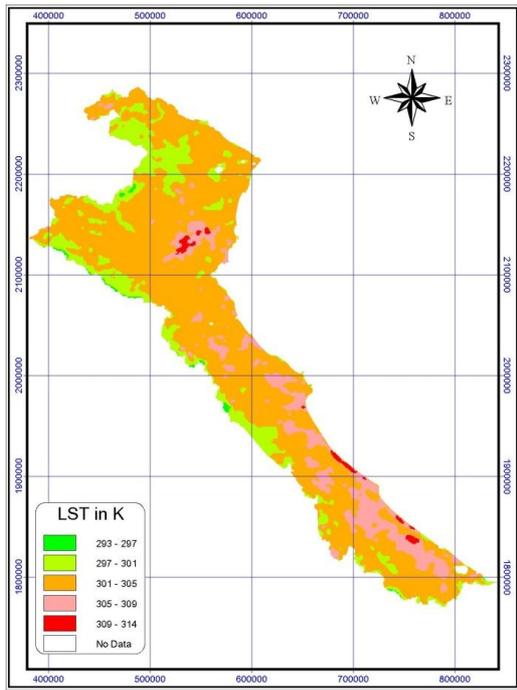
$$VTCI = \frac{LST_{NDVI_{imax}} - LST_{NDVI_i}}{LST_{NDVI_{imax}} - LST_{NDVI_{imin}}} \quad (3.4)$$

### 3.3. Satellite Data

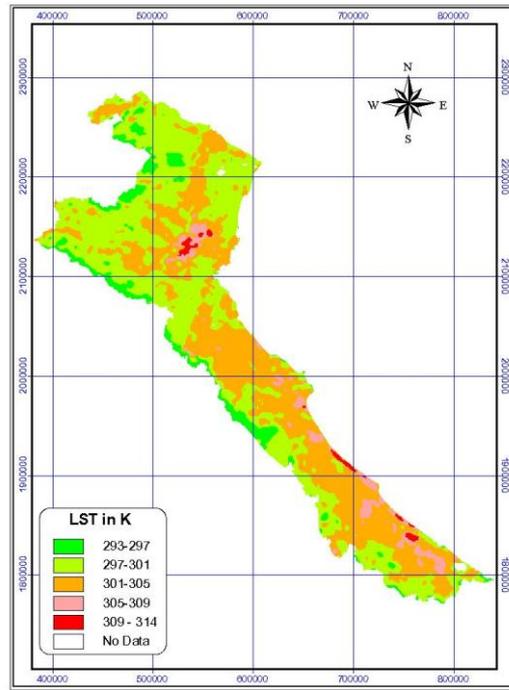
Satellite data includes MODIS image 8-days and 32-days from 2000 year to 2013. These data are at 1B type. Satellite data used for study are MODIS Land surface temperature and surface reflectance and the product name is MOD11A2 and MOD09A1 respectively. These two products have been downloaded from EOS data gate way for the period of November to May from 2000 to 2013.

The MOD11A2 data are provided every 8 days as a gridded level - 3 product in the Sinusoidal projection. It has twelve layers and out of these only layer 1 - MODIS\_LST\_Day\_1km and layer 02- MODIS\_QC\_Day has been used for analysis. Land surface temperature image was retrieved from MODIS data during 6th April 2012 and 6th April 2013 over the North Central region. It is an example of the MODIS level 3 LST 8 - Day product at 1 km resolution. MOD11A2 is a composited version of the Level 3 daily LST product.

MOD09A1 provides bands 1- 7 at 500 meter resolution in an 8- day gridded level - 3 product in the Sinusoidal projection. Each MOD09A1 pixel contains the best possible L2G observation during an 8 - day period as selected by high - observation coverage, low - view angle, the absence of clouds or cloud shadow, and aerosol loading. Science Data sets provided for this product include reflectance values for Bands 1 - 7, quality assessment, and the day of the year for the pixel along with solar, view, and zenith angles. The surface reflectance (MOD09A1) and NDVI derived from surface reflectance image shown in below figure was retrieved from MODIS data during 27th December 2012 and 27th December 2013. It is an example of the MODIS level 3 surface reflectance product at 500m resolution.

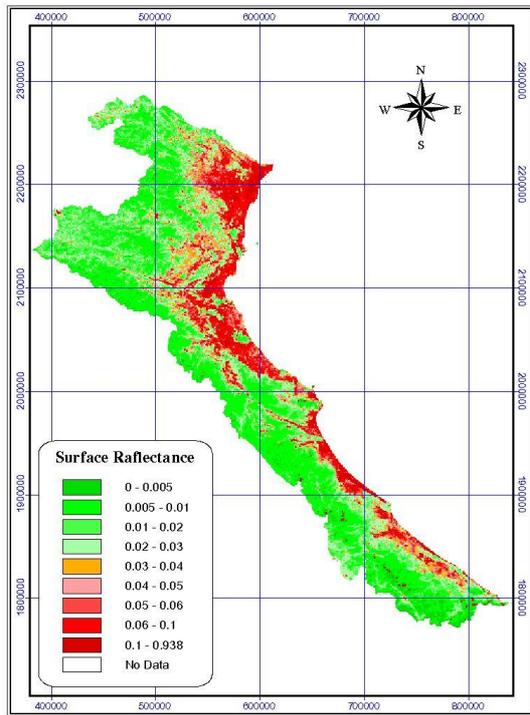


Land Surface Temperature during 6th April 2012

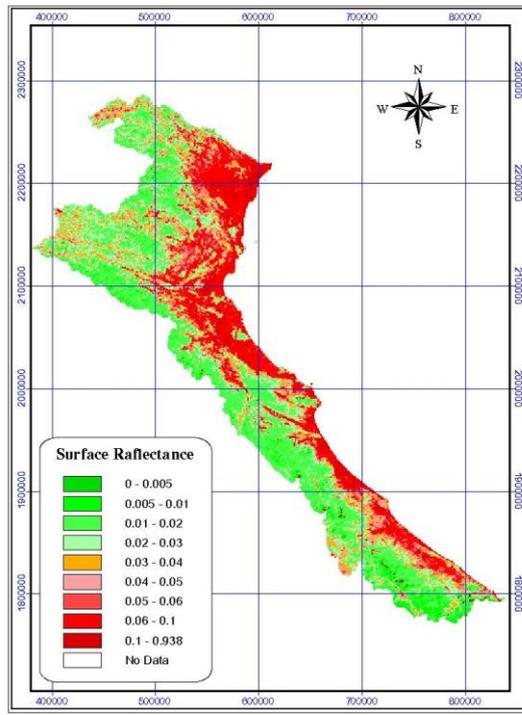


Land Surface Temperature during 6th April 2013

**Figure 1. The Land Surface Temperature in different years**



Surface reflectance during 27th December 2012

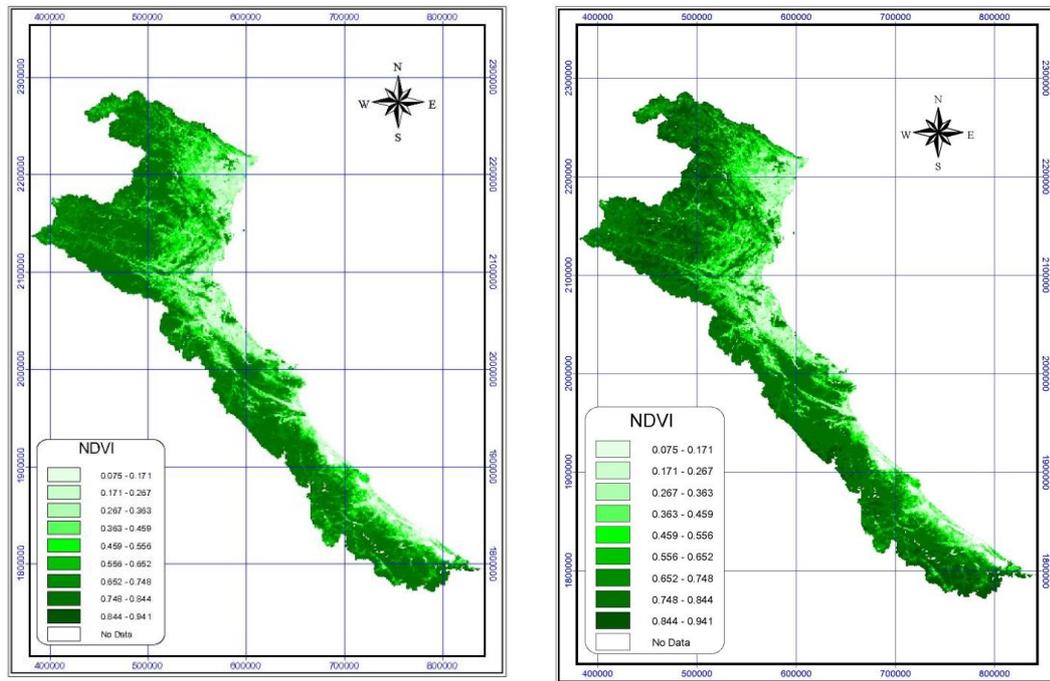


Surface reflectance during 27th December 2013

**Figure 2. Surface reflectance in North Central region**

It is a measure of the amount and vigour of vegetation at the surface. The magnitude of NDVI is related to the level of photosynthetic activity in the observed vegetation. In general, higher values of NDVI indicate greater vigour and amounts of

vegetation. The reason NDVI is related to vegetation is that healthy vegetation reflects very well in the near infrared part of the spectrum. Previous research suggests the estimation of air temperature extrapolating the best fit line through the NDVI of full vegetation canopy and LST correlation.



NDVI during 27th December 2012

NDVI during 27th December 2013

**Figure 3. Normalized difference vegetation index in North Central region**

### **3.4. Results of Drought Assessment by Satellite Images**

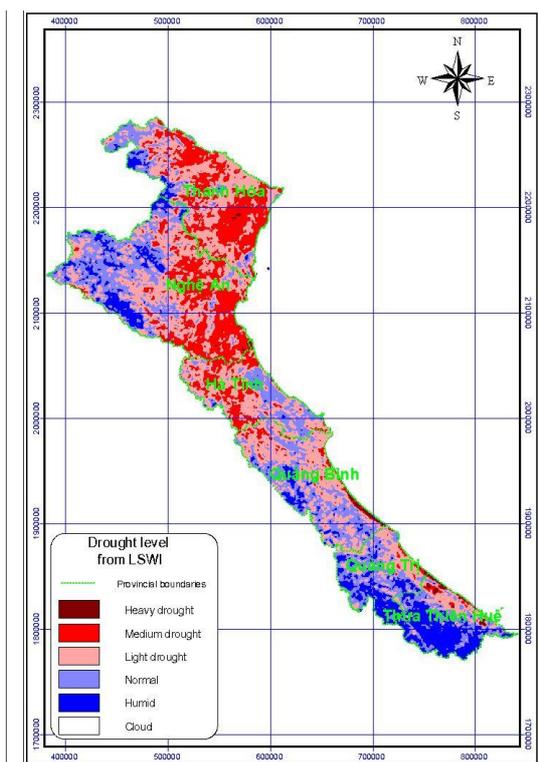
#### **3.4.1. Results by Calculating Land Surface Water Index**

Land surface water index was calculated from May, 2012 to May 2013 by ENVI software base on (3.3) equation. The index is calculated from LSWI remote sensing images and after that it will be compared with field measurements to determine drought risk following levels: heavy drought, moderately drought, light drought, normal, humid, cloud.

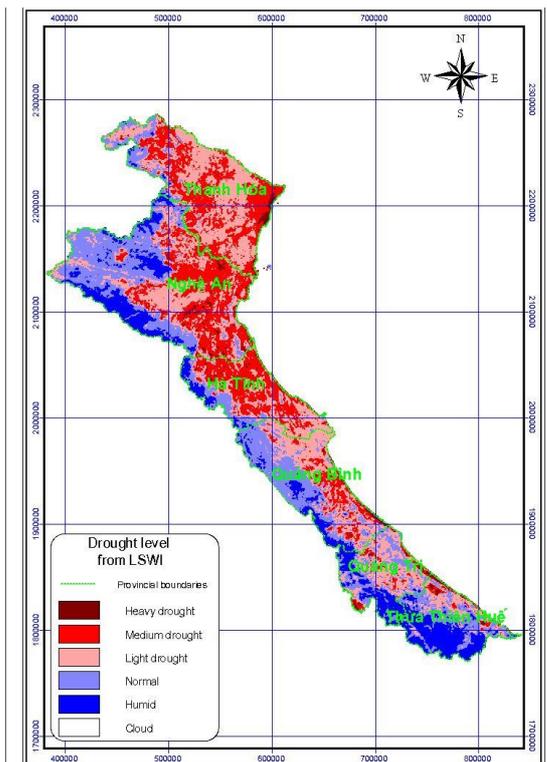
Figure 4a and 4b indicated that LSWI index results to representing two-week dry season of 2012 and 2013, results show that the distribution of LSWI relatively consistent with the distribution of arid regions. The North Central Region is always to be on a stress drought. In the last months of 2012 year and the first months of 2013 year, LSWI values is almost low, expressed drought appears over the wide area.

North Central region also has a large beaches with predominantly white sand, so not only in the winter but also in the summer LSWI values is very low.

From the above analysis it can be concluded that the distribution of LSWI values is consistent with the law of drought evolution in the region. So LSWI calculated by remote sensing can be used as an indicator in the assessment and monitoring drought in the North Central region.



**Figure 4a. LSWI index 4th week  
November 2012**



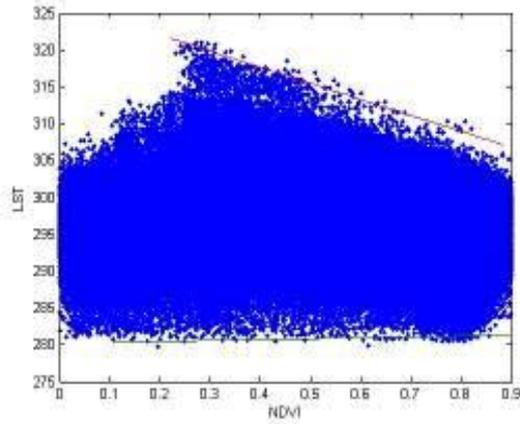
**Figure 4b. LSWI index 3th week  
February 2013**

### 3.4.2. Result of Drought Index from Calculation VTCI Value

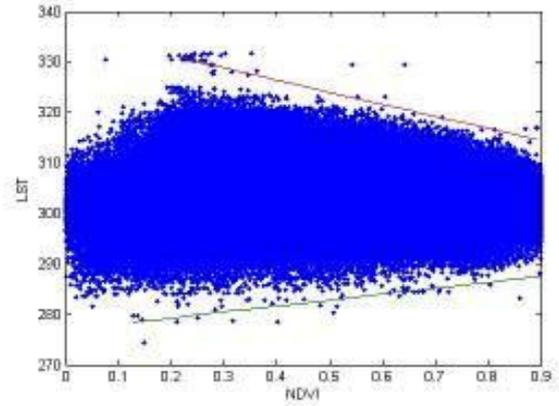
VTCI has been computed based on the NDVI-Ts space, 2D scatter plot relation for each pixel. The warm edge and cold edge pixels are subjected to linear regression equation and the derived equations are used for computation of VTCI using band math in ENVI, where land surface temperature (LST) and NDVI images are used as an input parameter for VTCI equations. VTCI has been computed for 13 years (2000 - 2013), which comprises Julian day of 241 to 297. This index was calculated for September and October month in each year for regional agricultural drought monitoring because these two months corresponds to reproductive period which is more sensitive to thermal stress. Hence this index could better represent the drought during reproductive phase. VTCI is more sensitive towards the reproductive stage of the crops in lieu of early stage of the crops, this is due to land surface is more sensitive towards the dryness rather than more moisture content in the soil as well as there is an inverse relationships existing between LST and NDVI.

Base on the indexes of LST, NDVI database and their relationship, my research caculated and gave results about the scatterplots of LST and NDVI for weeks in the North Central region.

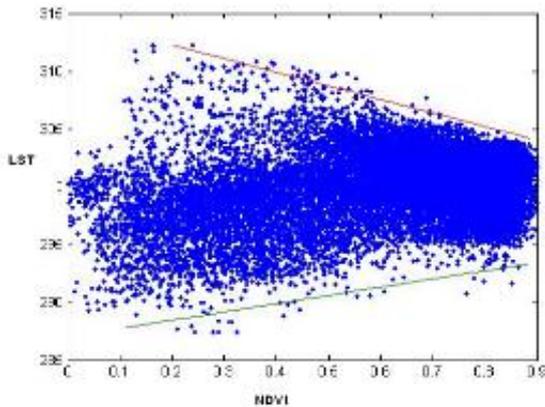
The scatterplots of LST as a function of NDVI index that was built for each of MODIS images combination in the dry season. Calculating results was expressed at the figure 5 below:



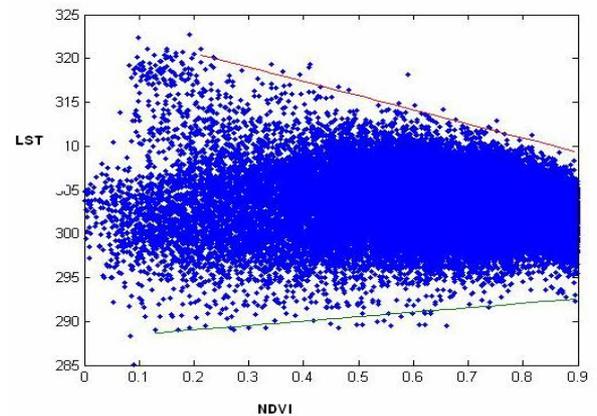
3th week of November 2012



the 2<sup>nd</sup> week of February 2013



3th week of December 2012

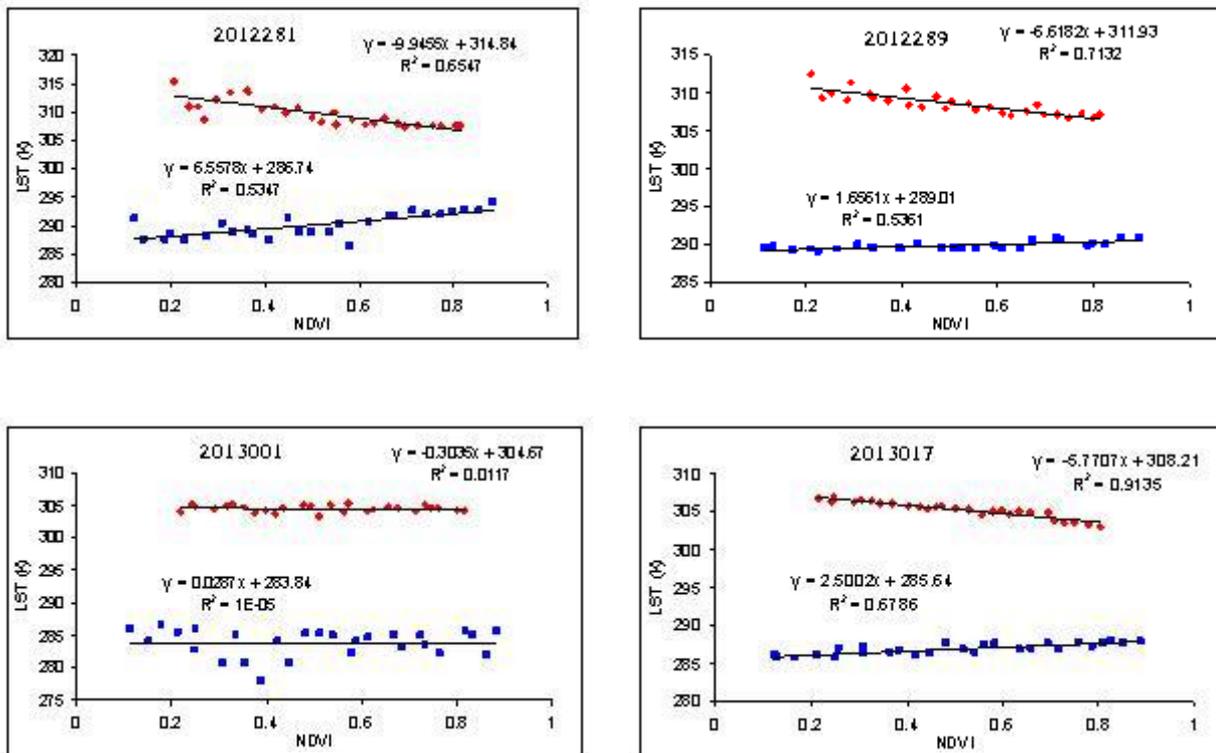


2<sup>nd</sup> week of March 2013

**Figure 5. Dispersion graph of LST and NDVI in the North Central region**

VTCI index is calculated by (3.4) formula, the value of  $LST_{NDVI_{max}}$  and  $LST_{NDVI_{min}}$  indexes are defined as the surface's average temperature on condition that water is supplied with limited or unlimited. Dry edges (red line) and wet edges (blue line) was determined by linear regression analysis.

From the linear regression model in the figure 5 show that: the correlation coefficient of the "dry edge"'s equations very high ( $R > 0.8$ ), the correlation coefficient of "wet edge" equations although not as high as dry edge, but the trend is also consistently with the evaporation process. In the other hand, the change of LST value in the wet edges is smaller than the major change of NDVI index, so that, using the equations of wet edges in caculate dry lever that impact to the results but not very strong. The slope of the dry edge is usually bigger than wet edge lines, its demonstrating that the influence of the LST-NDVI into drought process is bigger than into wet process, consistent with the reality of the drought process.



**Figure 6. Graph of wet edges and dry edges in the North Central region (2012 – 2013)**

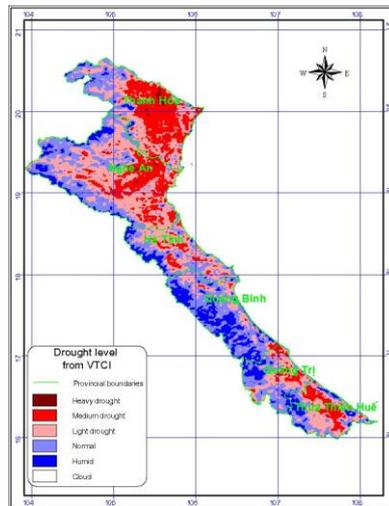
This paper used to MODIS data to calculate NDVI and LST indexes, and then calculate the VTCI index for each week for the phase appeared arid and hot from May, 2012 to May, 2013. Figure 6 shows that the spatial distribution of the VTCI index in the North Central region. Color palette represents the level of drought, VTCI value ranges from 0 to 1, the smaller the value VTCI (red gray area) represents arid areas and the greater VTCI (blue zone) shows adequate water supply area.

From figure 6 also shows that the low of VTCI index usually appear in the coastal the North Central region, the deeper going into the mainland, the higher of VTCI index.

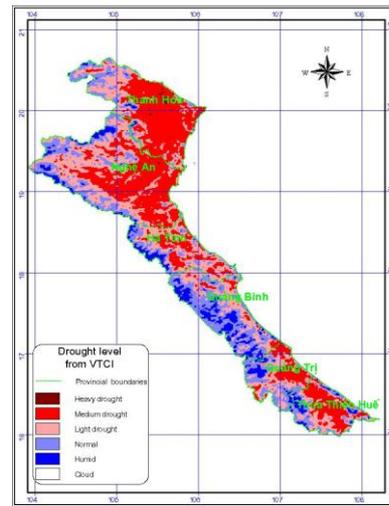
Temperature of February is higher than temperature in last December in the North Central region, mainly cause in these months it almost no rainfall, evaporation process was strong, the remaining water was reserved in soil fades lead to widespread drought in the summer.

To compare the value between LSWI and VTCI indices in the same week show that: the distribution of both indices is quite appropriate term, almost the entire province of Thanh Hoa, Nghe An are located in area have the range heavy drought and medium drought, provinces of Ha Tinh, Quang Tri, Hue have lighter limited extent, but the large of the area is also located in the medium drought and lightly drought.

The results of drought indices were calculated through VTCI and LWSI indicators (the same in the same week and the same area), but the result of calculating VTCI index usually right in the dry months within the area that has a fairly homogeneous of climate conditions.



**Hình 7.a. VTCI index of 4<sup>th</sup> week of November 2012**



**Hình 7.b. VTCI index of 3<sup>rd</sup> week of February 2013**

#### 4. Discussion and Conclusion

Drought has become a serious challenge in the world in general and Vietnam in particular. Tracking, monitoring and forecasting drought is an urgent problem.

Along with the surface observation data, the integration information of remote sensing with different spatial resolution and time, using drought indicators suitable for each region, each season is fully capable to serve the surveillance and monitoring of drought in our country.

LSWI index calculated on the MODIS satellite image data and threshold drought lever were classified according to the measurement data survey practice is consistent with the law of drought events in Vietnam in general and research area in particular. Therefore LSWI index base on remote sensing can be used as an indicator in the assessment and monitoring of drought in the North Central region.

The use of VTCI indicators based on the correlation term NDVI-LST, proven by the results of calculations drought value from meteorological stations as appropriate in dry season and in relatively homogeneous regions of climatic conditions. So this is also an indicator of drought assessment by remote sensing data in North Central region.

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# INDIGENOUS KNOWLEDGE OF TRADITIONAL MEDICINE AND LOCAL DEVELOPMENT IN MYANMAR: THE CASE OF CALOTROPIS GIGANTEA R. BR. IN AYEYARWADY REGION

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## **Abstract**

*Medicinal plants are abundant in Myanmar. Most of people use the traditional medicinal plants for the treatment of diseases. The study of Traditional Medicinal plants and their therapeutics play a very important role in health care system of Myanmar because 70 % of its population is in the rural area and they have been using traditional medicine for centuries. Myanmar traditional practitioners use a variety of medicine mostly containing potent medicinal plants available in Myanmar, to cure various diseases depending on their own nature and localities. Calotropis gigantea R. Br., a widely growing plant, possesses number of medicinal properties. This research focused on the use of Myanmar Indigenous Medicine of the leaves of Calotropis gigantea R.Br. in Ayeyarwady Region, socio economic and environmental impact, and the investigation of some phytoconstituents and bioactivities.*

**Key words:** *Calotropis gigantea R.Br., phytoconstituents, traditional medicinal plants*

## **1. Introduction**

*Calotropis gigantea R.Br. (Mayo), a member of the Apocynaceae family, is a well-known plant throughout the tropical world and they are native to the tropical and subtropical parts of Asia and Africa (Sharma, 1934). In Myanmar, the plant is distributed in various regions and used as remedy for various medicinal purposes. Myint Myint Khine reported for her PhD dissertation that leaves of Calotropis procera R.Br. (Ma-yo) possessed antimicrobial activity (Myint Myint Khine, 2007). The importance of medicinal plants to the economy of low-income countries remains critical and strategic because medicines are keys to a health population that drives and sustain the economy. In this research work, the leaves of Calotropis gigantea R.Br. (Mayo) was chosen for investigation of some phytochemical constituents, and their bioactivities, its uses, and analyzing the socio-economic aspects of sample in Ayeyarwady Region.*



**Figure 1 Image of *Calotropis gigantea* R.Br.**

**Botanical Aspect of *Calotropis gigantea* R.Br.**

Family	: Apocynaceae
Sub-family	: Asclepiadaceae
Botanical name	: <i>Calotropis gigantea</i> R.Br.
Myanmar name	: Mayo
English name	: Swallow-Wort, Milk weed
Synonyms	: <i>Asclepias gigantea</i> L.
Part used	: Leaves

**Some Bioactive Chemical Constituents of *C. gigantea* R.Br.**

Latex: cardiacglycosides, calotropin, uscharin, calotoxin, calactin and uscharidin; gigantini

Leaves: amyirin, amyirin acetate,  $\beta$ -sitosterol, ursolic acid, cardenolides, calotropin, calotropagenin

Flowers: flavonoids, quercetin-3-ratioside, sterol, calactin, calotoxin, calotropagenin, calotropin, polysaccharides with D-arabinose, glucose, glucosamine and L-rhamnose.

Root bark: triterpenes, new norditerpenyl ester, calotropterpenyl ester

**Medicinal uses of various parts of *Calotropis gigantea* R.Br. (Mayo)**

The *C. gigantea* R.Br. (Mayo) plant is used for skin diseases, boils and sores and as a tonic and purgative in small doses, and as an emetic in larger doses. The powdered root bark is used to cure dysentery, elephantiasis, and leprosy. The stem bark is diaphoretic and expectorant, and is used for dysentery, spleen complaints, convulsions, lumbago, scabies, ringworm, and tumors and also as an antiseptic, vermifuge, emetic and purgative, as well as for poisoning arrows. The powdered flowers are given for coughs, colds and asthma. The crushed and warmed leaves are applied on burns, headaches and rheumatic pains, and as a tincture for intermittent fever (Gaur *et al.*, 2013).

## 2. AIM

The chemical properties and value of plants and their extracts, the development of commercial that may arise from the chemical analysis; indigenous knowledge systems linked to plants and their uses and ecological considerations. This paper is focus on local application of medicinal plants and to improve healthcare system in Ayeyarwady Region.

## 3. Objectives

- To study the uses of various parts of *Calotropis gigantea* R.Br. (Mayo) in Myanmar
- To give some information that the leaves extracts of *C.gigantea* have antitumor, antioxidant and larvicidal activities and no acute toxic effect

## 4. Genral information

### General Uses of *Calotropis gigantea* R.Br. (Mayo)

There are two types of *Calotropis gigantea* ( white and red). Both are used to cure vomiting, purgation, vata roga, leprosy, itching, snake bites, wounds, splenomegaly, abdominal tumors, pileees, cough, ascites and intestinal worm infestation.

White type is aphrodisiac, light in nature and stimulates digestive system. It is used to cure anorexia, excessive salvation, piles, cough and asthma. On the other hand, red type is little bit bitter in taste. It is useful in diarrhea, abdominal tumors and inflammation. Is also useful in skin disorders, worm infestation, cough, hemorrhoids, and bleeding disorders. The astringent action of the herb makes it beneficial for the treatment of many skin diseases.

### Leaves

Composing of *Calotropis gigantea* leaves using mix dung of buffalo, cow, goat and sheep (Shah M. C, 2015)

Calotropis leaves are immersed in water for two days, diluted, filtered and is then applied at the place of termite attack.

### Flowers

*Calotropis gigantea* flower is efficacious as well as safe in patients with painful heel syndrome (Peavin Dhone, TJ Hemanani, 2012)

### Latex

Milky white latex is sticky and the plant is popular amongst the common population because of this peculiarity. This is mildly poisonous and is considered as one of the plant toxins in Ayurveda. Though toxic, this latex can be purified and put to use as a very effective antidote as well as herbal medicine.

Latex is salted and bitter taste, having hot potency, light and oily in nature. It is best used to cure skin disorders, abdominal tumors.

Latex of this plant is capable of vomiting and purgation. It is used in purgation and vomiting therapy.

### **Root bark**

The powdered root bark is used to cure dysentery, elephantiasis, and leprosy.

### **Stem bark**

The stem bark is diaphoretic and expectorant, and is used for dysentery, spleen complaints, convulsions, lumbago, scabies, ringworm, pneumatism and tumours and also as an antiseptic, vermifuge, emetic and purgative, as well as for poisoning arrows.

### **Local Uses of *Calotropis gigantea* R.Br. (Mayo)**

In traditional practice, especially in Ayeyarwady Region, Myanmar, *C.gigantea* (Mayo) is being used mainly

- By swallowing the mixture of leaf with latex for the controlling of snake poison. (Dosage -after grinding with leaves and latex, 0.5-1 g one pill per hour during snake bite)

- After boiling the whole parts of the plant sample, the obtained watery extract was used to relieve arthritic.

- By binding the heated leaves with clothes, that cures the furuncle, tumor, back pain and knee pain.

- By mixing a piece of salt, 5 mL of honey, and powdered of Mayo leaf (1 g), it was eaten by twice a day, that relieves asthma.

- By sticking with latex to the painful heel is efficacious in patients with painful heel.

- By mixing with latex to the milk, that solidifies the milk.

- By coating the mixture of turmeric powder with latex to the abdomen gradually diminish the abdominal tumors.

### **Other Uses of *Calotropis gigantea* R.Br. (Mayo)**

*Calotropis gigantean* plant yields a durable fiber that is used in rural households to make bowstring, ropes, carpets, and sewing threads. Doing these activities can give some incomes in the local region. Technical supporting is required to get high quality products.

Health care costs are a big issue in Myanmar, largely determining when and where people seek treatment. Using the *Calotropis gigantea* plant systematically may improve not only the prevention of healthcare system, on the other hand but also save money for expense of medical cover. This may conserve local people to get happy and healthy their working environment. Today, traditional medical practice has been recognized by the world health organization (WHO) as a building block of primary healthcare. But, safety should be the overriding criterion in the selection of herbal remedies for use in healthcare (Patli *et. al.*, 2012).

Myanmar traditional practitioners use a variety of medicine mostly containing potent medicinal plants available in Myanmar, to cure various diseases depending on their own nature and localities. These medicines may consist of a single potent plant as well as in combination with other potent plants in different ratios by weight or by volume. From

studying the scientific point of view, results of preliminary photochemical analysis of the leaves extract of *C. gigantea* showed that the leaves contain alkaloids, steroids, saponins, glycosides, tannins and  $\alpha$ -amino acids.

For safety, acute toxicity screening of *C.gigantea* leaves, ethanol extract was done with the dosage of 2000 mg/kg and 5000 mg/kg body weight in each group of albino mice (WHO, 1963, 1966). The condition of mice groups were recorded after fourteen days administration. The results show no lethality of the mice was observed up to fourteen days administration. Each group of animals were also observed still alive and did not show any visible symptoms of toxicity like restlessness, respiratory disorders, convulsion, aggressive activities, coma and death.

**Table 1. Acute Toxicity Effect of Ethanol Extract of *C. gigantea* (Mayo) Leaves on Albino Mice Model after Two Weeks Administration**

No	Groups	Extract Administration	Dosage (mg/kg)	No. of death	% of death after 14 days
1	Group A	Ethanol Extract	2000	Nil	0
2	Group B	Ethanol Extract	5000	Nil	0
3	Group C	No administration	Nil	Nil	0

In the leaves of Mayo, the antioxidant activity were found to be pet-ether extract ( $IC_{50} = 6.11 \mu\text{g/mL}$ ) > ethylacetate extract ( $IC_{50} = 6.89 \mu\text{g/mL}$ ) >  $H_2O$  extract ( $IC_{50} = 9.54 \mu\text{g/mL}$ ) > 95% ethanol extract ( $IC_{50} = 9.78 \mu\text{g/mL}$ ). From the results, due to the presence of the antioxidant activity, the leaves of Mayo may be used in prevention of diseases related to oxidative stress such as coronary heart disease, neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease and even in various types of cancer.

The antitumor activity screening of different crude extracts such as pet-ether, ethylacetate, 95% ethanol and watery extracts of the leaves of Mayo were carried out against *Agrobacterium tumefaciens* by Potato Crown Gall test or Potato Disc Assay method (Moh Moh Aye, 2009). Among the tested crude extracts of the leaves of Mayo, all crude extracts exhibited antitumor activity against *Agrobacterium tumefaciens*. Larvicidal and antimicrobial activities of the leaves of *C. gigantea* (Mayo) were also studied. This study examines social and economic factors to improve healthcare system and living quality. For low-income countries to attain any appreciable level of self-reliance regarding availability of safe and effective pharmaceuticals use for the management of endemic disease conditions, it was considered a priority because of the importance of self-reliance in the current and perhaps future economic.

## 5. Discussion

- *C. gigantea* (Mayo) should be applied economic scale in Myanmar.
- *C. gigantea* (Mayo) need to be grown for propagation and commercial use due to pharmaceutical research and traditional medicine industry (FAME) is located in Yangon.

- The people should know widely *C. gigantea* (Mayo) because many illnesses are cured and quite effective.
- Training, workshop and seminar need to be carried out to know scientific and commercial attention of the people.
- *C. gigantea* (Mayo) need to be preserved widely in Myanmar.

## 6. Conclusion

Nowadays, alternative medicine plays an important role internationally. In place of chemicals, natural raw materials are increasingly being used in medical treatment and pharmaceutical industries. The preliminary phytochemical investigation revealed the presence of alkaloids, steroids, saponins, glycosides, tannins and  $\alpha$ -amino acids in the leaves of *C. gigantea*. The constituents such as alkaloids and steroids present in the sample may contribute to possess bioactivities such as antimicrobial, antioxidant, anticancer, antitumor, antipyretic, and antiulcer properties in Mayo. And then, leaves extract of *C. gigantea* may have moderate antioxidant activity and good larvicidal activity. Moreover, due to its antitumor activity, leaves of *C. gigantea* may be used to prevent the diseases related to tumor and cancer. No side effect has been noticed, the leaves should be washed before consumption. This study provides the health at affordable cost and *C. gigantea* leaves have valuable medicinal properties and may be used safely. Systematically studying on *C. gigena* provides that local people can get knowledge and how to protect their health with Myanmar Traditional Medicine because prevention is better than cure. To bring about the development of indigenous medicine is one of the tasks of the health plan laid down by Ministry of Health and to relate scientific evidence on the application of these medicinal plant is the tasks of researchers in Myanmar. Now concerning with antibacterial, anti malarial, anti hypertensive, hypoglycemic, anti inflammatory, trachea chain relaxation, antitumor and antioxidant activities on Myanmar medicinal plants have been investigated both *in vitro* and *in vivo* methods. Concurrently, it is necessary to continually develop research work on Myanmar Traditional Medicine.

## 7. Acknowledgements

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# DEVELOPING HANOI TRADE TOWARD SUSTAINABILITY

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## **Abstract:**

*With the sustainable development objective of Hanoi as Vietnamese political, cultural, trade and economic center with potential population of 8 million in 2020 and 9 million in 2030, potential rate of urbanization of 65-68% in 2030, developing trade toward modern, advance and sustainability is necessary in order to coordinate the linkage between production and consumption, which helps to create balanced development of urban and rural areas, traditional and modern trade. As a result, Hanoi will become the trade center in the region and the world. This study focuses on analyzing the practices of sustainable development of trade in Hanoi from 2011 to 2017, indicating the weaknesses and suggesting solutions for future sustainable trade development of Hanoi such as interventions for enterprises, implications for industrial associations, and measures for the local government.*

**Key words:** Hanoi trade, sustainable development.

## **1. Introduction**

Hanoi Municipal Party Committee (2012), in the Decision No. 2757/ QD-UBND dated 20 June 2012 of the Committee, has approved the Hanoi Trade Development Plan until 2020, toward 2030, with the determination “*To build Hanoi as a major trading center, a center of trade and economy of the country and the Southeast Asia. To establish, enhance and develop goods distribution channels in the direction of civilization, modernity, elegance and sustainable development*”. Thus, the city has organized many promotion programs and activities to support and promote trade. However, researches show that the level of trade development in Hanoi has been so far lower than its potentiality.

Globalization trend is reflected through regional trade integrations, which is created all over the world. This trend will eliminate restrictions on the movement of goods, services, knowledge, and technology to each region and spread across the globe. Hanoi’s development orientation toward trade and services of Hanoi in the coming years poses new development requirements on the quantity and quality of services as well as on the structure, scale, mode of business and level to lead the city to the center of trade, the market space and the commercial infrastructure, from which Hanoi truly becomes the trade center of the country. The paper focuses on analyzing the sustainable trade practices of Hanoi from 2011 to 2017, identifying weak constraints and suggesting solutions for sustainable trade in Hanoi in the future.

## **2. Theories of sustainable trade development**

### **2.1. About sustainable development**

Development is a process of growth both in terms of quantity and quality. The development objective of nations is to improve the conditions and quality of living standards such as income raising, poverty reduction, better demand satisfaction of goods for production and consumption, less relying on natural resources, fair and equal life among members. Economic development must, however, take social and environmental considerations into account because of the need for society development and future generations. All of these requirements lead to a new concept "*Sustainable development*".

The new concept of sustainable development is discussed in the book "*Not just economic growth. Introduction to Sustainable Development*" by Soubbotina (2005), that sustainable development can also be understandable as to develop "equality and balance, that is, to sustain the development forever, it is necessary to balance the interests of groups in the same generation, and to do so simultaneously on all three important inter-related areas: economic, social and environmental development. This concept also emphasizes the comprehensiveness of the three main goals that sustainable development must achieve, they are economic, social and environmental goal.

In 2012, the United Nations Conference on Sustainable Development (Rio+20) took place in Rio de Janeiro, Brazil. The objective of the Conference is to ensure that political commitments on sustainable development are made, assessing the progress and limitations in implementing the contents of the previous summits, particularly in Rio 1992; also identifying and solving emerging challenges in the recent time. The two main contents of the conference are: Green Economy in the context of sustainable development and poverty reduction, and the institutional framework for sustainable development.

The Asian Development Bank (ADB) has introduced a more specific definition: "*Sustainable development is a new form of development that integrates a production process with resource conservation and environmental enhancement. Sustainable development must satisfy the needs of the present generation without compromising our ability to satisfy the needs of future generations*" [2, p12]. This definition addresses more specifically about the binding relationship between the current demand response and the future generation capacity, through the integration of production processes with conservation measures in order to maintain natural resources and improve the quality of the environment.

In Vietnam, Dr. Ngo Doan Vinh has taken the concept of development: "*Development must not destroy the environment, at the same time bring economic prosperity for the majority of people, solve social issues rationally*. Although there has been no exact concept, these scholars have warned of the unforeseen shortcomings of sustainable development and need to be aware of the reality. Therefore, the clarification of theoretical and practical issues on sustainable development based on specific conditions of Vietnam to bring our economy to prosperity is extremely important.

Thus, sustainable development is a way of social-economic development in order to better solve the relationship between stable, rational and sustainable development in terms of scale, quality, structure and level of environmental friendliness, which aims to better meet the needs of the present generation without obstructing the needs of future generations.

## ***2.2. About sustainable trade development***

Sustainable trade development must be ensured not only about commercial scale, but also quality in the development process. However, the environment is increasingly polluted, resources are gradually exhausted, trade fraud increases... Therefore, the new approach of sustainable trade development should pay attention to both quantity and quality aspects in the development process. People are starting to focus more on how to exploit and use resources in a higher economical way with lower negative effects and higher effectiveness. Commodity production focused only on product and profitability now considers more on waste and environmental pollution issues. Commodity trading focused on sales and profits now concerns more about quality of goods and food safety, environment-friendly products, the labor right protection, improved income and working environment. Trade development plans must be considered more comprehensively. From the new perspectives, in the process of development, harmonized combination of economic, social and environmental factors may ensure greater growth, less polluting emissions, and contribute more to solve social issues. Thus, trade development needs to follow the new sustainable ways.

According to Nick Robins and Sarah Roberts (2000) in "The Reality of Sustainable Trade", sustainable trade is the close linkage between environment, trade and development. The research highlights practical issues, challenges for the sustainable trade development, creating great economic value, reducing poverty and inequality.

Bill Vorley, Dilys Roe and Stevebass (2000) refer to the standards of sustainable trade in the report "Standards and Sustainable Trade." This report identifies opportunities for trade development linked to poverty reduction for sustainable development and addresses the issues surrounding sustainable trade standards. Sustainable trade occurs when exchanges of goods and services create positive social, economic and environmental benefits, reflecting the four core indicators of the sustainable trade development:

- (1) Create economic value
- (2) Reduce Poverty and inequality
- (3) Restore environmental resources
- (4) To be implemented in an open governance system and be responsible for state management.

To measure these four criteria requires specific standards such as the technical specifications, terms, definitions and principles that the authors have provided, including:

- (1) Quality: taste, clean...

- (2) Safety: healthy, safety of employees
- (3) Practical: reliability of goods
- (4) Friendly-environment: waste, environmental affects

Therefore, *“sustainable trade development is a stable, rational, long-term development of the scale, quality, structure and level of environmental friendliness of trade”*

In order to find solutions for sustainable trade development not only for Hanoi, many organizations and trade management agencies have researched and outlined policies such as: a study on natural resources and environment at the University of Hanoi (1995). This study shows that the concept of sustainable trade development has been adopted in the Brundtland Report as a process that simultaneously requires sustainable development in four areas: economics, humanities, environment and technology. The study of the Ministry of Industry and Trade of Vietnam (2012) has clarified the scientific basis to develop and improve the policy of export and import development to meet the requirements of rapid and sustainable economic development in our country in 2011-2020 period and many works of Nguyen Duc Thanh (2010), Le Danh Vinh (2013), Dang Dinh Dao and their partners. (2015).

In addition, there are many related articles published in journals such as articles by Chu Van Thuan and Nguyen Duc Ha (2013), Hoang Tho Xuan (2016). These studies mainly analyzed the strategy, providing the scientific foundation, policies to create sustainable export conditions, promoting the trade sector to develop sustainably in the context of integration. To be more specific, Hanoi government has developed the commercial development plan for the city such as Decision No. 5058/QD-UBND dated 5/11/2012 of the Hanoi Municipal Party Committee for approval of the wholesale and retail network planning in Hanoi up to 2020, with the orientation toward 2030.

However, these documents are only in the planning and defining the legal framework for sustainable development for Hanoi's socio-economic development policies but have not focused on studying contents and essential solutions for sustainable trade development in the city. Therefore, the article will analyze and evaluate the current status of Hanoi's trade according to the criteria of sustainable development, point out the causes and propose measures to develop Hanoi's trade towards sustainable development in the coming years.

### ***2.3 Research methodology and data sources***

To analyze Hanoi's trade in a sustainable development aspect in the period 2011-2017, the method use disdescriptive statistics to compare the dynamics and changes of Hanoi trade over the years in terms of commercial scale, the number of Hanoi commercial enterprises, the total retail sales of goods and services, the turnover of import and export, the structure of high quality products friendly environment...

The source of data is from the General Statistics Office, Hanoi Statistical Office, General Department of Customs, Ministry of Planning and Investment, Vietnam Socio-

### 3. The practice of sustainable trade development in Hanoi in the period 2011-2017

#### 3.1. Contribution of trade and services to GDP growth and economic restructuring in Hanoi

In 2017, the total output in Hanoi reached 519,568 trillion dong, equaling 0.13 times the national GDP and 0.58 times the GDP of Ho Chi Minh City. The growth rate of GRDP Hanoi is 7.32% per annum for the period of 2011 - 2015 and 8.5% for 2017, the highest level in the last 6 years. Particularly, the growth rate of trade and service sector always achieves high growth rate over the years, reaching an average of 7.47% in the 2011 - 2017 period, standing only after industry and construction reached 8.58%. This shows the great role of the trade-service sector in contributing to Hanoi's GDP growth, employment and quality of life.

The development of the trade sector will help improve the level of economic development, offset the shortage of production and goods of the city, contribute to the socio-economic stability. However, due to the impact of the general economy status, the contribution of trade is unstable over the years and has not reached the target of sustainability, creating insecurity in the roadmap for economic development in general and trade in particular.

**Table 1: GRDP growth rate in Hanoi 2011 – 2017**

*Unit: %*

Year	GRDP	Agriculture, forestry and fisheries	Industry and construction	Service
2011	7,0	6,9	8,9	7,5
2012	6,9	3,0	12,8	6,0
2013	7,3	4,1	6,2	6,7
2014	7,5	2,0	7,2	7,5
2015	7,9	2,3	7,4	8,0
2016	8,2	2,2	9	8,3
2017	8,5	2,5	7	10,3
<b>Average 2011-2017</b>	<b>7,47</b>	<b>3,42</b>	<b>8,58</b>	<b>7,33</b>

*Source: Statistical Year Book of Hanoi 2017*

#### 3.2. Total retail sales of goods in Hanoi

*\* In terms of value and growth*

According to General Statistics Office and Hanoi Statistical Office, in the period of 2011 - 2017, the total retail sales of goods in Hanoi has increased from 161,626 trillion dong to 561 trillion dong with average growth during the period reached 12.1% per year. In the past two years, the growth rate of total retail sales in Hanoi has been stable at nearly 7% thanks to the government's policies to support and create favorable conditions for enterprises to boost production, focusing on attracting investment capital, raising the quality of goods, designs and beautiful packaging to meet consumer demands.

The growth of total retail sales in Hanoi over the past few years shows that commercial activities in the city have developed well, ensuring the circulation of goods to meet the production and consumption demand, production and consumption towards modern ways. It can be seen, however, that the capital city, the economic, political and cultural center of the country with many potentials can be exploited for commercial development such as: favorable geographic economy, the density of production establishments and agencies, large schools, high living standard of population, visitors, large tourists, early developed commercial activities, developed material and technical facility system, the growth of the trade sector over the past years is not matched. The city's commercial GRDP growth rate is not as fast as the increase rate of the flow of goods. Trade is largely based on the benefits from price difference with traditional trading methods. New modern business forms and modes have not yet developed strongly so the added value created in commercial activities is not high.

**\* About trade structure**

According to the economic model, the largest contribution to the total retail sales in Hanoi in the past years is the non-state sector with the proportion of 85-90% which has been increasing over the years, particularly from 83% in 2011 to 86.5% in 2017. This proves that the non-state sector with dynamic and high competitiveness is always maintaining a dominant position in the field of retailing in Hanoi, contributing greatly in promoting the economic development of the city. In addition, attracting the participation of large foreign retailers with great financial strength, prestige and brand needs to be considered seriously to change the appearance of the trade sector in the city toward modern direction.

**Table 4: Total retail sales of goods in Hanoi in the period 2011-2017**

<b>Indicators</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>Value (Billion dong)</b>							
<b>I. Economic type</b>	<b>161.626</b>	<b>168.885</b>	<b>199.881</b>	<b>225.319</b>	<b>240.237</b>	<b>256.510</b>	<b>286.885</b>
State	18.563	6.162	9.252	27.499	29.529	26.990	28.987
Non-state	134.203	153.523	176.723	187.683	201.731	221.194	249.064
<i>Collective</i>	<i>449</i>	<i>480</i>	<i>73</i>	<i>71</i>	<i>80</i>	<i>69</i>	<i>77</i>
<i>Private</i>	<i>60.865</i>	<i>69.983</i>	<i>85.164</i>	<i>95.673</i>	<i>101.054</i>	<i>110.876</i>	<i>124.846</i>
<i>Individual</i>	<i>72.889</i>	<i>83.060</i>	<i>91.486</i>	<i>91.939</i>	<i>100.597</i>	<i>110.249</i>	<i>124.141</i>
FDI	8.860	9.200	13.906	10.137	8.977	8.326	8.834
<b>II. Commodity class</b>	<b>161.626</b>	<b>168.885</b>	<b>198.881</b>	<b>225.319</b>	<b>240.237</b>	<b>256.510</b>	<b>286.885</b>

<b>Indicators</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Foods	30.775	31.423	53.778	60.615	53.172	57.555	64.26
Textiles	13.437	11.968	14.462	16.407	18.058	16.573	
Home appliance	21.132	20.141	27.332	31.987	38.199	42.994	
Item, culture, education	3.071	2.795	2.873	3.222	5.844	6.070	
Wood and building materials	5.379	4.409	5.402	6.076	7.049	7.346	
Automobiles with 12 seats or less and vehicles	20.956	19.791	24.552	30.084	35.787	38.529	
Petrol and other fuels	38.868	43.502	41.215	39.353	40.467	43.122	
Repair of cars, motorbikes and other motor vehicles	2.482	5.156	6.707	6.819	5.427	5.538	
Other goods	25.526	29.700	22.560	30.756	36.234	38.783	
<b>Percentage (%)</b>							
<b>I. Economic type</b>	<b>100,0</b>						
State	11,5	3,6	4,6	12,2	12,3	10,5	13,4
Non-state	83,0	90,9	88,4	83,3	84,0	86,2	76,5
<i>Collective</i>	<i>0,3</i>	<i>0,3</i>	<i>0,0</i>	<i>0,0</i>	<i>0,0</i>	<i>0,0</i>	<i>0,0</i>
<i>Private</i>	<i>37,7</i>	<i>41,4</i>	<i>42,6</i>	<i>42,5</i>	<i>42,1</i>	<i>43,2</i>	<i>38,5</i>
<i>Individual</i>	<i>45,1</i>	<i>49,2</i>	<i>45,8</i>	<i>40,8</i>	<i>41,9</i>	<i>43,0</i>	<i>38,0</i>
FDI	5,5	5,4	7,0	4,5	3,7	3,2	10,1

Source: Hanoi Statistical Year Book 2014, 2017

### **3.3. Export - import status in Hanoi**

#### **3.3.1. Export**

##### **\* Turnover and growth**

In the period 2011- 2017, Hanoi export situation has strongly fluctuated. Between 2011 and 2017, exports have increased steadily from \$9.782 million to \$11.779 million. In general, the export growth rate is only 5.04% per year, a modest growth rate, lower than the national growth rate and not corresponding with the potential and strength of the capital city.

##### **\* Export structure**

Regarding to export structure by economic sectors, it can be seen that export activities in Hanoi in recent years have attracted many economic sectors. At present, the foreign-invested sector is leading the share of the city's total export turnover by nearly 50%, followed by the non-state sector, then the state economic sector. In the period of 2011 - 2017, the share of the foreign invested sector increased from 40.1% to 51.2%, the share of the non-state sector increased from 19.8% to 30.66%, and the proportion of the state sector decreased from 40.1% to 18.1%. In general, the foreign-invested sector and the non-state economic sector, especially the foreign invested sector, are playing a key role in

export activities in Hanoi.

**Table 5: Export turnover in Hanoi from 2011-2017 by economic sector and industry**

Criteria	2011	2012	2013	2014	2015	2016	2017
<b>I. Economic type</b>	<b>100,0</b>						
State	40,1	34,5	31,8	31,4	25,5	19,6	18,1
Non-state	19,8	17,1	18,7	20,2	24,7	31,5	30,66
FDI	40,1	48,3	49,5	48,4	49,8	48,9	51,2
<b>II. Product groups</b>	<b>100,0</b>						
Agricultural products	9,5	10,4	9,8	9,6	10,1	9,0	8,4
Forest products	0,9	0,9	1,5	1,6	1,8	1,9	
Seafood	0,1	0,1	0,1	0,1	0,1	0,1	
Garment, textile	11,1	10,7	13,2	13,3	15,6	14,4	13,56
Footwear and leather products	2,0	1,9	1,8	2,2	2,3	2,2	1,8
Electronics	3,1	3,6	2,9	5,9	5,5	4,0	5,4
Computer accessories and peripherals	15,9	18,9	18,5	14,2	13,7	13,3	13,86
Handicrafts	1,2	1,5	1,7	1,7	1,7	1,6	1,5
Petroleum (Temporary import, re-export)	16,4	12,6	7,8	6,9	5,1	4,7	5,17
Coal	2,9	1,9	1,0	0,9	0,3	0,2	
Others	36,9	37,5	41,7	43,5	43,8	48,6	31,78

*Source: Hanoi Statistical Year Book 2014, 2017*

The export structure of Hanoi has shifted in a more diversified way, boosting exports of new goods such as electronics, metal, software. In addition, exports are not different from neighboring countries, the competitiveness of goods is low, this is also the main cause of the trade deficit of Hanoi in the past years. Export structure of Hanoi has been improved thanks to the economic restructuring and the process of industrialization and modernization. The proportion of processed products and groups has gradually increased, and the quality of export goods has been raised considerably.

**\* *Export markets:***

Beside traditional export markets such as ASEAN, China, the EU, the United States and Japan, many exporters in Hanoi over the past few years have actively sought and penetrated new markets. Along with support programs from the government in understanding market information, laws, business policies of importing countries, trade promotion, many enterprises have actively invested in technology, quality, product design to increase the competitiveness of goods, to create advantage to enter the market. However, penetration of new markets is also difficult because most of them are difficult to access due to far geographic location, new business policies of the country, and the requirements for adjusting products to suit consumer tastes.

### 3.3.2. Import

\* **Turnover and growth:** In the period of 2011-2017, Hanoi's import turnover has increased from \$25,345 million to \$29,829 million. In general, the import turnover growth rate over the years has been unstable, the highest reached 18.2% in 2011 and the lowest is -4.7% in 2012, average growth rate of imports in the period of 2011 - 2017 is 3.2%. It can be seen that the growth rate of Hanoi's import turnover is lower than that of the export turnover and also lower than the growth rate of import turnover of the whole country in the same period.

**Table 6: Import turnover in Hanoi in 2011 - 2017**

Criteria	Đơn vị tính	2011	2012	2013	2014	2015	2016	2017
Import turnover	Million USD	25.345	24.144	23.441	24.399	25.713	25.238	29.829
Development indicator	%	118,2	95,3	97,1	104,1	105,4	98,2	118,2
In detail: - Domestic import	Million USD	10.259	10.140	9.962	10.492	11.057	11.188	13.383
- Proportion	%	40,48	42,00	42,50	43,00	43,00	44,33	44,86

Source: Hanoi Statistical Year Book 2014, 2017

\* **Import structure:** In the structure of imported goods of Hanoi, the leading group was consumption goods with the proportion of nearly 50%, the second was the group of raw materials and finally the group of machines, equipment, component parts. Therefore, it can be seen that domestic consumption products are increasingly subject to competitive pressure from imports. The bright spot in the import structure of Hanoi is that the proportion of imported raw materials is declining, showing less dependence on exports of imported raw materials, helping manufacturers and exporters to be active in business strategies and export product prices. In addition, the proportion of imported machinery, equipment and accessories is also increasing, showing that businesses are increasingly focused on investing in production technology.

**Table 7: Import turnover in Hanoi in 2011-2017 by economic sectors and commodity groups**

Criteria	2011	2012	2013	2014	2015	2016	2017
<b>I. Economic type</b>	<b>100,0</b>						
State	64,0	63,0	62,5	61,5	62,0	61,2	61,0
Non-state	17,0	17,0	17,0	17,5	17,0	16,7	16,62
FDI	19,0	20,0	20,5	21,0	21,0	22,1	22,78
<b>II. Product groups</b>	<b>100,0</b>						
Machinery, equipment, component parts	19,3	22,7	22,6	21,0	25,4	28,8	23,03
Raw materials	32,8	34,3	34,5	35,5	26,1	24,0	33,7

Consumption goods	47,9	42,9	42,9	43,5	48,5	47,2	43,0
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Source: Hanoi Statistical Year Book 2014, 2017

This shows a high level of centralization on the import of raw materials, machinery and equipment for business and production and export processing of the city, according to sustainable targets with the proportion of satisfied products more than 60% of the total import value, but the import value should be more ensured in the process of sustainable development.

#### 4. Conclusions and policy implications

Sustainable trade development is a stable, rational, long-term development in terms of scale, quality, structure and level of environmental friendliness of trade. Applying the specific assessment of trade in Hanoi in the period of 2011-2017 shows that: regarding the scale of trade development, the number of enterprises in the area has increased, but unstably in the period. Total retail sales have increased over the years but are mainly in non-state economic field. Import-export turnover in the period has increased, the market has been expanded but the increasing rate is not stable. About the quality of trade development, on average in 2011-2017, the contribution of trade per service in Hanoi is 57%, GDP is 41,81%, which can be seen that this proportion is still modest, and do not match with the potentials of the city, and strongly influenced by the general economic fluctuations. The structure of high quality products tends to increase but still makes up a small proportion. The issue of environmental protection has been addressed but the effectiveness of management of resource exploitation for production and waste treatment from commercial activities is not high. In general, the scale of trade growth is quite high but the quality of trade growth is low and unsustainable.

In the context of international and regional integration, our country in general and Hanoi in particular have had many opportunities to expand export markets, increase import of machinery and equipment, it is important to serve the sustainable development of trade in the area. This is a favorable opportunity for Hanoi to improve the competitiveness of many industries and products by reducing production costs. However, Hanoi's economy is still weak and small, and depends on the world economy, which brings Hanoi the challenges and difficulties in implementing sustainable trade development. The commercial regime in Hanoi is implementing a lack of strategic, scientific, heavy on immediate benefits, lack of long-term vision. Policy mechanism is lack of synchronism and not practical.

From the research, in order to develop sustainable trade in Hanoi, the city leaders need to: *Firstly*, entirely exploit benefits from the process of globalization and international integration, and it is necessary to have specific solutions and roadmaps to realize development strategies for each commodity category in order to ensure that international trade is not only for turnover or growth rates but also sustainable. Hanoi is a capital city with many advantages to promote international economic relations, including investment attraction and trade development. Therefore, it is necessary to constantly improve and create a favorable environment for attracting foreign investment. At the same time, the

markets of China, the European Union (EU), Japan, the Association of Southeast Asian Nations (ASEAN) should be maintained and promoted, actively seeking new international markets, integrate international and regional economics.

*Secondly*, to facilitate enterprises in accessing information, penetrating and expanding the market, it is necessary to enlist the help of Vietnamese counselors and embassies overseas in assisting enterprises to do market research and seek foreign partners. To support human resource training activities for the trade sector to encourage the potential development of entrepreneurs, build a team of policy makers, international trade experts, market leaders in each industry, laws, import-export marketing. To organize training courses to equip the necessary knowledge for businessmen, focusing first aid on business start-ups, owners of small and medium enterprises, owners of household economy home, farms...

*Thirdly*, to standardize the trade regime, promulgate trade policies to encourage the development of trade and expand the trade scale while paying attention to raising the quality and efficiency of trade. Facilitate businesses to diversify their exports and multilateralize their international trade, actively integrate into the regional and world economy. Hanoi Industrial and Trade, the state management agency in charge of commerce, is responsible for organizing and guiding the implementation of legal documents guiding the Commercial Law and other provisions of the law on trade development, to ensure the sustainable trade development in the context of international economic integration, the State's regulations on market management, inspection and combat against smuggling and trade frauds...in order to match with the local situation.

*Fourthly*, scientific and technological development is one of the solutions to improve the quality and brand name of goods and meet the requirements of sustainable development. Prioritizing to import advanced and modern technologies, new-generation machinery and equipment. Strengthening and speeding up the transfer of technology, especially specific technologies in manufacturing, processing, etc. To renew the approach to statistical work according to international guidelines and standards for better management in the process of international integration. To apply modern scientific achievements effectively to exploit natural resources, encourage the production of environment-friendly products, dispose of commercial waste and protect the environment.

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# SOLUTION FOR DEVELOPMENT OF FIVE SATELLITE CITIES IN HANOI

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## **Abstract**

*The population residing in urban areas has been rapidly increasing, especially in the developing world, giving rise to the need for cities and urban establishments to adapt and grow with the change. Satellite cities were developed to shift the population from congested urban areas to new developments established nearby. The paper assesses five satellite cities in Hanoi to explore the potential of this form of development as a sustainable tool for planners in the 21st century.*

**Keywords:** Hanoi, satellite cities, sustainability, urbanization.

## **1. Introduction**

According to estimates by the United Nations, 66% of the world's population will be living in urban areas by 2050, upward from 54% today (United Nations, 2014). The rural to urban migration is not only adding a large number of new residents to cities but also putting pressure on the resources and infrastructure of these metropolitan areas.

Additionally, the influx of people into Hanoi has environmental consequences that can adversely impact economic activity and public health (Luan Duy, L. 2014). Increase in population density, socio-economic disparities and infrastructure problems arise that stress the need for sustainable city planning to result in the efficient running of Hanoi (Divya, L., and Helga-Jane, S. 2018). Hence, developing sustainable greenfield sites is one way of absorbing some of the pressure. Satellite cities are one form of greenfield developments.

## **2. Method**

The paper will seek to explore the five cases of Soc Son, Son Tay, Xuan Mai, Phu Xuyen and Hoa Lac. If designed and built efficiently by conforming to sustainable land use and environmental principles, the development of satellite cities can potentially alleviate the issue of overcrowding in Hanoi without resulting in urban sprawl, as well as help reconnect nature with urban life. However, the research was limited by the availability of information. Data on certain indicators was not available for the towns, which is why they had to be excluded from the analysis. Furthermore, the most current information on the satellite cities in Hanoi was also not available for certain indicators.

### 3. Results

#### 3.1. Literature review

The Oxford dictionary of Architecture define satellite towns as:

“Towns that are self-contained and limited in size, built in the vicinity of a large town or city to house and employ those who would otherwise create a demand for expansion of the existing settlement, but dependent on the parent-city for population and major services.”

The definition continues to state that satellite towns were influenced by Garden Cities and makes the distinctions between consumer-satellites that are essentially dormitory suburbs, and production-satellites that include the capacity for commercial, industrial and production facilities.

As Hall (2014) explains, Garden Cities were designed to move people away from the slums and the smoke of industrial towns and into new, self-contained towns that were built in open countryside. The idea as explained in Howard’s famous ‘Three Magnets’ diagram shown in Figure 1, was to combine the best of town and country in a new settlement. This meant merging the economic and social opportunities of the town with the fresh air and nature of the countryside. The towns were to be locally managed and self-governed with services provided by the municipality or by the private sector, whichever was more efficient.

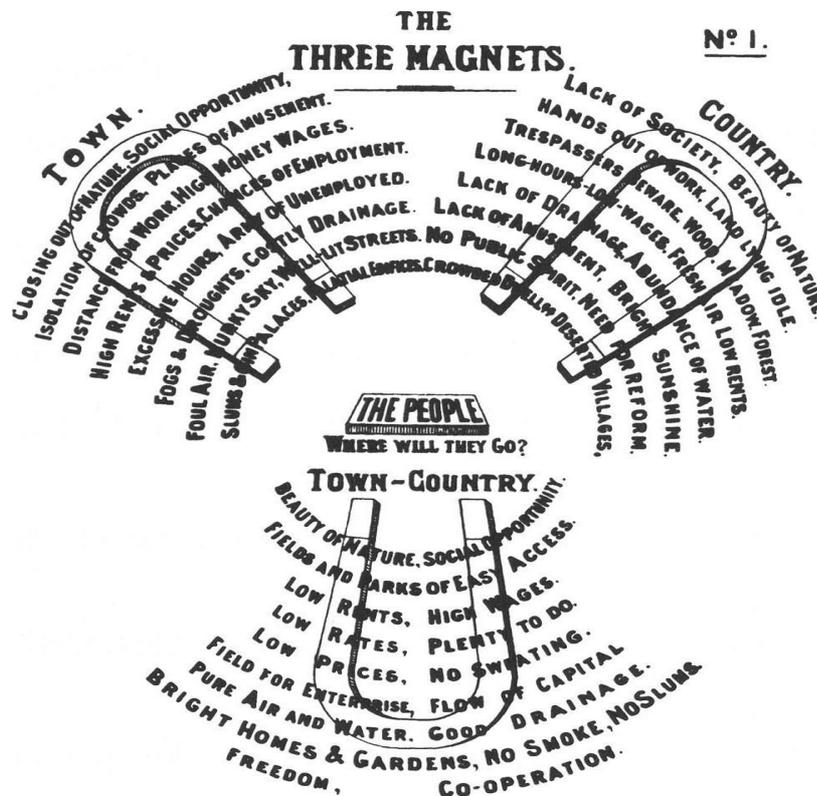


Figure 1: Ebenezer Howard's 'The Three Magnets' (Howard, 1902)

In the context of town planning, the question arises about indicators of sustainability. Astleithner et al (2004) write about sustainability indicators stating that they should be measurable over space and time. In a report published by Sustainable Cities

International in 2012, the authors note that while there is no ‘one size fits all’ method for developing a sustainability plan for municipalities, there are common aspects that can be considered while designing a plan. A 2015 report titled ‘Indicators for sustainable cities’ published by the European Commission discusses the available range of sustainability indicators and frameworks and how to choose between them.

The report states that while selecting an appropriate framework, the purpose for its use needs to first be defined. The framework can be used as an explanatory tool, pilot tool or performance assessment tool. The report also states that it is important to identify categories that are most relevant to measuring progress towards sustainable development. The categories, as delineated above, include social, economic and environmental sustainability. Social sustainability relates to subjects like community development, health equity, social justice and livability. Economic sustainability covers indicators that measure a nation’s ability to support a certain level of economic production. Environmental sustainability covers topics that relate to a city’s harmony with nature.

Furthermore, the framework should be applicable across different urban areas to allow for comparisons. Thus, the availability of data and its standardization should be taken into account when considering elements of the framework. Finally, the report notes that indicator sets should be locally relevant and be able to reflect the geographical and social context of the urban area in question.

Many states and municipalities have used sustainability frameworks to guide and monitor the sustainability objectives applied to their towns. While sustainability has become a bigger agenda in town planning and management post the 1980s, some of the objectives of 20<sup>th</sup> century satellite cities include self-containment of towns, providing a wide range of housing and creating towns that are in harmony with nature and protected from environmental pollution. These objectives are echoed in some of the social, economic and environmental sustainability indicators included in the frameworks applied today.

In the 20th century, Satellite Towns were introduced to reduce congestion in large urban centers by relocating people and jobs to the new developments (Philips and Yeh, 1987). In Britain, these new developments represented the ideas inherent in the original Garden Cities of Letchworth and Welwyn. They were intended to be limited in size and surrounded by open space. The towns were also intended to be self-contained through the provision of housing, employment and recreation to form a complete urban environment. Land uses in these towns, however, were separated and in some cases, social grouping in neighborhoods, based on income classes, was encouraged.

Philips and Yeh (1987) also note that self-containment has been a major objective of New Town developments, but they add that it has rarely been truly achieved. They posit that this is because self-containment has a multitude of dimensions, including balancing housing with employment, employment with skills of residents, housing with respect to different social groups as well as provision of services for all. If a balance is not achieved in any of these areas, the decision has to be made to connect the town with the central city through adequate transportation systems. This provision, further reduces the self-

containment of the satellite towns as residents commute to the central city for better employment opportunities and social activities.

Cervero (1995), however, notes that this may not necessarily be a bad thing. He writes about the New Towns of Stockholm that were developed in the mid 20th century in an orbit around the center of the city and connected via a regional rail system. He explains how planners intended to make these towns self-contained by distributing industry and offices proportionately with respect to the residential population of the towns.

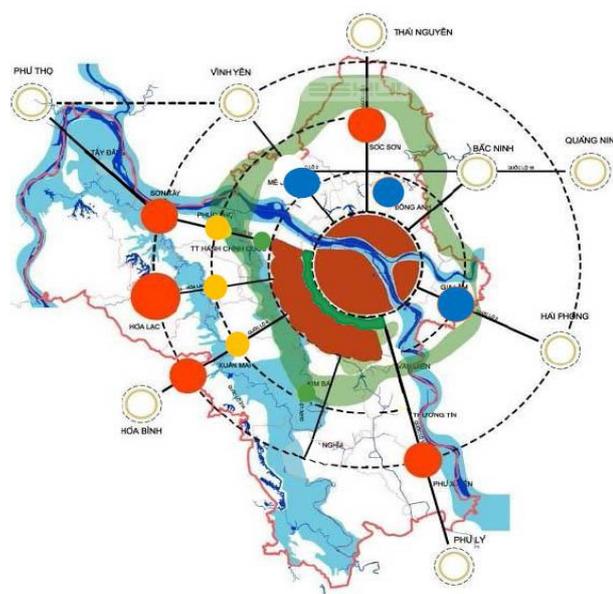
The importance of public transit in achieving a sustainable city is highlighted by various authors. Newman and Kenworthy (1996) assess the land use-transport connection and the problems associated with unconnected automobile cities. According to them, the automobile dream turned into a nightmare when the easy access to individualized locations led to an exponential increase in traffic. They went on to outline the problems associated with such levels of automobile dependence stating severe environmental issues, economic inefficiency and lack of a community as some of the larger issues. They recommend transit-oriented development as one of the solutions to these issues.

### ***3.2. Characteristics of satellite cities in Hanoi and shortcomings in management***

According to the master plan for Hanoi's socio-economic development by 2030, with a vision to 2050, the capital will develop based on a model of urban clusters, with one central urban area and five satellite cities connected to it by a belt-transport system.

The central urban area will be expanded from the city center in four directions, including the enlarged areas to Belt Road No 4 in the west and south, to Me Linh and Dong Anh districts in the north, and to Gia Lam and Long Bien districts in the east.

The central urban area and five satellite cities will be separated by green corridors, which will account for 70 percent of the city's natural areas. The five satellite cities - Hoa Lac, Son Tay, Xuan Mai, Phu Xuyen and Soc Son – will each have specific functions, with the purpose of sharing the demand with the urban centre in terms of housing, training, industry and services.



**Figure 2: Five satellite cities in Hanoi**

Accordingly, Hoa Lac satellite city will have the main function of serving science-technology, and training. Son Tay satellite city has been selected as the urban area of historic culture, resort tourism focusing on the Son Tay Citadel preservation zone, Duong Lam ancient village and developing the center for tourism associated with Xuan Khanh lake, training services, health and the new urban. Xuan Mai satellite city will be the urban area of services - industries supporting the development of small industries and craft village systems. Phu Xuyen satellite city is dedicated to industry, transportation hubs, and transshipment of goods. Soc Son satellite city will focus on the development of industry and air services, eco-resort tourism, forming the Mai Dinh industrial zone and clean industrial zones, medical centers, universities zone.

**Table 1: Population of satellite cities in Hanoi**

Satellite cities	Planning area (ha)	Population in 2030 ( thousands)
Hoa Lac	18000	600
Son Tay	4000	186
Xuan Mai	4500	220
Phu Xuyen	2500	127
Soc Son	5500	250

*Characteristics of satellite cities in Hanoi*

The administrative boundary of some satellite cities is in two and three districts, such as Hoa Lac, Phu Xuyen and Son Tay satellite city. There are two satellite cities covering only one part of the district - Xuan Mai and Soc Son satellite city. The administrative boundaries and decentralization have caused difficulties for the coordination and operation among the levels of city government and central agencies in the plan implementation and administrative management in satellite cities.

The satellite cities of Hanoi are planned on the basis of towns and communes with different nature, size and development levels. Currently, Son Tay satellite city is class 3 city with a history of hundred years of development (World Bank, 2011). The other satellite cities are parts or subdivisions of some suburban districts, including most of the country side communes. This difference in levels of urban development requires appropriate policies for each satellite city in development investment and management.

*Authorities of satellite cities are different.* Hoa Lac satellite city located on the boundary of Quoc Oai, Thach That districts and Son Tay Town, but competent to approve the planning and management of development investment under the Central Government. The other satellite cities have boundaries in districts and towns under the management of districts and towns, such as Xuan Mai satellite city in Chuong My district, Soc Son satellite city in Soc Son district, Son Tay satellite city in Son Tay town, Phu Xuyen satellite city includes Phu Xuyen district and a part of Thuong Tin district, thus be managed by both districts.

Hanoi's satellite cities are subjected to intense competition from cities, provinces and cities in the Capital and the Northern Key Economic Zone. Hence, the satellite cities of

Hanoi can be considered as a system of urban center in the region such as Nam Dinh, Bac Ninh, Thai Nguyen and Vinh Phuc province.

#### *Issues in satellite city management*

Owners who manage the satellite cities are not clearly defined. In the legal documents of Hanoi as well as the Government use the word "satellite city" without defining it is city or town. In Vietnam, the organization system of administrative units does not have a satellite city model, so finding a suitable management model for satellite cities in Hanoi needs to be studied when most of them are located on the administrative border of the town and suburban districts. This is a problem that managers do not pay attention to which causing other problems.

The interlacing of administrative boundaries and decentralization make it difficult for administrative management in satellite cities. Satellite cities and central city are dependent on the nature and function, but satellite cities still need to be an independent administrative unit with administrative authority to manage. Urban management following to "Town" model as in the case of the Son Tay satellite city also needs to have decisions to merge Cam Thuong commune of Ba Vi district into Son Tay town and transfer the communes of Son Tay to Hoa Lac.

*Overlap planning.* The master plan for satellite cities has been approved by the People's Committee of Hanoi in 2014-2015 but during that time the People's Committee approved the master plan for the districts construction. District Committee must implement both types of planning which highly overlapping, and otherwise when implementing the plan, the district will not care about the territory has been planned into satellite cities, because satellite cities are directly under the city. Expectation in investment capital from the city is very probable.

*Lack of co-operation mechanism.* At present, satellite cities in Hanoi and central city do not have any cooperation mechanism. The question is that Hanoi needs to develop a suitable cooperation form between each satellite city and the central city in the direction of building a satellite city to reduce the pressure on the central city in terms of population, employment, transportation and environment. However, before making a cooperation mechanism, it is necessary to identify the management owners.

### **3.3. Solutions for satellite city development in Hanoi**

The development of satellite cities is a trend that many major cities in the world as well as in Vietnam. The construction and development of satellite cities in Hanoi are seen as a matter of urgency. They require a comprehensive plan and appropriate and attractive mechanism and policies. To achieve this goal, there should be a legal framework for effective management and cooperation between satellite cities and central city to ensure no contradict about rights and responsibilities.

#### *Building a satellite city management model*

Building the management model appropriate to the nature and level of development of each satellite city and meeting the immediate and long-term requirements is very

necessary. The identification of urban authorities will determine the management and solve administrative management issues in satellite cities. Law on Organization of Local Government (No. 77/2015/QH13 passed by the National Assembly on June 19, 2015) has defined city government under the Cities under the Central Government (like the cities under the province). This would allow urban administration in large cities such as Hanoi to organize and manage satellite cities following the model of the city directly under the province.

*Strengthening the planning management of satellite city*

To review the general planning of satellite cities and general planning of districts and towns. Assessing the use of land in industrial parks and new urban areas in satellite city. Satellite city planning should clarify and specify the function and criteria of satellite cities. Build specific characteristics for satellite cities to increase the value of land and real estate in the future. Specially, consider adding indicators for green urban planning, ecological and smart city to contribute to specific values for satellite cities, improve utilities and quality of life for people.

Develop regulations on planning and management for each satellite city, including the regulations on development, urban development indicators, planning indicators, land use regulations, etc.

*Developing cooperation mechanism between central city and satellite cities*

Developing a cooperative mechanism is very important for connecting the satellite city economy to the central urban economy in order to improve the competitiveness in order to increase the "attractiveness" of satellite city. Firstly, Hanoi authority develops an investment mechanism to attract foreign investment and private investment in the construction of projects in satellite cities. Furthermore, develop mechanisms for coordination between administrative units (districts) related ministries and agencies (Ministry of Construction, Ministry of Science and Technology, Ministry of Education and Training) in the process of planning and investment in construction, management and operation of satellite cities.

*Strengthening the investment of infrastructure construction*

In order to increase the "attractiveness" of satellite cities, the infrastructure should be nicely built, synchronous and modern in the direction of Smart city meeting the traffic demand from the central urban area to the satellite cities. In addition to the planned transportation system, organizing additional bus routes, especially BRT (Bus Rapid Transit) should be considered, which is connected the central urban bus stations to the satellite cities and satellite cities to each other. Upgrading bus services to encourage people to use buses between downtown and satellite cities. Construction of a parking system for the use of public transport. Building a transport network linking the modes of transport in satellite cities.

In order to connect the central urban area to the satellite cities, it is necessary to carry out the general planning of Hanoi capital to renovate the National highways and other highways; Building some of new roads (Tay Thang Long road connected with Son Tay satellite city, Ho Tay - Ba Vi road connected to Hoa Lac satellite city and Ba Vi area, Ha

Dong - Xuan Mai road connected to Xuan Mai satellite city. Ngoc Hoi-Phu Xuyen road link with Phu Xuyen satellite city); Construction of urban rail lines extends to satellite cities. However, the completion of the above transportation system requires a lot of resources.

#### *Improve satellite city development policy*

To attract FDI in order to implement developing satellite cities, Hanoi's authorities must accelerate administrative reform; improve the processes of planning, investment, building and taxation to support businesses. Numerous trade promotion activities will also be held to attract more domestic and foreign investment. The city has been tackling obstacles overseas investors face in a bid to draw more foreign direct investment and boost socio-economic development. Branches and ministerial departments are required to listen to the complaints of foreign-invested enterprises and offer solutions in a timely manner. In turn, foreign investors are asked to implement their licensed projects on schedule.

#### **4. Discussion and Conclusion**

**Discussion:** Hanoi's satellite city centered theory is not only five urban areas as Hanoi has planned, but many urban systems in the region such as Nam Dinh, Bac Ninh, Thai Nguyen and Vinh Phuc. The distance between the central city and the satellite city can be 80-120 km by car. The urban areas in Nam Dinh, Bac Ninh, Thai Nguyen and Vinh Phuc are capable reduce the pressure on Hanoi?

**Conclusion:** In order to develop the five planned satellite cities, Hanoi should implement synchronous solutions. For each satellite city, it is possible to emphasize certain solutions. All solutions are aimed at developing satellite cities, creating the "attractiveness" of satellite cities. Hanoi's satellite cities are subject to fierce competition from cities in the Capital Region and the Northern Key Economic Region. However, it should be noted that this also contributed to reducing the pressure on the capital in the process of urbanization.

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# A BRIEF DESCRIPTION OF THE SITUATION AND SOME SOLUTIONS TO DEVELOP THE ECONOMIC OF TRADITIONAL CRAFTS VILLAGES IN VIETNAM IN THE CURRENT CONTEXT

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## **Abstract:**

*By means of appropriate research (synthesis - analysis, document study, field survey,...), the article affirms. Traditional craft villages are basic units, play an important role in economic and social development and improve the material and spiritual life of the people. In the process of operation, traditional craft villages are still limited. For traditional craft villages, there are a number of supporting solutions:*

*(i) Support traditional craft villages to stabilize and expand markets; (ii) improve infrastructure; (iii) perfecting the system of laws and policies of the State; (iv) improve the management of traditional trade villages; (v) Facilitate professional associations to be established and operate; (vi) Technological innovation, product diversification and product diversification.*

*From there, the article concludes: As the village economy develops, it will facilitate the shift of agricultural economy to cottage industries.*

**Key words:** Economic development, trade villages, traditional trade villages.

## **1. Introduction**

About the current status of traditional crafts villages in Vietnam.

Vietnam is an agricultural country. So far about 70% of the population are farmers, living in rural areas, doing farming. In that, traditional villages and traditional crafts villages hold a great importance position in the economic, social and cultural life of the Vietnamese people of today. Traditional crafts villages are basic units, play a very important role in economic and social development and improve the material and spiritual life of the people. It would be difficult to understand Vietnam's overall economic picture with its social and economic transformations if we did not study the history of its formation and development, economic characteristics and social relations of the village govern the life of the traditional crafts village of Vietnam. In the process of revolutionary leadership, the Communist Party of Vietnam has always affirmed the position and strategic role of the traditional crafts village. The Party and the State have issued many guidelines and policies to promote the development of trade villages in order to change the appearance of rural areas in Vietnam. Proper research and understanding of the role and economic position of the trade village in Vietnam's economic and social life is not only about understanding traditional history, but also to give us full awareness of the historical, economic, social and cultural characteristics of Vietnamese villages.

## 2. Method of study

Studying solutions to develop traditional handicraft villages will help to make socio-economic policies appropriate to localities and integrate with the whole country on the way of industrialization and modernization.

*“Economics and society are broad and interrelated aspects. Economic change is changing society as well, and in turn, society impact to the economy, promotes or inhibits economic development. Studying the change of socio-economic structure is the basis for understanding all the changes in other fields” (1)*

The collection of historical data on the economic and social situation of traditional craft villages and related documentations for research purposes..

Survey and fielding some nearby traditional villages that are influential and related to economic and social development of traditional craft villages.

Study the main issues in the two fields of economic and social of the villages will provide the explanation for the economic and social transformation of traditional trade villages.

### *Research Methods*

In order to solve the problems, the author uses the historical method, logical method and combination with different methods.

*Historical method, logical method, comparative method, survey and fieldwork method, interview method:* Retrospective interview and in-depth contemporary interviews. The subjects that the author interviewed were diversified in terms of economic conditions, social status, ages, genders, etc. Especially we interviewed well-known artisans and village elders to understand clearly about history of custom, experience in production and living.

- On that basis, to clarify the outstanding features of the social, economic transformation of traditional craft villages in order to clarify the role of small handicraft industry of the traditional villages, introducing traditional and economic, political, cultural and social characteristics, thereby clarify more about Vietnamese small handicraft industry in the past and at the present.

The People's Committee of Hanoi has approved the Decision No. 31/2014/QĐ-UBND dated August 04th 2014 promulgating the policy on encouraging the development of craft villages in Hanoi, stipulates the subjects to be supported, vocational training, individual trainees who have permanent residence registration in Hanoi, males from 16 to 60 years old, women from 16 to 55 years old who are trained in the industries: ceramics, silver beans, bronze casting, sculpture, lacquerware, mosaic. Thus, the remaining groups of industries such as embroidery, bamboo and rattan weaving will not benefit from the policies of the management agency, it is easy to lead a situation that does not encourage good craftsmanship and vocational training. Therefore, the city of Hanoi should have a policy adjustment to the traditional handicraft industry to be supported to develop synchronously

### **3 Research results**

#### ***3.1 Some features about the actual situation of traditional craft villages nowadays***

In Vietnam, traditional crafts villages play an important role in the development of the local economy and the general economy of the country. If a decade ago, in 2008, handicrafts exported in 2008 reached 850 million USD (2). Of which, the rattan and bamboo products reached 225.66 million USD. Ceramics reached 343, 122 million USD; Wood products reached 2,804, 254 million USD. Vietnam has become one of the three largest exporters of rattan and bamboo in the world, such as China, Indonesia and Vietnam. (3) Currently, according to the Vietnam Association of Crafts Villages, there are 5,411 craft villages and trade villages, of which 1,864 craft villages, traditional craft villages and 115 traditional craft have been recognized. This is advantageous in the export of handicraft products. However, according to some experts, many products from Vietnamese craft villages are either out of competition or can not keep up with the trade mark leading to the loss their position.

By the year 2017, Vietnamese handicrafts are declining strongly in major markets such as Europe, Japan, USA... in emerging countries such as Philippines, Thailand, Indonesia the exporting of handicrafts are increasing by nearly 15%. By the end of 2017, as reflected by the exporters of handicrafts, orders have not increased dramatically. According to preliminary statistics from the General Department of Vietnam Customs, by the end of November 2017, the export turnover of rattan, bamboo, sedge and carpet products reached 25.3 million USD, raising the turnover of November 2017 to 242.9 million USD, up to 2.64% compared with 11 months of 2016.

In the export market of bamboo and rattan products in Vietnam, the US is the main market, accounting for 20.1% of total turnover, but compared with the same period in 2016, the turnover decreased 13.44%. The second largest market was Japan, up to 23.05% reached 47.9 million USD, the third was Germany with a decrease of 9.59%, equal to 25.6 million USD. Generally for the first 11 months of 2017 export turnover to the markets have growth rate of 61.9% and the market with turnover decreased accounting for 38%. The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) has just been signed, the trade promotion opportunities for Vietnamese textiles and garments are huge. This is one of the main items of the traditional craft villages in Vietnam, when the Agreement takes effect, this will enable traditional handicrafts to penetrate into the markets of other countries, create a large source of income for the country and at the same time make use of cheap labor in Vietnam market. According to the Vietnam Textile and Garment Association, Vietnam's textile and garment export turnover is ranked second in the country. In 2011, the textile and garment export turnover reached nearly USD 2 billion, reached USD 17.1 billion in 2012, making Vietnam the fifth textile and garment exporter in the world. By 2017, Vietnam's textile and garment export turnover reached USD 31 billion, increased 10.23% compared to 2016. In which, textile and garment export turnover reached USD 25.91 billion, increased 8.7%; Export of yarn reached USD 3.51 billion, increased 19.9%; Nonwovens exports reached USD 472 million,

increased 13.73%; Exports of textiles and garments were estimated at USD 1.1 billion, increased 17.3%. Total import value of garment and textile materials is estimated at USD 18.91 billion, increased 11.43% compared to 2016. (4).

In which the processing of traditional craft villages in the field of garment such as embroidery, paint spraying... has important contribute for the finished export products.

It can be seen that the traditional handicraft industry in Vietnam faces many opportunities and challenges if not changing comprehensively thinking, it will be lagged behind the trend as well as meet the requirements of the market.

The development of craft villages is especially important for economic development and transformation in the rural areas along the direction of industrialization and modernization at the same time maintaining and promoting the cultural identity of the nation. The People's Committee of Hanoi has directed the departments, branches and authorities at all levels to study, develop and promulgated a number of policies to prioritize the development of craft villages. In 2006 the city had 1.180 craft villages, in 2009 the city had 1.270 craft villages (an increase of 90 villages compared to 2006). *In 2012 there were 1.350 craft villages* (increasing 80 craft villages) (5), *with the goal of 2030 with 1500 craft villages* (accounting for 65.33% of the total number of villages outside of Hanoi), in which there are more than 3.000 craft villages (6). These figures show the important role of craft villages in the development of Hanoi and the country.

### ***3.2. Some solutions to develop traditional craft villages.***

*Support traditional craft villages to stabilize and expand the market.*

Market is a very important factor in the development of traditional craft villages. In practice, in recent years shows that craft villages, specifically, the thriving establishments is the place where they can solve the output for their products. According to surveys conducted in some traditional craft villages, more than 80% of surveyed enterprises said that it is difficult to market consuming products. The unstable market has created conditions for traders to press down prices, it makes the lower income for laborers. Support traditional craft villages to stabilize and expand the market is reflected on the following matters:

- Introduce products of traditional craft villages to the market through various forms and ways through mass media such as radio, social networks, newspapers, internet, etc. There is also need policies to encourage all organizations and individuals pay attention to the marketing work such as signing export contracts, offering... So we can introduce products of the traditional craft villages, then it has a stand in the domestic and international market.

*Help traditional craft villages improve their products to improve the competitiveness of products.*

- Providing market information for traditional craft villages, helping production establishments in craft villages to research and process market information related to

production and business such as product designs which are in demand which types do not have demand, which products are likely to be accepted by customers at which price that the product is acceptable.

- Creating conditions for craft villages to connect their production with other enterprises in urban centers and industrial centers, to encourage these enterprises to use products of traditional craft villages for semi-finished products or use traditional craft villages to do their work. This is an important direction combining different technological scales and taking advantage of the strength of economic sectors, at the same time, this is the direction to help traditional craft villages to develop sustainably. The traditional craft villages outsourcing for enterprises in the industry center will create favorable conditions for craft villages to take advantage of the jobs and skills of artisans there. At the same time, through outsourcing to large enterprises, the production technology and skills of traditional craft villages are significantly improved.

- *Traditional craft villages also need to have connects with other localities, especially raw material areas, so that they can take initiative in supplying raw materials for production.*

- Expanding the transaction network, in which rural markets promote the circulation of goods, promote the production of goods and stimulate the development of demand. Marketplaces provide the producers with the necessary materials to help them develop their production. *“Marketplace is a market as an institution that brings small farmers, craftsmen, small traders and professional traders from villages or urban areas together. It is an institution that organizes and coordinates social interactions, such as commercial business behaviors, of many people in different places in a common activity. It allows buyers and sellers to exchange information and give them the opportunity to complete the purpose of buying and selling goods and services.” (7).* Thus, the marketplace is one of the modes of business organization, including social groups involved in trading business and occur in certain areas. Village market is one of the typical features of economic, social and cultural villages in Vietnam.

In addition to the arrange of the market system, the state should coordinate with businesses and organizations to help bring goods into major trade centers such as supermarkets, shops system, commerca exhibition centers...

*About the capital market.*

Everyone knows that without capital, it is impossible to produce goods. Survey of some production households in the area, almost 100% of households are facing difficulties in the lack of capital for production. Therefore, in order to help traditional craft production establishments have sufficient capital for production and business and renovation of production equipment and technologies, we need to perform the following:

+ About the credit system: It is necessary to simplify procedures and have accessible support funds.

+ Types of services and business: It is necessary to diversify types of services and business in the capital market.

+ About loan procedures: In order to provide adequate and timely capital for business households in craft villages, procedures for borrowers in banks or credit should be simplified to make more convenient loans.

*Improve skills and management for laborers in traditional craft villages.*

- Raise the general level of culture for residents in traditional craft villages. Extending the training scales and diversifying forms of vocational training.

- Promulating policies of treatment for artisans in craft villages. This is the countries around us as India, Japan, China did and before in Vietnam we did. In addition, encourage the to train and introduce the technic secrets to the next generation.

For the establishment itself, should be active in the training of their own labors, through one of the following forms:

- There are private vocational training centers for those in need.

- The artisans, skilled workers train in the style of learning by doing. This mode is popular in traditional craft villages because it has the advantage of training skilled workers, making unique products but the disadvantage is poor theory.

- Through books, newspapers to be able to self-study technique or business.

The form of training is quite flexible, mainly that we have incentive policies for organizations or individuals have the ability to train.

Complete infrastructure

### **Complete the system of laws and policies of the State**

*Policies for traditional craft village development must be consistent and must be directed towards the intended goal. The synchronism here is not only reflected in the number of policies that ensure the coverage of the investment process, business production but also the coordination between planning and policy, in the encouragement with restrictions... aimed at encouraging traditional craft villages to develop. Among the policies, should be paid attention to the following policies:*

- The policy on the structure of the commodity line of business: To pay attention to the develop of industries and products with high socio-economic efficiency such as export goods, agro-forestry products and traditional products bearing national cultural identities. For traditional products bearing ethnic cultural identity that demand in the market is decreasing, the State should have support.

- Policy on capital guarantee: The State should have a policy to provide loans to the households in traditional craft villages with incentive interest rates and appropriate payment terms with traditional trades.

- Protection and insurance policy by industry, goods

- Tax policies: There should be some incentives for taxation on products that need to be maintained, for traditional craft villages, and also for products utilizing domestic materials that are likely to be exported.

- Policy on infrastructure construction

+ The construction of inter-communal roads, inter-village roads and electricity lines in communes should be carried out in the manner of the State and the people working together.

- Land policy:

There is a preferential land use tax for the operation of the production households in the traditional craft villages.

- Labor policy: Labor policy occupies a very important position as labor plays a decisive role in the production of traditional craft villages; on the other hand, labor issues are not yet available. The survey found that nearly 100% of the workers interviewed were unaware of insurance, labor law and what was relevant to workers' rights. Many artisans come to the South to set up a business because of low labor costs. Labor policy should go in the direction:

+ Increase the quantity and quality of labor for traditional craft villages and this is a trend suitable with the development of social labor division.

+ There should be regulations on the implementation of labor contracts and labor agreements between owners and workers.

+ Formulating social insurance and labor protection regimes.

+ Formulating the reward system, the title of "Golden Hand".

- Technology transfer policies, policies to encourage the formation of professional associations. Also through association, the facilities have the ability to help each other through technical services, management and supply of materials, create conditions and opportunities to cooperate with each other in production and consumption. By the exchange, mutual help cooperation such that possible to maximize the potential of units and economic sectors in traditional craft villages to create more and better products with higher quality, better meet the demand of the market not only in the country but also reach the foreign market.

*Complete the management structure for traditional craft villages*

***Creat conditons to the establishment and operation of professional associations.***

*Technological innovation, technique and product diversification of the craft village.*

Technological innovation, modernization of production techniques is one of the important solutions that affect the development of traditional craft villages. Thus, the new craft village has the conditions to increase labor productivity, the product is both modern and sophisticated, increasing the competitiveness of the product..

This is the interaction of industrialization and modernization to produce in traditional craft villages.

Currently, due to environmental protection requirements, coal fuels will need to be replaced gradually. Alternative energy is electricity or gas.

Environmental issues of craft villages also need special attention when the production process puts waste into fields, ponds and rivers that pollute water sources, pollute the air, damage agricultural land and lead to a negative impact on the health of the people living here. The treatment of wastewater from the production process to ensure the environment to avoid pollution and toxicity is an important issue to ensure the living environment for the residents of the craft village.

#### **4. Discussion and conclusion.**

From the study of economics and society of the craft village we find that traditional craft villages will contribute to creating jobs, assigning labor to attract surplus labor in rural areas. Especially with the current high population growth rate, solving the demand for jobs in traditional craft villages will effectively solve the employment situation of some sections of the population and raise the living standards. their lives. At the same time, the development of traditional craft villages will facilitate the shift of economic structure in agriculture, labor division more rational.

The development of traditional craft villages will greatly contribute to limiting free migration, improving the cultural and spiritual life of the people. The stable workers, ensure good life, they will not like to leave the village, relatives, the develop craft villages creates the stable employment, income to ensure life; it has good effects on the psychology, sentiment, customs, working style and create a cultural characteristic of the village.

As the village economy develops, it will create conditions for increasing non-farm income, facilitating the shift of agricultural economy to handicraft and narrowing the gap between rural and urban areas. Due to the low productivity of agricultural labor, the income from agriculture is not high, the development of traditional craft villages facilitates the income of the inhabitants, some households have boldly abandoned their agriculture, focusing only on traditional industries. This has led to a shift in the agricultural structure from agro-based to agro-handicraft economy has developed in Vietnam today... In developing and planning a national socio-economic development strategy, mastering and deep understanding of the socio-economic characteristics of a typical craft village will contribute to creating the basic premise for the effective implementation of economic and social policies.

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# LOCAL BRANDS OF PHUTHO PROVINCE FROM THE PERSPECTIVE OF DOMESTIC INVESTORS

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## **Abstract**

*The research was conducted to analyze the local brands of Phu Tho province from the perspective of domestic investors. Through the research framework of local brands equity's six elements and data collected from the survey of 425 domestic investors in Phu Tho province. The results show that local brands of Phu Tho province are highly valued by domestic investors. However, there are still aspects that have not been appreciated and that need to be addressed. Based on the results of the study, the researchers proposed to increase the value of local brands, helping to retain existing investors and attracting potential investors to Phu Tho province.*

**Key words:** local brands, investors, domestic investors, Phu Tho province.

## **1. Introduction**

Today, local brands have become an indispensable part of the global competition for attracting investment for local economic development. Local brands bring many benefits, not only to local and local public, but to all stakeholders such as investors, residents and tourists. Therefore, local governments and organizations need to be aware of the importance of building local brands, exploiting their strengths, and having appropriate development strategies to enhance their local position in the eyes of the target customers.

At present, in the structure of Vietnam's investment capital, domestic capital plays a decisive role. As a mountainous midland province in the north, Phu Tho has a great potential for economic development. In the period from 2012 to 2016, domestic capital accounts for a high proportion (95.13%), foreign investment accounts for a relatively low proportion of total provincial investment (8.87%). This structure represents the advantage of domestic investment.

In recent years, investment capital in general and domestic investment capital in particular in Phu Tho province has been contributing to the socio-economic development of the locality, actively participating in economic restructuring, improving the living standards of the population. However, investment capital in the province in the past years is below the potential and strength of the province. Phu Tho province is in the period of industrialization - modernization, the demand for capital for socio-economic development is very large.

The plan to attract the total investment capital of the whole society in the 2016-2020 period is over 95 trillion VND. In order to reach the target by 2020, Phu Tho is basically an industrial province, the attraction of domestic investment capital is a matter of survival. Therefore, the research on the local brands of the province from the perspective of domestic investors, from which solutions to increase the value of local brands, contributes to retain the current investors and to attract potential investors for Phu Tho province is really necessary.

## **2. Method**

The study used three main methods, including:

(1) Data collection method: Use the research method at the desk to collect secondary data. Use qualitative research method with in-depth interviewing techniques and quantitative research methods with survey techniques through questionnaires to collect primary data.

The respondents are domestic investors, who are investing in Phu Tho province. Sample size is 425 with the form of direct vote. The research uses a non-probability sampling method with a convenient sampling form to proactively select the most accessible and well-informed survey respondents.

In the research, the survey was inherited and developed from Jacobsen's local brands equity scale (2012). Using the Likert scale to collect domestic investors' perceptions of local brands equity in Phu Tho province. Level 5 is strongly agreed, level 4 is agreed, level 3 is neutral, level 2 is not agree and level 1 is very disagreeable.

(2) Data processing method: Data collected, encoded, entered into Excel software and calculated necessary indicators such as percentage below the level of agreement, % neutral, % from the level of agreement and above and the mean.

(3) Data analysis method: The study used a descriptive and comparative statistical method to analyze the necessary indicators to clarify the local brands of Phu Tho province from perception and evaluation of domestic investors.

### 3. Results

Domestic investors' evaluations on the local brands of Phu Tho province about each element of local brand equity show more clearly about the current local brands of the province.

**Table 1. Domestic investors' evaluation on the local brands of Phu Tho province**

Observed variables	% below the level of agreement	% neutral	% from the level of agreement and above	Mean
<b>Local brands' personality</b>				
Appropriate investment location	0	6,12	93,88	4,29
Attractive investment location	0,24	7,53	92,23	4,29
Investment location is really good	0,24	12,47	87,29	4,14
<b>Get to know the local brand</b>				
The first potential investment location to be thought of	1,65	26,82	71,53	3,85
Popular places	16,24	34,82	48,94	3,47
Always interested in investors	1,18	15,29	83,53	4,03
<b>Feeling's Quality</b>				
The service quality is stable	0,24	11,53	88,23	4,29
Have good experience in public administration's services	6,82	44,47	48,71	3,42
The service satisfies the demand	4,24	28,00	67,76	3,68
The services provided are guaranteed	0,47	22,82	76,71	3,86
Local authorities have professional working methods	4,47	25,88	69,65	3,76
<b>Impression of local brands</b>				
Favorable geographical location	0	9,18	90,82	4,26
Enough resources to support the investment and business	0,94	12,71	86,35	4,14
Good infrastructure	0,24	12,71	87,05	4,17
<b>Belief in local brands</b>				
Provide public service as committed	1,65	43,76	54,59	3,56
Commitment to government service is reliable	0,71	42,35	56,94	3,62
Communication with businesses is always open and honest	0,71	35,06	64,23	3,76
Have faith in local activities	0,71	8,94	90,35	4,37

<b>Observed variables</b>	<b>% below the level of agreement</b>	<b>% neutral</b>	<b>% from the level of agreement and above</b>	<b>Mean</b>
<b>Local brands' image</b>				
Have positive feeling and evaluation when referring to Phu Tho	0,47	10,59	88,94	4,27
Phu Tho is a symbol of positive values	0,71	26,59	72,70	3,92
The investment in Phu Tho is associated with the convenience	0	20,47	79,53	4,02
Safe and stable investment environment	0	13,88	86,12	4,33
Local people are friendly and respect the community	0	7,30	92,70	4,5

**\* Local brands' personality**

According to statistics from the observation variables measure the local brand personality of Phu Tho province, observation variables were rated with a high score of 4.14 to 4.29 on average. Of these, 93.88% of businesses rated at the agreed level (level 4) and strongly agreed level (level 5) suggesting that Phu Tho was a suitable investment location for their businesses. In addition, Phu Tho was highly appreciated by investors about the level of attractiveness for enterprises' business activities (92.23% agreed and strongly agreed). 87.29% of surveyed enterprises agree that Phu Tho is a good investment destination. As such, the province needs to strengthen the attractiveness factors to become a really good investment destination in order to attract more investors.

Phu Tho is the gateway of the northwestern and midland markets with more than 20% of the population of the country. Phu Tho is a densely populated province (by 2017 the province's average population is 1,392,000), of which, 759.8 thousand people labors aged 15 and over working in the economic sectors, the percentage of trained labors is 60.5%, of which 26.7% of trained labors are working in the economic sectors (Phu Tho province's Statistical Office, 2017). This is both a potential market and a factor to create favorable conditions for investors to invest in Phu Tho province. Moreover, Phu Tho province's geographical location creates favorable conditions and great potential for production and trade with other regions in the country and internationally.

**\* Get to know the local brand**

Data related to local brand awareness showed that the mean value of observed variables was lowest at 3.47 and highest at 4.03. In particular, Phu Tho was not highly appreciated in the observation variable that Phu Tho is well-known in investment and business activities (average score was 3.47 and 16.24% was below the agreed level; 34.82% neutral), the reason is that in Phu Tho province, there are not strong investors in capital and technology, strong and influential brands in key areas of the province; moreover, local promotion activities have not been implemented regularly, synchronously and not effectively to attract investors in these areas. However, Phu Tho was highly

appreciated by investors (83.53% agreed and strongly agreed), 71.53% said that Phu Tho is the first potential investment place they think of.

The result of this evaluation is that over the years, the provincial leaders are very interested in the business community and investors in the province. Accordingly, the province has focused on promoting business support, thoroughly grasp all departments and sectors should implement well solutions to improve the business environment, support the development of enterprises in the spirit of Resolution No. 19 -2016/NQ-CP dated 28 April 2016 and Resolution No. 35/NQ-CP dated 16 May 2016 of the Government to Phu Tho becomes a new destination of domestic and foreign investors. Apart from preferential policies of the state, the province also introduced many appropriate mechanisms and policies to support the development of enterprises through the issuance of documents relating to investment incentives for enterprises investing in the province, specifically: Decision No. 04/2012/QD-UBND on investment support for investment projects in Phu Tho province, which stipulates investment support for investment projects in the province such as land policy, infrastructure policy and cost of ground leveling, providing services related to electricity and water to the fence of industrial zones and clusters, creating favorable conditions for enterprises to promote trade...; Decision No. 25/2012/QD-UBND regulating support for small and medium industrial enterprises to invest in modernizing and modernizing technology in priority areas of development in Phu Tho province; Resolution No.15/2014/NQ-HDND stipulates special support policies to encourage enterprises to invest in agriculture a rural areas in Phu Tho province in the period 2015-2020. At the same time, the province directs the branches and local administrations at all levels to advise on measures to remove difficulties and obstacles in site clearance, shorten the time for settlement of investment procedures, early table hand over clean premises for business; to create all conditions on electricity, water and infrastructure for production; encourage businesses to invest in expansion of production and business in line with the provincial master plan. In addition, the province also supports enterprises seek investment location; to support and create conditions for enterprises to promote investment and trade promotion.

#### **\* Feeling's Quality**

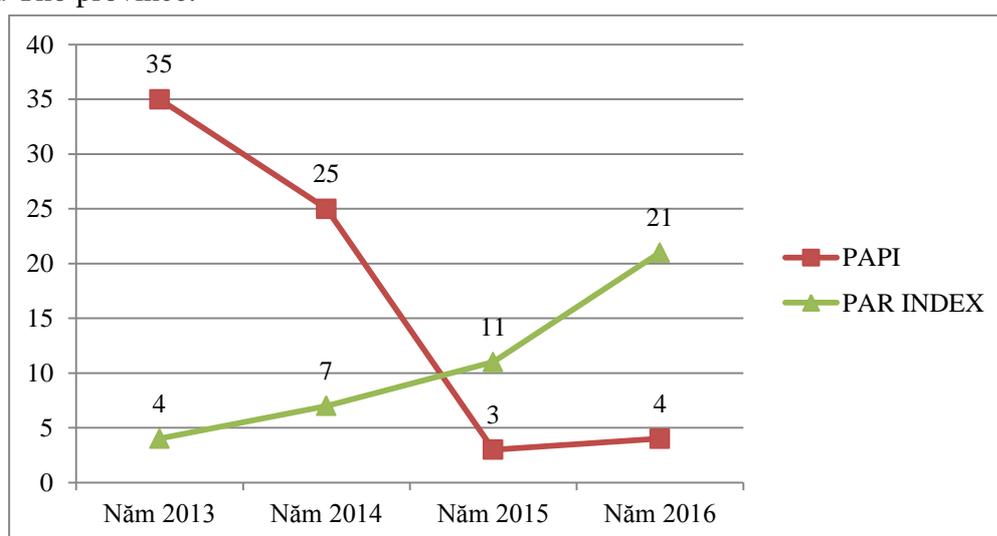
The evaluation data on feeling's quality of investors in the local brands of Phu Tho's province is above average. In particular, the experience of public administrative services of enterprises has not been highly appreciated, although the average score is 3.42 > 3 points (higher than the agreed rate) but the rate below the agreed level is 6, 82% and the rate from the minimum level of consent is lowest among all observed variables (48.71%). In contrast, investors highly appreciated the stability of service quality, the average score is 4.29 and 88.23% of enterprises rated this criterion at the agreed level or higher. Although the service quality is quite stable, it still does not meet the demand of enterprises. At the same time, there are still 4.47% of enterprises assess the local government lacking in the professional working methods.

Over the past years, the Party and authorities of Phu Tho province have had many solutions in the reform of administrative procedures, the province has issued many legal documents to create the legal basis and the necessary conditions for the implementation of

reforming administrative procedures. Specifically, some documents such as: Scheme No. 4635 / DA-UBND dated 16/12/2011 on orientation to raise the provincial competitiveness index of Phu Tho province in 2011-2015 period; Decision No. 14/2014/QĐ-UBND dated November 10, 2014 promulgating the regulation on implementation of the one-stop-shop mechanism in solving some administrative procedures for investment projects in the province; Plan No. 1199/KH-UBND dated April 9, 2012, Plan No. 803/KH-UBND dated 18/03/2013 and plan No. 5592/KH-UBND dated 26/12/2014 of the Provincial People's Committee on implementing the state administrative reform of Phu Tho province in 2015, Plan no. 5491/KH-UBND dated 31/12/2015 of the Provincial People's Committee on state administrative reform of Phu Tho province in 2016-2020 period. Accordingly, the departments and sectors, the People's Committee of districts and urban areas have used the one-stop electronic gateway intergrated with online public service portal of Phu Tho province from October, 20, 2016. Administrative procedures are applied the electronic one-stop software in receiving and solving procedures at level 2.

Although the province has paid much attention to the reform of administrative procedures, the implementation of administrative procedures under the one-stop-shop mechanism has been deployed. However, there is no consistent among and sectors, coordination between levels and sectors is not synchronous. At the same time, the service's quality at the one-door department of the departments is not really open to meet the needs of investors. In addition, the reform of administrative procedures is the common direction of all localities throughout the country, in the trend of reform, Phu Tho province has not kept up with many other localities. Therefore, this field is not the strength of the province in the eyes of investors.

The results are also consistent with provincial indicators such as the performance and provincial public administration indicators, Public Administration reform (PAR) index of Phu Tho province.



**Chart 1. Evaluation's results on PAPI, PAR INDEX of Phu Tho province in the period of 2013 - 2016**

*(Source: CECODS, 2013 - 2016; Interior Ministry, 2013 - 2016)*

In the period of 2013 - 2016, the local authorities in Phu Tho province have made great determination and efforts to improve the quality of public administrative service delivery and enhance the provincial competitiveness. As a result, the effectiveness of state management and policy's implementation and public service's delivery of the authorities at all levels of Phu Tho province is also highly appreciated by the people (shown by the ranking results PAPI increased from 35<sup>th</sup> in 2013 to 4<sup>th</sup> in 2016). However, the assessment's results of people and enterprises on administration reform's activities of Phu Tho province continuously decreased, from the 4<sup>th</sup> in 2013 to 21<sup>st</sup> in 2016. Although provincial indicators related to public administration services and local government of Phu Tho province are highly appreciated, however, these results have not kept up with other provinces and cities in the country.

The assessment on the professionalism of local government is related to the index in dynamism and pioneering of provincial leaders.

**Table 2. Composition indicators of the dynamism index of the Phu Tho provincial government in the period of 2013 – 2016**

<b>Indicators</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>Mean</b>
Provincial People's Committee is flexible in the legal framework to create a favorable business environment for private enterprises.	39,66	60	73,63	68,75	60,51
Provincial People's Committee is very active and creative in addressing emerging issues.	33,04	49	54,65	50,68	46,84
Perceptions of the business on the attitude of the provincial government towards the private sector.	33,59	37	40,38	39,56	37,63
There are good initiatives at provincial level but not well implemented in departments and sectors.	55,86	84	83,91	78,95	75,68
Provincial leaders have policies and policies that are not properly implemented at the district level.	27,83	56	70,73	60,27	53,71
The reaction of the province to the unknown in the central policy/document: "delay implementation and seek guidance" and "do nothing".	58,16	45	25,45	31,37	39,99
<b>Index of dynamism and pioneering of provincial leaders</b>	<b>3,93</b>	<b>3,9</b>	<b>4,63</b>	<b>4,65</b>	<b>4,28</b>

*(Source: VCCI Vietnam, 2013 - 2016)*

In recent years, the leaders of Phu Tho province have been interested in organizing dialogue meetings with the business community at home and abroad. But the number of enterprises increased over time as well as difficulties and problems have arisen so many such contacts have not satisfied the needs of enterprises. Mechanisms and policies promulgated by province are proposed by the specialized management agencies based on the guiding and guiding framework of the central government. So if there is no flexibility and professionalism in the administration and handling, it will cause difficulties for the business.

Although the province has promoted the development of the private sector in the past time, the recognition of a part of civil servants on the role of the private sector is not objective, It is not commensurate with the role of this sector in development. The results show that in the period of 2013 - 2016, the assessment on the attitude of the provincial government to the private sector is only 37.63% of businesses think positively. Although there are 60.51% of businesses agree that "Provincial People's Committee is very flexible in the legal framework to create a favorable business environment for private enterprises" but 75.68% agreed with the statement "There are good initiatives at the provincial level but not well implemented in the departments and sectors" and 53.71% agree with the statement "Provincial leaders have policies and policies that are not properly implemented at the district level". This comes from the quality of civil servants and leaders in the departments and sectors of the province for the implementing tasks related to enterprises is weak; the skills of some civil servants are limited; they don't know the legal regulations that lead to guiding, handling and advising the leaders to remove difficulties and obstacles for enterprises still have many limitations and cause difficulties for them. In the coming time, the provincial government should pay special attention to this human resource.

#### **\* Impression of local brands**

Investors' evaluation statistics also show that the geographic location of Phu Tho province is highly appreciated by investors, 90.82% of surveyed enterprises agreed and strongly agreed on Phu Tho with the favorable geographic location. At the same time, the infrastructure and natural resources supporting the province's investment and business activities were also highly appreciated by the investors with the average score of 4,17 and 4,14.

This can be explained by an analysis on the characteristics of: geographic location, natural resources and infrastructure of the province.

Located at the confluence of the rivers, the northwestern gate of Hanoi capital, and on the economic corridor of Kunming - Hanoi - Hai Phong, Phu Tho has important roadways such as Hanoi - Viet Tri - Lao Cai Highway; Ho Chi Minh Road, Routes 32A, 32C and Route 70; Hanoi - Lao Cai railway; waterway in the Red river connects with delta provinces, Northeastern and Northwest provinces... This is an ideal location for investors.

In addition, Phu Tho has abundant natural resources, with large land area, suitable for planting material trees for processing industries. The province has great potential for trees of paper material, materials for agro-forestry products and some high-value mineral resources such as kaolin, limestone, mineral water... to develop the mining and mineral processing industries, cement, building materials, paper, ceramics... The province also has rich tourist resources, with many historical, cultural and artistic monuments classified as historic relics Hung Temple, Ao Chau pond... and the special cultural values of the ancestors. Many folk and singing "xuan create the unique features for Phu Tho, which is the potential for attracting investment and developing the province's tourism.

In term of infrastructure, over the years, the province has paid special attention to the construction and development of infrastructure. Accordingly, province's infrastructure

has made breakthrough developments, especially the system of foreign traffic. At present, there are 7 industrial zones and nearly 26 industrial clusters in the province. Industrial parks are connected with up and down buttons the Hanoi-Lao Cai Highway and the Ho Chi Minh Road. In that, basically completed the infrastructure of Thuy Van industrial zone and some industrial clusters. The infrastructures of urban areas, agriculture, rural areas and information communication have been strengthened. The buildings belonging to the historical relics of Hung Temple, Hung Vuong Square, Van Lang Park are in the stage of completion. In addition, the province is actively improving and raising the criteria on urban type 1 of Viet Tri city; to build Phu Tho town into a city. These infrastructures have contributed significantly to attracting investors to the province.

#### **\* Belief in local brands**

Evaluation data on local brand beliefs of investors for Phu Tho province shows that 1.65% of businesses think that Phu Tho does not “provide public services such as commitments”. The average value of the observation variable of “the local communication with the business is always open and honest” to 3.76 points; of which, 0.71% was below the agreed level, 35.06% neutral and 64.23% from the agreed level upwards. The result is that over time, local authorities often hold dialogues, process and remove difficulties for businesses, thereby create confidence for businesses (90.35% of enterprises believe in local activities).

Determining trust is an important factor in retaining old customers and attracting new customers. Over the past years, local authorities in Phu Tho have made efforts to create trust for investors by transparency, friendliness, honest and creativeness. Dialogue activities with businesses was also concerned by the province with a fierce takeover from the province to the province’s localities. Provincial leaders and departments, branches and localities were involved in dialogue activities, thereby promptly removed difficulties and properly handling many opinions and proposals of the business community. At the same time, the province has implemented the hot line at all agencies and units in the province to receive comments, reflects and recommendations of organizations, individuals and enterprises on the services’ moral and attitudes of civil servants and officials in the process of solving administrative procedures. The provincial leaders have renewed their thinking, renewed the leadership style, directed and organized the work in the spirit of deep and effective. However, dialogue with businesses has not been done regularly. It is still difficult for enterprises actively contact with provincial leaders, from there, can’t solve the shortcomings in terms of mechanisms and policies which cause difficulties to enterprises when carrying out projects in the province. This negatively affects the local image, especially the local government in the eyes of investors, causing loss of confidence for current investors in the investment process and new investors when learning about the investment environment of the province. In addition, the provincial leaders have not yet created a forum, a reliable and effective information channel for investors and enterprises to reflect their difficulties, obstacles and aspirations when investing in the province.

Together with dialogue activities, the province also organizes investment promotion conferences to promote potentials, advantages, incentives and mechanisms, and create forums for organizations, domestic and foreign investors to meet, dialogue, exchange experiences, establish cooperative relationship for socio-economic development. The provincial government has also made a commitment to investors. With the motto of respecting partners, Phu Tho province always welcomes domestic and foreign investors, commits to a transparent investment environment, always encourages and creates favorable conditions in terms of mechanism, policies and procedures for investors to seek opportunities and cooperation in the province. At the same time, local authorities are also committed to accompanying investors, and will welcome investors as welcoming relatives, see their success as their own success. Though it, the message conveyed: Investing in Phu Tho is the right choice, looking forward to the future and having the foundation to ensure success. Accordingly, the province has actively supported and assisted enterprises to enjoy the preferential mechanisms and policies of the State and the province. This will be a premise for businesses to invest, to expand their production and to stabilize their development, create high production value, create jobs and income for employees, contribute many budgets for the state and participate in social charity activities, contribute to the development of the province.

**\* Local brands' image**

Statistics related to Phu Tho's local brand image show that Phu Tho's brand image is highly appreciated by investors. Evaluation on the brand image of the province, the image of the local people is evaluated with the highest average score of 4.5 points with 92.70% from the level of agreement upward; followed by a safe and stable investment environment with average mean at 4.33 points, 86.12% agreed and strongly agreed. 88,94% of businesses feel positively when referring to Phu Tho and 72,70% of businesses think “Phu Tho is a symbol of positive values”.

The above results are also consistent with the result of Phu Tho Provincial Competitiveness Index. Determining PCI enhancement is one of the solutions needed to attract investment, creating a premise for a high-growth and sustainable economy. Over the past years, Phu Tho province has made great efforts in building an open and transparent investment environment, helping businesses to secure investment, production and business. The province has maintained its political stability, social order and safety, ensuring national defense and security, building a strong political system, active prevention of natural disasters, strengthening management of natural resources and protecting the environment so that investors can rest assured their production and business activities in the province. All levels and all sectors of the government have focused on reforming administrative procedures, efforts to develop a system of solutions and mechanisms to encourage the development of economic sectors, in which interest and facilitate the development of the private sector. As a result, the business environment of the province has improved markedly.

**Table 3. Results of PCI ranking in Phu Tho province for the period of 2013 - 2017**

Indicators	2013	2014	2015	2016	2017
PCI	53,91	57,72	58,37	58,6	62,55
Rating	54	39	35	29	27
Rating group	Relatively low	Good	Good	Good	Good

(Source: VCCI Vietnam, 2013 - 2016)

In 2013, PCI of Phu Tho is ranked low in the PCI rankings and is in the relatively low ranking group. From 2014 to 2017, Phu Tho has improved its scores and position on the chart, from 54<sup>th</sup> (in 2013) to 27<sup>th</sup> (2017), and continuously for three consecutive years in good ranking group. It can be seen that PCI of Phu Tho Province is improving and promising future growth. The results of the provincial PCI have shown that the investment and business environment of the province is increasingly appreciated by investors. However, this result has not kept up with other provinces. Therefore, in the coming time, the province needs to have more synchronous and drastic solutions to improve the investment and business environment, thereby building a more active local image and increasing the brand image's value of the province in the eyes of investors.

Thus, the evaluation of investors showed that the local brand of Phu Tho province is basically at a relatively high level, in which local people, investment environment, geographic location, natural resources, infrastructure, locality's potential and investor interest are appreciated with average value at above 4 points. However, public services, professional working methods, government commitment, popularity for investment and business, communication between government and businesses have not yet reached a high agreement. These are the local brand's factors affecting the decision to choose investment location in Phu Tho province of domestic investors.

In the survey of the study, the researchers used a 5-level likert scale, with the following levels: 1 - strongly disagree; 2 - Disagree; 3 - Neutral; 4 - Agree; 5 - strongly agree. Thus, scores from 3.5 (between levels 3 and 4) are the result of positive reviews and the observed variables score from 3.5 or above which means that domestic investors have rated positive trend and acceptable level. However, with the objective of research to increase local brand equity to retain and attract domestic investors in general and FDI investors in particular, thus, in order to achieve the goal with high efficiency, the study will concede observable variables with a rating of 4 or higher (agreed level) that are positive and acceptable. In order to increase brand equity, it is necessary to improve the score of the low-score observation variables, so that the study will focus on scales with a lower score of 4 for causal analysis and suggested solutions to improve those indicators and increase local brand equity for Phu Tho province.

**Table 4. The aspects that need to be improved in Phu Tho province**

<b>Biến quan sát</b>	<b>Average mean</b>
Phu Tho is a symbol of positive values	3,92
The services provided are guaranteed	3,86
The first potential investment location to be thought of	3,85
Local authorities have professional working methods	3,76
Communication with businesses is always open and honest	3,76
The service satisfies the demand	3,68
Commitment to government service is reliable	3,62
Provide public service as committed	3,56
Popular places	3,47
Have good experience in public administration's services	3,42

In aspects with an lower average score of 4, there are two aspects with scores below 3.5, including the experience in public administration's service with the lowest evaluation (3.42 points) and Phu Tho is popular place (3.47 points). These are two aspects that the province needs to pay special attention in the coming time. At the same time, public services provided to investors are not really as committed (3.56 points), as a result, the investors are not confident in government service's commitments (3, 62 points) and service assessment has not really met the demand.

According to the observation variables with the average value below 4 points, it can be summarized into 3 main issues that Phu Tho province has not appreciated, namely: (1) The symbol and the popularity of the province; (2) Local government; (3) Public administrative services.

In the coming time, to increase the local brand equity, Phu Tho should have the solutions to improve the reputation of the province; enhancing the role of local government, especially the innovation of working methods in the direction of professionalism, efficiency and many communication activities of government with enterprises; and improve the quality of public administrative services.

#### **4. Discussion and Conclusions**

Based on the results of analysis on the local brand of Phu Tho province from perception of domestic investors, the local brand of the province is highly evaluated by local investors, however, there are still some limitations should be improved. From there, the study proposes some recommendations to promote and increase the local brand equity of the province in order to retain and attract domestic investors to choose Phu Tho province as a destination for investment and business.

##### **\* Promoting local brands**

Continue the investment promotion conference. This is an important event to promote, introduce the potential, strengths and attractive advantages of Phu Tho; mechanisms and policies calling for investment of the province; Introduce information

about the fields, projects that province priority calling for investment, production, business. In the coming time, in order to promote higher investment efficiency, the province needs a breakthrough in holding investment promotion conferences. Accordingly, the province needs to establish relationships with reputable domestic and foreign investors investing in the province to visit other countries and localities to hold investment promotion conferences in order to increase accessibility and introduce the Phu Tho province to potential investors, from there to attract more investors into the province.

Attracting investors with strong brands and linking, cooperating with other localities. Currently, Phu Tho province does not have a real investor with strong brands to attract more investors into the province. Therefore, Phu Tho province should have mechanism and preferential policies to attract large-scale investors and strong brands to the province, exploiting this factor will help the province promote the local brand, the result is high efficiency in attracting investment. Phu Tho is a locality in the capital city planning, which has many potentialities that can't be exploited locally and alone, therefore, it is necessary to have cooperation from other localities, especially to call on businesses and investors from other localities to increase investment in Phu Tho province. This will help Phu Tho promote, introduce potential and call on other local investors to invest in developing dominant and key sectors of Phu Tho province. Thereby, contributing to exploiting the potential and strengths of the province and serving the objectives of socio-economic development of the two localities.

Use a combination of promotional strategies. Due to the characteristics of local products are only in that locality, little or no movement, therefore, in order to promote the local brand, it is necessary to combine local's image promotion, promotion of local attractions, promotion of local infrastructure and local people. (i) For local image promotion: The province's image is designed to focus on the following three elements: Emphasize opportunities that the province will provide to investors when they come to invest in the province; Reflect the determination of the province to improve the investment environment; Highlighting the differences of the province compared to other places. (ii) For the promotion of local attractions: The province needs to select attractive places to attract investors, such as Hung Temple Historical Relics, Ao Chau Pond, Thanh Thuy Hot Mineral Water Resort, Xuan Son National Park... (iii) For local infrastructure promotion: The province needs to provide the information on infrastructure for investors, in which the province has established the system of essential transport infrastructure; industrial parks and clusters; cultural and social works. Tourism infrastructure and infrastructure for agriculture, forestry and fisheries have also been strengthened and invested; initially put into operation the component projects in the key tourist areas. Implement projects on renovation and upgrading the power transmission system, ensuring stable supply of electricity for production and business. The quality of information communication is improved. This will be important premises and one of the factors influencing the choice of location for investors by the infrastructure will contribute to promote the image and attraction of province. (iv) For the promotion of local people: Promoting people can be through celebrities; good local leaders; talented people, people with the spirit of starting a business, and people who have moved to locality.

Choice of effective media. Strong brand is a brand that brings trust to customers and communicates brand value to customers in the most effective way. To promote the local brand, Phu Tho province needs to use the media to convey value and brand attributes strikingly to the investors through a variety of tools such as: (i) mass media, communications such as books, magazines, television, the internet; ii) Participation in investment exhibitions and seminars; (iii) Sponsorship programs, community relations or events; (iv) Send survey delegations to source of investment.

**\* Improve the role of local government**

The government is both an orientation force and an important factor in attracting investment capital to serve the socio-economic development of the locality. In order to enhance the role of local authorities in attracting investment into the province, should paid attention to the following issues:

The province should respect and promote the role of Party committees and authorities in attaching importance to the responsibility of the head. Continue implementing the Plan No. 4191/KH-UBND on implementation of Directive No. 13/CT-TTg dated June 10, 2015 of the Prime Minister on strengthening the responsibility of the head of the agency State level in the reform of administrative procedures (People's Committee of Phu Tho province, 2015). To well implement the plan No. 1118/KH-UBND dated March 29, 2016 of the Chairman of the provincial People's Committee on anti-corruption work and the contents of Directive No. 16/CT-UBND dated September 16, 2016 of Provincial People's Committee on strengthening in the State administrative agencies.

Local government needs to be flexible and creative in the process of performing public duties. Based on the policies and laws of the central government and the specific conditions and situations of Phu Tho province, the provincial authorities should promote the development of a legal document system that meets the requirements of the market economy, avoid overlapping, conflicting, lack of stability and low efficiency. However, the creative regulations of the provincial government on the basis of the central law should ensure the uniformity and smoothness of the management apparatus and the strictness of the legal system in general.

In order to improve the quality and effectiveness of the legal documents issued by the provincial authorities, the province should actively consult with relevant stakeholders. For the planning documents, in the drafting process, the province needs to expand the number of participants in the draft documents before promulgation. In addition to the relevant stakeholders in the province, it is necessary to publicize the information and suggest the provinces with similar conditions, the neighboring provinces to participate and contribute ideas to improve the effectiveness of cooperation activities in the exploitation of resources in the region, each locality.

**\* Improve the quality of public administrative services**

Improve the quality of the contingent of civil servants and officials in terms of qualifications, professional skills, working capacity and professional ethics: Among them, to raise the sense of responsibility and work attitude to serve the people of the contingent of officials, civil servants and employees, especially the staff working directly at the one -

door department. Strengthen the training and fostering of professional knowledge and skills, and communication skills as well as administrative behaviors to improve their capacity as well as to help them understand the work, master and professional in the process of performing task.

Promote the reforming administrative procedures, focusing on four main areas: 1 - Implement administrative reform in the direction of one door to "one mark"; 2- Electronic transactions; 3 - E-government; 4 - Applying quality management system conforming to national standard (TCVN ISO). At the same time, proceeding to build a provincial administrative service center. Accordingly, the functions and duties of the center will be the place to guide, receive and return results of solving administrative procedures for organizations and individuals according to the list of administrative procedures approved by the chairman of the provincial People's Committee. At the same time, people and businesses only need to contact, submit files and receive the results at a single center, instead of filing and returning the results at the departments and sectors in the province. Process of administrative procedures in accordance with ISO 9001 standards to improve the quality of public administrative service delivery. At the same time, the center will also digitize administrative records, build enterprise databases; files and administrative procedures digitized in the network environment. This will be the basis for e-government in the future.

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# REGIONAL TOURISM LINKAGE: EXPERIENCE FROM THAILAND, MALAYSIA AND LESSONS FOR THE NORTHWEST REGION OF VIETNAM

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## Abstract

*Regional linkage in tourism development are an important requirement in the development of tourism of each country. This study explores the regional linkage experience in tourism development in Thailand and Malaysia, which has implications for regional linkage development in the Northwest of Vietnam. Research indicates the importance of regional linkage in tourism development and government policy plays an important role in promoting regional linkage. This policy should be concretized as a regional tourism linkage strategy and management units. Creating an environment that promotes initiatives for tourism linkage development in the region is an important condition to concretize regional integration directions into results.*

**Key words:** tourism linkage development, Northwest tourism, tourism linkage model

## 1. Introduction

Tourism has been developing in the last 50 years, especially in recent years, it is becoming an important economic sector, not only the largest scale in the industry but also contributed to the development and prosperity for the whole world. By 2015, the number of international visitors reached approximately 1.2 billion, generating \$1.260 billion in revenue (UNWTO, 2016). Tourism has become the largest economic sector in the world.

The development of tourism of one region among the linkage between many localities in the region has been concerned in the development of tourism. This not only satisfies the needs of tourists but also creates a basis for stimulating the development of tourism in the region, creating new competitive advantages of tourism in the region in terms of attracting investment, product development, brand building and promotion.

The regional concept in tourism development refers to a territorial space within a country, often associated with geographic features rather than to administrative features. The prevalence of regions is an area that includes certain provinces (or equivalent administrative units). The territorial distribution spread across various administrative units leading to difficulties in developing tourism linkage.

The objective of this article is to explore the experiences of tourism linkages in some countries around the world to draw lessons for Vietnam. This study focuses on two

countries with strong tourism development in the ASEAN region of Thailand and Malaysia. Countries that have regional tourism development models are quite striking and have many similarities with Vietnam in terms of location, terrain conditions. Many of the tourism areas in these countries are also mountainous areas, which are similar in characteristics to the Northwest of Vietnam, which provides some recommendations for strengthening linkages of the tourism in the Northwest areas at the end of this article.

## **2. Regional tourism linkage in Thailand**

### ***2.1. Introduction on Thailand tourism***

Thailand is a tourism spot not only in Southeast Asia but around the world. In 2016, the number of tourists visiting Thailand has surpassed 30 million, which is one of the largest number in the world.

Thailand has a well-developed tourism industry since the 1970s. The number of international tourists to Thailand reached 10 million in the early 2000s. Looking at tourism development as well as volume of international tourists, Thailand has about 15-20 years experience developing earlier than Vietnam.

According to the WTTC (2016), tourism contributes directly to Thailand's GDP of 1,247.3 trillion baht, or about 9.3 percent of the country's GDP. In terms of the total of direct, indirect and tourism-induced contributions of tourism to GDP, it is equal to 2,795.1 trillion baht in 2015, which accounted for 20.8% of GDP. Thailand ranks sixth in the world on tourism income (UNWTO, 2016). According to WTTC forecasts, with a growth rate of 6.4% per annum, in the next 10 years, tourism will bring total revenue of 5,420.5 trillion baht, accounting for 30.5% of Thailand's GDP.

### ***2.2. Experience in tourism linkage development in Thailand: product - investment - policy***

Economic development in the region has been focused in Thailand for more than 20 years, bringing concrete results in development, evident in the development of tourism. Tourism development in Thailand shows the connection of tourism linkage with economic development. Beside policies that promote regional development, specific policies for the development of tourism have a significant impact on the formation of product lines, brands and tourism systems in each region.

In the tourism development strategy of Thailand, the tourism business is oriented into five regions: North, North East, Central, Eastern, Southern. Tourism zoning is primarily determined by geographic features and socio-economic characteristics. This partly determines the product characteristics of each region. Some experiences in tourism linkage development in Thailand will be mentioned below.

#### ***2.2.1. Developing regional tourism products with local characteristics as a basis for tourism development linkage***

The Northern of Thailand is an area in Thailand that has many similarities with the Northwest of Vietnam. As a mountainous area, Northern of Thailand has more difficult

economic conditions than other provinces in the country. This area also contains many cultural values of Thailand, typical of the culture is the former kingdoms and cultures of ethnic groups. The area of these 16 provinces is of interest to develop tourism after Thailand's major tourist centres. Localities in the area have their own tourism characteristics, as shown in Table 1 below.

**Table 1: Specification of attractions in northern Thailand**

<b>STT</b>	<b>Attractions (Province)</b>	<b>Specifications(*)</b>
1	Chiang Mai	As the "Northern Rose," Chiang Mai is a wonderland of culture and nature with its ethnic diversity, with countless tourist attractions and hospitality.
2	Kamphaeng	As a strategically important city in the past, Kamphaeng is now a peaceful and captivating province with many interesting natural and cultural attractions.
3	Lamphun	An old city with hospitable people, with beautiful women. Lamphun retains the charm of the ancient and attract tourists by its natural beauty
4	Nakhon Sawan	Nakhon Sawan is not well known to tourists, but it has a wide variety of tourist destinations, from space observatories to large lakes as well as many natural attractions including floodplains, the largest waterfall in Thailand, where many species of fish and birds are kept
5	Phayao	Seemingly admirable by mountains and valleys, Phayao is a peaceful province. The things here are only the facilities and modest facilities. Phayao is a thriving community with outstanding natural beauty and fascinating religious sites. Back in 900 years, Phayao was an independent kingdom before becoming part of the Kingdom of Lanna Thai in the middle of the 14th century. Today, Phayao is a relaxed town surrounded by many sights. Natural beauty. A range of lakes and restaurants by the lake is ideal for commuting to the rural areas where many ethnic minority communities still maintain traditional lifestyles.
6	Phichit	As the land of crocodiles, Phichit was established nearly a millennium ago with many historical, cultural and natural attractions.
7	Phrae	Once the center of Thailand's teak industry, Phrae features many ancient teakwood villas as well as preserved forests, ideal for wildlife and wildlife animals tracking
8	Tak	Once a strategic military area between Thailand and Myanmar, Tak is now known for its lively border markets, ethnic diversity and natural scenery.

STT	Attractions (Province)	Specifications(*)
9	Chiang Rai	Quiet than the city near Chiang Mai, Chiang Rai is a land of outstanding natural beauty, where the tourists avoid the bustle of the card to visit the mountain tribe, wilderness and to the golden triangle, which was once the center of the opium trade of the world
10	Lampang	A charming city with horse carts and white elephant cages at the Elephant Conservation Center of Thailand
11	Mae Hong Son	Daily flights to the small airport in Mae Hong Son provide an ever increasing number of tourists to admire the stunning scenery and mountainous ethnic communities as well as exciting adventure experiences.
12	Nan	As a hidden jewel, Nan was once a kingdom and today is a haven for tourists seeking to explore tranquil and tranquil landscapes, natural beauty and culture of the North Thai Lan region.
13	Phetchanbun	As a province rich in history and fertile land, Petchabun is now a province with unique natural attractions, especially the mountain ranges covered by forests and water challenge, the river has created a cool climate almost year round.
14	Phitsanulok	In addition to its historical importance, Phitsanulok is known for its rivers, mountains and forests that are ideal for nature lovers.
15	Sukhothai	The area associated with the national heritage, where the Thai, associated with the traces of Buddhism, the famous festival Lou Krathong, Pho Khun (mother of Ramkhamhaeng) costume Teen Jok as well as the happy dawn.
16	Uthai Thani	A land of long history and ethnic diversity, Uthai Thani is known for its pristine wilderness, home to the threatened wildlife of Thailand, especially in the area. Huai Khaeng Wildlife Sanctuary has been recognized as a world natural heritage

*Note: Basic features are available at the Tourism Authority of Thailand's website (<http://www.tourismthailand.org>, accessed 6 February 2012).*

The introduction of tourism features by Tourism Authority of Thailand has shown a clear direction for the development of tourism products in this region. Characteristics of the 16 tourism destinations show that the main tourist features of this area include:

- A remote mountainous area.
- Characterized by natural tourism resources: mountains, forests, wildlife.
- Characterized by ethnic diversity in some provinces.
- Characterized by historical values: the history of the peoples and the kingdoms.

In addition to the common tourism images, 16 provinces in the region have their own tourism products. These characteristics are derived from the recognition and

assessment of strengths in each locality. Each locality is the old historical monument, rich in land will have cultural strength mixed with nature. Meanwhile, mountainous and remote provinces have their own strengths in exploration.

### *2.2.2. Focused investment in the tourism sector as a basis for promoting linkages*

Tourism development requires investment, especially in the first stage of tourism development. Investment in tourism development in the first phase need to significantly focus on development of tourism centre as a development motivation for other related areas.

One of the investment orientations for tourism development launched by the TAT in the early 2000s was the development of infrastructure for four gateway cities to the region's tourism development, as the basis for tourism region linkage activities and connects with international. Domestic and international resources were arranged for this purpose. One example is the project funded by ODA from the Government of Japan to invest in tourism infrastructure built from January 1995 to July 2002, with an investment of \$ 40 million.

The objective of this project is to "attract tourists to local areas and promote tourism development through the construction of infrastructure in the central cities of North, South and North Eastern Thailand (the gateway cities based on the flow of tourists) by which contribute to local development, job creation and increase foreign currency. 13/28 sub-projects were implemented in the Northern Thailand area as follows, around the Chiang Mai and Chiang Rai areas.

This tourism infrastructure development project in Thailand shows some of the following experiences:

- State policies play an important role in directing the development of the tourism industry in general and regional tourism in particular. This is an important base for gathering domestic and foreign resources for regional tourism development.
- In tourism development, regional tourism development plays an important role.
- The State plays an important role as leverage in promoting regional tourism.
- In order to develop the regional tourism, the focus of investment in major tourism destinations and the "gateway tourism" should be prioritized to create the source of visitors for whole regional tourism development.

### *2.2.3. The role of policy in developing tourism linkage at all levels - lessons from community tourism*

Community tourism is a form of tourism that contributes to the socio-economic development of localities, especially in mountainous areas. Models of community tourism development - the type of tourism that encouraged in mountainous regions such as Northern Thailand, shows the integrated role of the parties in tourism development, thus suggesting the interrelated models in the region.

A good example is the Mae Kampong Community Tourism Village in Chiang Rai Province - Northern Thailand according to the research of Kontogeorgopoulos et al. (2014). As a mountain village in Northern Thailand, located at an altitude of over 1000m with more than 300 people, Mae Kampong village was an agricultural village until the late

1990s when tourism developed here. Tourism development is a blessing to this village, as the fluctuations in demand for agricultural products provided by the village no longer meet the market demand, forcing the village to move to a new occupation is tourism. The location of the village, Mae Kampong, is their advantage, which located in Chiang Mai province; about 50 km north of Thailand tourist center, very suitable for developing auxiliary products, connected to the central mind this tour. In addition to the good fortune in terms of location, the external factors also contribute to the success of this community-based tourism village model, especially the important role of the State, non-profit organizations (NGOs) and other enterprises. First of all, the support of researchers and small-scale companies as they introduce Mae Kampong lane is a tourism product. However, significant and important support to the village came from the government, NGOs, through which, research activity, product development and training were conducted in the villages. Some significant government supports are:

- Thailand Tourism Research Foundation (TRF) allows to organize research activities and a variety of training courses for the community.
- The Tourism Authority of Thailand (TAT), as the state agency that performs the task of promoting Thai tourism, has supported the media programs through articles, articles on radio and television about Mae Kampong.
- An OTOP program with the participation of many government agencies has invested in the development of home-stay as a tourist product of Mae Kampong Village.
- Support from the Ministry of Sports and Tourism and the Ministry of Labor and Welfare to develop standards for residential accommodation and support for training in Mae Kampong Village to meet these standards.
- NGOs organize the capacity building programs and marketing programs for Mae Kampong Village.

Another good example of tourism development is in Pai District of Mae Hong Son Province - Northern Thailand (Lortanavit, 2009). The development of community tourism in this province also demonstrates the role of the parties, especially the Central State and local government in the development of community tourism. The development of community tourism activities at the tourist site is closely linked to the process of policy development at all levels as well as the development and business linkages between business establishments in the locality as well as other localities (Table 2).

**Table 2: Events and changes at the national and local levels**

<b>Level</b>	<b>Year</b>	<b>Events</b>
National	1987 1997	<ul style="list-style-type: none"> <li>• TAT launches "Thailand Tourism Year"</li> <li>• The 1997 constitution allowed the formation of independent organizations such as the National Human Rights Council of Thailand</li> <li>• Declassification became a mandatory requirement, passed by the 1997 Constitution</li> </ul>

Level	Year	Events
	1999 2001	<ul style="list-style-type: none"> <li>• TAT puts the "Sustainable Tourism Development Plan" in its 8th Five-Year Socio-Economic Development Strategy (1997-2001) with a focus on community development through a participatory approach that empower for the community.</li> <li>• TAT promotes "Eco-tourism Development Plan"</li> <li>• The National Assembly passed the 1997 Law on Decentralization of Power</li> <li>• Thaksin Shinawatra government (2001-05) introduced many policies for economic growth such as SML policy, Each village a product</li> <li>• TAT launches "Thai people travel in Thailand"</li> </ul>
Province Mae Hong Son	1987  1997	<ul style="list-style-type: none"> <li>• Regular upgrading the 1095 National Highway which is the main axis connecting Chiang Mai and Mea Hong Son, completing the asphalt paving</li> <li>• The government started officially promoting Mae Hong Son Province with the implementation of its sixth socio-economic development plan (1987-91). Mae Hong Son is one of the main destinations for tourism promotion</li> <li>• Mae Hong Son City and neighbour areas are identified as centers for community tourism development</li> <li>• Thai Social Investment Fund (SIP) supports local people in local development</li> </ul>
District Pai	1900 1982 1997 2001 2002 2003 2004	<ul style="list-style-type: none"> <li>• Pai became a district in Mae Hong Son province</li> <li>• Pai was first mentioned in 1982's Lonely Planet guidebook, introducing some guest houses</li> <li>• SIP supports local people to participate in local development by the course training local leaders to develop plans</li> <li>• After the Asian financial crisis, a "creative" group from Bangkok promoted the community tourism</li> <li>• Following a campaign calling for early retirement for state employees, a series of guest house are appeared in Pai</li> <li>• Three villages of Karen gathered and struggled for many years before the dredging operation, which caused subsidence and erosion by an investor who had purchased the land since 2001.</li> <li>• Thai city law is implemented. The law specifies the coordination process for decentralization, the interests of the state and the locality</li> <li>• The Thai Human Rights Council worked with Pai in 2003-2006 with various activities such as build a radio station and propagate for local people.</li> <li>• The network of 5 star hotels in Bangkok invests in Pai</li> <li>• 7-Eleven convenience store opened in Viengtai</li> </ul>

Source: Lortanavit, 2009

### 3. Tourism regional linkage in Malaysia

#### 3.1. About Malaysia Tourism

Malaysia is also a major tourism country in Southeast Asia and the world. As the country has the most sustainable economy and political stability in the region. In 2008, the number of tourists to Malaysia has reached more than 22 million visitors. By 2015, Malaysia has welcomed nearly 26 million tourists.

According to the WTTC, in 2015, the total contribution of tourism to GDP was 152.8 billion ringgit (13.1% of Malaysia's GDP). The direct contribution of GDP tourism was 51.1 billion ringgit (4.4% of this country's GDP). The WTTC forecasts that direct contributions will increase to 7.9% to 55.2 billion ringgit in 2016.

Although Malaysia's tourism scale is not as large as Thailand's, Malaysia is also widely known on the tourism map of the world. Being ranked in 184 countries in the world, Malaysia tourism industry is ranked 27th in absolute value. The country has seen rapid growth in recent times (the world's third fastest pace in 2016).

#### 3.2. Experience in tourism linkages in Malaysia: the role of policy

Malaysia's economic and natural characteristics lead to uneven development of tourism (Henderson, 2008). Tourism area development in Malaysia also follows the development of the tourism industry in this country. Typically, the Northeast region with Kelantan, Pahang and Terengganu provinces has been encouraged to develop tourism since 1999, after Malaysia's move to develop a new tourism brand, "Truly Asia", with a broader focus on tourism products in the country. In line with the national policy, the provinces in the Northeast region have set up orientations and policies to develop this area into a new tourism centre, exploiting the inherent values of nature, with the construction and development of attractive tourism products.

Although tourism sector development has not been identified as a separate priority in general tourism development policies, Malaysia has, over the past 20 years, tourism development aims to promote regional linkages. These policies also change according to the characteristics and level of tourism development of Malaysia. Table 3 summarizes Malaysia's tourism policies since 1990. A note that the number of international tourists to Malaysia in 1998 was 5.6 million, 10 million in 2002, and 24.28 million in 2010 (Mosbah and Khuja, 2014).

**Table 3: Tourism Development Strategies in Five Five-Year Strategies of Malaysia**

Plan	Tourism Development Strategies
MP6 (1990-1995)	<ul style="list-style-type: none"><li>✚ Get investment in Malaysia and nurture activities that can create jobs and connect with other economic sectors, stimulating economic growth, income and added value.</li><li>✚ Provide the support needed to promote Malaysian domestic and international tourism destinations</li></ul>

<p>MP7 (1996-2000)</p>	<ul style="list-style-type: none"> <li>✚ Diversify products and services to serve the needs of tourists</li> <li>✚ Promote new products such as sports, shopping, meetings, and water activities</li> <li>✚ Ensure effective marketing activities</li> <li>✚ Encourage investment especially the private sector to participate in innovative projects on tourism</li> <li>✚ Increase participation of local communities and small businesses</li> <li>✚ Upgrade the infrastructure and provide the minimum necessary conditions</li> <li>✚ Provides telecommunications conditions</li> </ul>
<p>MP8 (2001-2005)</p>	<ul style="list-style-type: none"> <li>✚ Balance economic, environmental, cultural and social aspects when planning and implementing tourism activities</li> <li>✚ Design conservation activities for environmental and cultural resources</li> <li>✚ Establish comprehensive approaches to tourism development (hospitality, innovation and the power of private business, creating publicity and public concern)</li> <li>✚ Present Malaysia as a festival spot for the whole year</li> <li>✚ Focus more on products for special needs such as ships, boat racing</li> <li>✚ Ensure the safety, comfort and welfare of tourists</li> </ul>
<p>MP9 (2006-2010)</p>	<ul style="list-style-type: none"> <li>✚ Ensure sustainable tourism development</li> <li>✚ Support for innovative tourism services</li> <li>✚ Encourage marketing and promotion activities</li> <li>✚ Focus on the development of new products such as agricultural tourism, ecotourism, educational tourism, meeting tourism, sports and leisure travel and <i>Malaysia is my second home</i></li> </ul>
<p>MP10 (2011-2015)</p>	<ul style="list-style-type: none"> <li>✚ Emphasis on the development of national tourism based on nine types of tourism: heritage, ecotourism, home-stay, sports, island, meeting, gastronomy, golf, and shopping and health.</li> <li>✚ Promote the image of tourism destinations</li> <li>✚ Conduct large travel events, large-scale programs, upgrade comfort, safety and cleanliness</li> <li>✚ Develop more infrastructure and technical facilities for tourism</li> <li>✚ Continuing marketing and promoting key tourism products to major markets such as Asia, Indochina, and Europe.</li> <li>✚ Emphasis on the quality of human resources for high quality of service</li> </ul>

Source: Mosbah and Khuja (2014).

*Note: The underlined section is a note about the manifestation of policies that promote regional linkage.*

Malaysia's tourism development strategy shows the government's orientation to address the current status of tourism as well as the path for tourism development in each period. When assessing Malaysia's national tourism policy, some issues that can be drawn are:

- In the early stages of tourism development, the issues raised with tourism development are the development of tourism services and products and associating development of tourism with related sectors. This can be done by businesses, but the role of government in promoting this activity is important. Governments need policies to promote value chain development, both in the areas of the profession and in the development of tourism.

- The role of policy gradually shifted from a specific problem-solving approach (including the development of a policy to strengthen linkages of tourism development) to a holistic approach in which participants, especially private enterprises, play an important role. At the same time, product innovation is central to the development of tourism, including the development of national product lines as well as new products.

As tourism develops at a higher level, innovations in the industry focus on the level of completion and improvement of product quality and tourism business. Policy orientations in addition to supporting these themes also focus on promoting active market access and branding for tourism.

National tourism development policy is an important basis for promoting the development of tourism linkages by geography and product value chain.

#### **4. Some experience with Vietnam and the North West in tourism linkage development**

Researches on tourism area linkages in Thailand, Malaysia and Australia shows several concrete experiences that can be applied in strengthening tourism linkages. A number of general issues derived from the international experience have been studied:

*Regional tourism development is a necessary requirement for the tourism development of the country.*

The tourism development in the country is characterized by spillage, from the major tourist centers, spread to the local guest. Trends in tourism development across the country in the direction of developing tourism from the center of unique tourism, expanding into the surrounding area, from the central area to expand the farther away. Tourism linkages development is an indispensable requirement due to the characteristics of tourism development, the needs of tourists, the requirements of development of tourism products. Tourism linkages development is also an effective tool for tourism development. The actual development of tourism in developed countries shows that the development of tourism by region and the strengthening of tourism linkages development is an indispensable requirement.

*Regional tourism development is associated with geographic features, natural conditions and socio-economic characteristics of the region.*

Tourism development is linked to tourism resources, including natural tourism, social and cultural resources. In addition, the socio-economic conditions directly affect the infrastructure, people's intellectual level, business level, level of service... directly affect

development activities. travel of the locality. Tourism development in each locality, each region should have a long-term orientation, not only to meet current requirements for tourism development, but also to address the need for sustainable development in the long run.

*There should be clear strategies and strategies for tourism linkage development*

An important requirement in promoting regional tourism linkages is the policy of the state. Government policy impacts on many levels and perspectives. Central government policies, especially those related to tourism, are open to awareness and the basis for policy development in the tourism sector. Whereas local policies are the direct basis for strategies and mobilizing and linking resources in tourism development.

Policies are not only tourism development policies but also involve many other socio-economic development policies. The development of regional tourism linkages is not only defined in tourism but should be placed within the framework of socio-economic development of the region.

*There should be pioneers for product development and collaborative development*

Regulators play an important role in promoting regional tourism. Cross-regional coordination activities require the centralized and coordinated management of an agency to mobilize and coordinate best the resources of tourism development.

*Regional tourism development initiatives are essential, in which the initiative of the parties in the construction and development of tourism products should be mobilized.*

Tourism is a highly innovative economic sector that requires constant innovation and development. Regional linkages are always in a dynamic, flexible state, always requiring innovative and creative activities.

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# THE IMPACT OF AGRICULTURAL LAND USE TRANSITION ON INCOME OF HOUSEHOLDS IN VIET TRI'S PERI-URBAN AREAS, VIETNAM

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## **Abstract**

*Since the late 1980s, Vietnam has experienced rapid industrialization and urbanization, which led to the acquisition of a large number of farmland in peri-urban areas for non-agricultural purposes. Farmland loss is indeed a burning topic that attracts attention from administrators, policy maker and the media. This paper investigates the relation between the agricultural land loss and income of households. Our research provides an econometric analysis of the impact of agricultural land due to urbanization and industrialization on household incomes in Viet Tri's peri-urban areas, Vietnam. The econometric results revealed that farmland acquisition was not statistically correlated with the incomes of the household in this study. It found no econometric evidence for negative impacts of farmland acquisition on incomes of households on the study site. Nevertheless, farmland acquisition should not be systematically considered as a negative trend as it can motivate the households to transform livelihood strategies towards non-agricultural work.*

## **1. Introduction**

In the process of industrialization and urbanization, the State has compulsorily acquired a very large number of farmland from the peasants for building industrial zones, urban areas, infrastructure projects, other national and public use purposes. The State acquired 697,417 hectares of land for use purposes as above mentioned (Martinez & Le Toan, 2007). At national level, around 500,000 hectares of agricultural land were acquired for construction of industrial zones, infrastructure projects and urban expansion that has influenced around 630,000 agricultural households in the period of 2000-2007 (de Wit, 2013). Around 11,000 hectares of agricultural land have been converted for industrial development and urban expansion in Hanoi's peri-urban areas in the city's land use plan. This plan resulted in about 150,000 people losing their agricultural work (Van Suu, 2009). In addition, Hanoi city's urban expansion on both banks of the Red river results in relocation of around 12,000 households. This expansion removes approximately 6,700 farms in Hanoi (Van Suu, 2009). A conversion of nearly one million hectares of farmland, accounting for around 10 percent of the total Vietnam's farmland for non-agricultural purposes was estimated over period from 2001-2010 (WB, 2011). It is estimated that, in Hanoi, Hung Yen and Vinh Phuc provinces, more than half the farmland has been

converted by 2011 for non-agricultural purposes such as the development of industrial zones, urban zones and infrastructures (Doan, 2011).

The government's agricultural land acquisition has an important impact on the lives of farm households in Vietnam's sub-urban areas. Land acquisition affected approximately 630,000 households and 2.5 million people in Vietnam (Lam-Dao, Pham-Bach, Nguyen-Thanh, Pham-Thi, & Hoang-Phi, 2011). (Nguyen, McGrath, & Pamela, 2006) gathered secondary data from various published documents and concluded that Vietnam had a rapid process of industrialization and urbanization in sub-urban areas. This process caused a large number of farmland losing households. Many households among land-losing households had fallen into poverty. A large scale survey in 8 provinces with the greatest agricultural land acquisition showed a rather pessimistic picture of farm household income. In this survey, around 18% rural households lost their farm income with nearly a 2.8% and 2.7% employment increase in industrial and services sector.

In many studies of this major economic and social transformation they found mixed impacts of agricultural land loss on household incomes, (T. H. T. Nguyen, 2011),(T. Tran & Lim, 2011),(H. K. L. Nguyen, 2013), (Huu, Phuc, & van Westen, 2014),(H. Tran, Tran, &Kervyn, 2015), (Nguyen Quang, 2015) and (T. H. T. Nguyen, Tran, Bui, Man, & de Vries Walter, 2016). Many factors can be brought forward. Farm land loss influences household incomes by creating new non-agricultural employment opportunities. It also changes livelihood asset of households. Many land losing households benefited from their proximity to industrial zones, urban centres. Many households built and rented out boarding houses to migrant people such as workers, students and income from this activity are their important income source. In many cases, compensation money of land loss was recognized as an important financial capital that helps farm households face shocks and ensure in profitable non-agricultural work (Phuc, Van Westen, &Zoomers, 2014). However, unfortunately not all peasants succeeded in creating suitable and sustainable livelihoods, many of them became unemployed because they did not receive appropriate education and vocational skills. As a result, there were differentiations in social aspects rising among farm households (Van Suu, 2009). In another way, the agricultural land loss has caused by the loss of natural capital of rural households, traditional farming skills, food supply and farm income resources. Their adaptation to the new situation is the diversity of their livelihood choices and strategies. They utilize the livelihood resourcesuch as residential land, compensation money, human capital and other livelihood assets. The main income resource of households comes from wage employment that is usually higher but more unstable and unsustainable than farm income one.

In this challenging context, the main objective of this paper is to bring a scientific contribution and element of answers to this research question: how, and to what extent, has recent agricultural land loss impacted household income and its components, with a special focus on Viet Tri's sub-urban areas, Pho Tho province, Vietnam. We carried out this local study because although there have been a lot of study cases assessing the impacts

of farm land acquisition on agricultural income and its sources, but there is no study carried out by econometric way in the Viet Tri city, Phu Tho province, Vietnam. This is also a particularly burning topic that needs to be investigated as it is relevant administrator, policy maker and local people in Phu Tho province.

## **2. Study area**

This study was carried out in Viet Tri, the capital city of Phu Tho Province. This city is a medium-sized city located in the North-East region of Vietnam, about 80 km from Hanoi. Viet Tri is situated in a very prime location that surrounded by a number of important roads, namely Hanoi – Lao Cai Highway and National Way 2. The city occupies 11,152.75 hectares of land, of which agricultural land accounts for 5,448.17 hectares. There are 23 administrative units in the city, including 13 wards and 10 communes. The city has around 51,563 households with 198,002 people. Farm labor occupies 20.49 per cent of the whole labor of the city. The corresponding figures for industrial and services one are 43.20 per cent and 36.31 per cent respectively (Statistics Department of Viet Tri city, 2016). The city has great potential for industrial development, agriculture, trade and services. Viet Tri is one of the first industrial cities of northern Vietnam. Viet Tri is also the economic centre of the province and contains many enterprises in industrial and service sectors. The city has developed some industries such as chemical, paper, apparel... The city has focused on the city's factories, enterprises, companies with industrial scale production. The industrial sector has contributed a large amount of provincial funding and jobs for many workers every year. At 2016, Viet Tri GDP per capita reached 74.92million VND per year.

Over the past few years, the socioeconomic structure of the Viet Tri city has experienced important changes, with a growing number of farmland acquisition projects. It has been lasting a massive conversion of agricultural land for non-agricultural purposes. In only two years from 2014-2016, the city lost 269.97 hectares of agricultural land for industrial and urban expansion projects. This farmland loss is about 5,2 per cent the whole agricultural land of the city. At present, several new urban plans have been or will be constructed in sub-urban areas. This creates the increasing pressure on farmland acquisition. Land acquisition in Viet Tri is characterized by the compulsory agricultural land acquisition.

## **3. Data and methods**

### **3.1. Data collection**

A household questionnaire was developed for this study. This questionnaire is adapted from the questionnaire of the 2016 Rural, Agricultural and Fishery Census in Vietnam. The questionnaire was designed to collect quantitative data on farm household characteristics, household assets and incomes. A sample size of 100 farm households, including 50 with land loss and 50 without land loss collected from 3 communes that are Phuong Lau, Trung Vuong and Thuy Van. The sample was randomly selected for research purposes. Nevertheless, 120 households were chosen, including 20 households for the

reserve, to reach the target sample size of 100 households. The survey was implemented in March 2017. Face to face interviews with one member of the households in the presence of another household member at least. In total, 100 households were successfully interviewed with 50 for the land loss household group and 50 for those without land loss. Among the former (households with land loss), some lost little of their land; some lost part of their land and others lost most or all of their land. Their agricultural land was compulsorily acquired by local government for a number of projects related to non-agricultural use purposes.

### **3.2. Analytical models**

As mentioned above, the farm household sample was split into groups, namely land-losing households and non-land-losing households. For investigating the differences of the characteristics, assets and incomes of two household groups, we used the approach of comparing the mean of variables referred to characteristics, assets and incomes of household. We have many statistical methods for analyzing the differences in two mean values, which are based on analysis of variance (Kao & Green, 2008). In this study, we had two household groups with small sample size and no normal distribution, so we have to use the Mann–Whitney test for quantitative variables and Chi-squared test.

The Mann–Whitney test is also called the Mann–Whitney–Wilcoxon test which is a non-parametric alternative to the independent sample T-test. Because there is a similar nonparametric test used on dependent samples that is the Wilcoxon signed-rank test. The Mann–Whitney U test used to test whether two sample means are equal or not. It is used when the assumptions of the T-test are not met or when the data is ordinal. Unlike the T-test this test does not require the assumption of normal distributions. It is nearly as efficient as the t-test on normal distributions (Ruxton, 2006).

Total annual household income, total in this study is continuously distributed over positive values. Ordinary least squares regression (OLS) was usually used to analyze factors influencing total annual household income. However, other components of total annual household income are total annual farm income and total annual non-farm income, which are continuous but censored at zero. The ordinary least squares regression estimator will give biased results in this case. So we had to use Tobit regression for such data. Tobit regression analyzes the determinants of total annual farm income, total annual non-farm income and total annual household income in this study (Otsuka & Place, 2001). Household characteristic and assets were assumed to determine total annual household income and its components.

The definition and measurements of variables included in the analytical models are presented in Table 1.

**Table 1. Definition and measurement of variables in analytical model**

	<b>Definition</b>	<b>Measurement</b>
<i><b>Independent variables</b></i>		
Total income	Total annual income from farm, nonfarm and other	1,000 VND
Nonfarm income	Total annual income from wage and self-employment in nonfarm activities	1,000 VND
Farm income	Total annual income from planting and livestock production and other related activities	1,000 VND
<i><b>Explanatory variables</b></i>		
Land loss	The proportion of farmland that was compulsorily acquired	Ratio
Land-losing	Whether or not the household farmland is acquired	Land-losing=1; Non-land losing=2
<i><b>Household characteristics</b></i>		
Age of household head	Age of household head	Years
Gender of household head	Whether or not the household head is male.	Male=1; Female=2
Education of household head	The highest level of education of the household head attained in the last 12 months age members	Primary=1; Lower Secondary= 2; Upper Secondary=3
Farm labor	The number of household laborers in farming work	Person
Nonfarm labor	The number of household laborers in non-farming work	Person
<i><b>Household assets</b></i>		
Farmland size	The size of owned farmland per household	m2
Residential land size	The size of residential land owned by households	m2
Value of household assets	Total value of household assets	1,000 VND
Financial capital	Economic resource measured in terms of money used by household to generate household livelihood	1,000 VND
Past nonfarm participation	Whether or not the household had participated in nonfarm activities before farmland acquisition.	=1 if yes; =2 if no
Commune variables	The commune in which the household resided	Phuong Lau = 1; TrungVuong = 2; Thuy Van = 3

## **4. Results and discussions**

### ***4.1. Background on household assets and income sources***

Some information on household characteristics, assets and past participation in nonfarm activities for two land-losing and non-land-losing farm household groups is presented in the table 2. There were statistically significant differences in the number of farm labour and non-farm labour, the farmland size and the farm income between two groups. On average, the land-losing group had more farm labor than the non-land-losing group. This was a worrisome fact. This would increase the pressure for and changing work from the agricultural sector to non-farm sector. Therefore, land-losing group still remained more farmland than non-land-losing one. This suggests that the city's administration could choose areas that had many agricultural lands in order to acquire for urban development projects and other projects using land for non-agricultural purposes. This also suggests that local administration could make an effort to limit maximum socioeconomic instabilities for land-losing households. They still hold a large number of farmland comparing to the common average per household of the locality. This could help farm household to avoid shocks and sudden change in their livelihood. Because they had more farmland, although were acquired, so it is easy to understand why land-losing group still had higher farm income than non-land-losing group. Nevertheless, this has not meant because the total annual household income of two groups proven was equivalent.

This helps judge that livelihood changing of land-losing household group was not good and compensation level for farm land acquisition in Phu Tho province is too low. That was not enough to make a difference in value of productive assets in farm production and service sector activities. This was confirmed by comparing the value of assets between two groups that was not statistically significant difference. Similar as farm land, land-losing group also had more residential land than non-land-losing. This is explained by the politic intent of management levels in the locality.

Research results also indicated that there were no statistic differences on some characteristics of two household group such as gender of household head, age of household head, education level of household labors, the participation in non-farm activities before land-acquired. This showed that human capital, social capital of the two household groups was similar. Physical capital presented through the assets of the two groups also did have no statistically significant difference. In modern society today, human capital is considered as the most important capital, financial capital is the second, and then social capital and so on. So, though land-losing group has more natural capital, but this was enough to make a better livelihood outcome as total annual income of this household group was not higher than non land-losing household group. Because non land-losing household group had less land resources so they balanced their income themselves by non-farm income. This showed a dynamic ability of whole two groups in access to jobs in the non-agricultural sector. Because there was no difference in more early access to non-agricultural activities,

in general, experience and working skills in the nonfarm sector of two groups judged were similar. So they did not make the difference in income in non-agricultural activities.

**Table 2. Statistics of household of household characteristics, assets and incomes**

Variables	All households		Land-losing households		Non-land-losing Households		Mann-Whitney / Chi spare test
	Mean	SD	Mean	SD	Mean	SD	Z/ $\chi^2$ a
<b><i>Household characteristics/assets</i></b>							
Gender of household head	1.23	0.42	1.20	0.40	1.26	0.44	0.58
Age of household head	47.66	9.45	49.14	9.25	46.18	9.51	-1.69
Education level of household head	2.51	0.56	2.58	0.53	2.44	0.57	1.58
Farm labor	1.76	0.57	1.98	0.14	1,54	0.73	-3.99***
Non-farm labor	1,65	0,97	1.44	0.97	1.86	0.92	-2.05**
Past non-farm participation	1.36	0.48	1,40	0.46	1.32	0.47	0.69
Farmland size of household	1097.73	771.91	1354,48	913.60	840,98	484,40	-3.08***
Residential land	356.70	205.52	409.04	205.96	304.36	193.21	-8.60***
Value of Household assets	53057	9796	54950	11853	51164	6789	-1.44
Financial capital	12997	14807	9390	5176	16594	19734	-0.59
<b><i>Household incomes</i></b>							
Total household income	145296	56628	144012	62646	146581	50508	-067
Farm income	10932	6017	12252	7320	9613	4002	-3.33***
Non-farm income	145296	56628	131760	61713	136968	50796	-0.10

*Notes:*<sup>a</sup>applied to dummy variables. \*, \*\*, \*\*\* mean statistically significant at 10%, 5% and 1%, respectively.

The determinants of household income components are presented in the table 3. There are some explanatory variables with high statistical significance. But these results are not similar to the results of (Nguyen, 2014). Land loss had no effect on farm income. The fact indicates that the agricultural land loss had made farm household change the structure in agricultural production toward having a more efficient farm income. That can compensate the increase of farm income coming from the resulting farm land loss. The loss of agricultural land had also no effect on non-farm income. That can explain that the farm land-losing household members could change their livelihood choices and strategies, although the compensation money from farm land loss is low. It is indeed not sufficient to make a great change in their livelihood. This study provides a new finding on household income components comparable to the previous research on the same topic as (T. H. T. Nguyen, 2011), (T. Tran & Lim, 2011), (Tuyen & Van Huong, 2014), (Tuyen, 2014). This is possibly attributed to the features of the study site of this research that is a sub-urban area of a small city in a transition zone between the delta and the mountain; East and West of the northern mountain zone of Vietnam. The previous studies were almost carried out in

the big cities or the dynamic-economic cities in the motive-economic zones of Vietnam as Hanoi, Ho Chi Minh city, Hung Yen city, Hue city... By this study, we complement the picture about the impacts of farmland acquisition on household income components in a small city in Vietnam.

The result of econometric analysis showed that households with more labour enjoyed increased non-farm income. But this factor has no impact on the farm income. These results are opposite to research results of (Van de Berg, Van Vijk, And Van Hoi, 2003) and (Jansen, Midmore, Binh and Tru, 1996) (Huang, We, and Rozelle, 2009) and (Tran, 2014). Our results reflect the situation of most of the households in the site study that have low-effective farm production. Many households hadn't had been strongly relying on farm activities before farmland loss. So when farm land acquisition happened, these households used the compensation money that comes from farmland loss investing in agricultural activities in order to increase agricultural production effectiveness with hope that this compensates the decrease of agricultural production due to farmland loss. But they were not successful with that livelihood strategy.

**Table 3. Estimates for determinants of farm and non-farm incomes**

<b>Explanatory variable</b>	<b>Non-farm income</b>	<b>Farmincome</b>
Land loss	41.13647 (107.6841)	32.10785 (28.88832)
Gender of household head	11023.47** (5201.076)	-2539.553* (1395.814)
Age of household head	-2347.864*** (250.6537)	128.4443** (64.11862)
Education of house household	-2478.889 (4078.512)	-19.99250 (1086.395)
Commune	787.6080 (2768.272)	-844.8851 (741.4901)
Financial capital	0.320143** (0.155052)	0.088134** (0.041939)
Household assets	-0.136554 (0.235051)	0.045907 (0.062787)
Household labour	56467.88*** (2467.047)	725.7174 (641.4875)
C	46148.16* (25286.20)	3017.544 (6804.471)

*Notes:* Standard errors in parentheses. \*, \*\*, \*\*\* mean statistically significant at 10%, 5%, and 1%, respectively

Female headed households have higher farm income than male headed households. But oppositely, male headed households earn more non-farm income than female headed ones. This can be explained by the fact that agricultural activities are more suitable for female gender while non-farm livelihood in research areas is more adapted to male labor. This result is similar with other previous work such as (T. H. T. Nguyen, 2011), (T. Tran & Lim, 2011), (Tuyen, 2013), (Tuyen& Van Huong, 2014).

The education level of household labor does not affect household incomes for both farm income and non-farm income. This indicates that household livelihood in research areas was based on farm and non-farm activities that do not require much knowledge or specialized skills. That reflects the fact that farmland loss lead to change in livelihood strategy of household in Viet Tri's sub-urban areas, but the livelihood choices of households were not complicated activities in both farm sector and non-farm sector. Education level were found to play an important role in changing livelihood choices in other researches - but particularly those carried out in areas where it is possible to find jobs requiring professional knowledge and higher skills.

This study reveals that household assets do not play an important role in generating income in both agricultural and non-agricultural activities. That is explained by the low level of investment in households' productive assets in the study site. This is not in line with the research results of (Nguyen, Kant, Mac Laren, 2014). Therefore, the financial capital of households affects both farm and non-farm livelihood in research areas. It suggests that if compensation money from farm land loss was used to invest in both farm and non-farm activities that could generate both additional farm and non-farm incomes for households. That is coherent with other studies on this topic as (Van Suu, 2009, (T. H. T. Nguyen, 2011), (Tuyen& Van Huong, 2014), (H. Tran et al., 2015).In addition, the location of household has no impact on both farm income and non-farm income in this study. This can be attributed to the fact that the households in study site do not live in concentrated-popular areas with many universities and company or large urban.

The econometric analysis shows that there is no impact of farmland loss on total household income. This is explained by the balance in the different impacts of farmland loss on both farm and non-farm income sources. The households were well adapted to the new situation that was created from the state land acquisition. Although there were no effects of farmland loss on household livelihood in the short term, a positive impact on long-term income can possibly be expected when the amount of compensation money from land loss invested in the development youth human resources will bring effectiveness in the future, especially the amount of investment in education for children of households. This suggestion is also well supported by the studies of (Nguyen, 2013), (Nguyen, 2014). Age of household head is a factor that has effects on the total household income. This is can be explained by the fact that younger working members had better ability for adapting to the shock of land acquisition. That is similar to the analytical results of farm income and non-farm income.

There was no effect of households' educational level on their total income, in Viet Tri's sub-urban areas. This analysis result is coherent with those for farm and non-farm incomes mentioned above. The location of households also does not impact total household income. The value of household asset also has not affected on the total income of households similarly with both farm and non-farm income. Therefore, financial capital had an impact on the total household income as its concerns both farm and non-farm incomes. The analysis also showed an important effect of number of worker in household on their total annual income. This finding is similar in the other research in various localities in Vietnam as (Van Suu, 2009), (T. Tran & Lim, 2011), (T. H. T. Nguyen, 2011), (H. K. L. Nguyen, 2013), (Tuyen & Van Huong, 2014).

**Table 4. Estimates for determinants of total household income**

<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>
Land loss	77.31051	107.6369
Gender of household head	6603.640	5200.752
Age of household head	-1973.115***	238.9037
Educational level of household	-1998.547	4047.868
Commune	193.7560	2762.766
Household assets	-0.100173	0.233944
Financial capital	0.388489**	0.156263
Household labour	55148.38***	2390.159
C	46804.09*	25353.21

*Notes:* \*, \*\*, \*\*\* mean statistically significant at 10%, 5%, and 1%, respectively

### **Conclusion**

This study investigated the relationship between farmland loss and income generation of households, to complement scientific analysis of previous surveys using qualitative and quantitative methods with descriptive statistics analysis. We carried out an econometric analysis in order to explain the impact of land loss on total household income and its components. The results of our research reveal that there were no statistically significant impact of land acquisition on household incomes as well as its resources as farm income and non-farm income in Viet Tri city's sub-urban areas. The first explanation is that households of research site are well adapted to the new situation created by farmland acquisition. Residents seem adapt to balance the effects of farmland loss and compensate with additional incomes, resulting in no change on their incomes. Nevertheless, a policy implication can be proposed here: Facilitating to access capital

resources (rural credit, small loans etc) for land-losing households so that they can diversify livelihood choices and strategies. Young people in land-losing households need to be supported in finding jobs so that they can generate higher and more stable income sources. Specially, Administration of communes should be interested in creating new livelihood for land-losing households with many labours so that they have opportunities to increase their income from their available resources.

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## **PART 3: HUMANITIES AND SOCIAL SCIENCE**



# CORRUPTION AS A CHALLENGE TO NATIONAL SECURITY AND DEVELOPMENT IN NIGERIA

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## **Abstract**

*This paper examined the extent to which corruption pose a challenge and weigh down national security and development in Nigeria with various manifestations. The prevalence of corruption challenges in Nigeria is highly pervasive by undermining the nation's social, economic and political development. Corruption has unfavourable consequences on investment, growth, security and national development. Thus, weakening the institutional foundation on which all policies are made and implemented and making it detrimental to the sustainable development of the country. Therefore, this study examines the causes, manifestations, and implications of corruption on national development in Nigeria. The study is qualitative in nature; it makes use of secondary sources of data in discussing challenges of corruption to national security and development in Nigeria by consulting the literature on corruption. Among others, the study recommended that moral values should be inculcated among citizens of Nigeria, the citizens should be provided with more enlightenment programmes on consequences of corruption. It further recommends that the anti-corruption law and institutions be reformed in order to strengthen their responses in treating corrupt cases easily for socio-economic and political development of the country for sustainable development in Nigeria. Provisions of basic amenities for the citizens are important in the fight against corruption.*

**Keywords;** Corruption, Development, National Security, Nigeria

## **1. Introduction**

Nigeria is commonly referred to as the giant of Africa due to her numerical strength of being the largest country in Africa in terms of population. It is Africa's most populous nation. However, Nigeria as a nation is on daily basis suffering from an increase of activities that are intimidating and endangering its existence such as corruption, Boko-haram insurgency, kidnapping, drug abuse, armed bandit, human trafficking, youth militancy, political crises, ethnoreligious violence, and Fulani herdsmen and farmers crises among others. It can be observed that corruption is an extensively recognized globally as a social phenomenon that is a threat to the sustainable development of any nation or civilization.

Corruption as a challenge posed a serious threat to national development. Countries with the higher prevalence of corruption have lower levels of development and countries

with the lower rate of corruption have high economic growth and development as well as functioning government. Meanwhile, corruption has become one of the major social problems in Nigeria; it is happening in both the private and public sectors which undesirable consequences on the social, economic and political development of the nation. It is a fact that corruption threatens the fundamental principles of the Nigerian polity, even the security challenges in the country has been linked to the corruption that has led to poor governance. Corruption is widely spread in Nigeria, taking different forms such as contracts inflation, falsification of financial records embezzlement and misappropriation of public funds, extortion, bribery, nepotism, influence peddling, payment for favourable judgement among others (Omode, 2011; Adebayo, 2013; Ene, Arikpo, Jeffrey and Albert, 2013). It is observed that a whopping \$50 billion is lost annually to corruption and illicit financial flows in the continent of Africa (Moussa, 2018). Nigeria is seen as one of the most corrupt nations in the world according to Transparency International. In addition, it is pointed out that corruption is used to acquired and sustain political mandate in Nigeria, causing heinous consequences of mass abject poverty, high rate of unemployment, political instability.

It is pragmatic that corruption remains the major obstacle to alleviating extreme poverty and plunks the path of progress towards national development such as impede law enforcement and judicial processes leading to poor performance, limiting the ability of citizen abilities to access job and other social benefits among others (Ijereweme and Dumade, 2014 and Okolo; and Akpokigbe, 2014).

Nigeria is seen as one of the most corrupt nations in the world. Therefore, it is pertinent to note that corruption has slow down the national development in Nigeria and it is detrimental to sustainable development because of its adverse consequences on socio-economic and political development. Thus, this study examines the extent to which corruption as a challenge that obstructs the national security and development in Nigeria and its implications for sustainable development.

## **2. Methods**

This research utilized secondary sources of data in discussing corruption as a challenge to national security and development in Nigeria. The sources of data were from textbooks, journals and newspapers focusing on corruption, national security, and development.

## **3. Conceptualization of Key Terms**

### ***3.1. Corruption***

Corruption is view as a multi-dimensional concept and it has been described or defined by many scholars in different ways.

Adegboyega (1996), posits that corruption is any decision, act or conduct undermining the effectiveness in performing assigned roles or threaten the integrity of people, authority or institutions in possession of promoting, defending, or sustaining the democratization process. Ngwube and Okoli (2013) assert that corruption is an unlawful, dishonest, and wicked behaviour which is vicious to the moral fabric of the society such as bribery, contracts inflation, kickback and payment upfront, lodging government fund in

personal account, selling of hazardous drugs, adulterations of foods or drinks, proxy name to purchase property, embezzlement or misappropriation of public fund. Similarly, Saliu and Aremu (2004) and Odeh (2008) respectively put forward that corruption comprises of acts that are likely to diminish the capacity of any nation or state to meet its required material and welfare obligations to its people and corruption erode efficiency and professionalism.

In view of the above descriptions, corruption exists in different forms in every society and it is the violation of any established or existing rules for selfish gain or reason and detrimental to national development and sustainable development.

### ***3.2. Development***

The concept of development is equally a multi-dimensional perceived among scholars. Akwara (2013) and Desai and Potter (2014) view development as the obvious position in the advancement of human capital, economic and social upliftment which are capable of increasing manpower, decent housing, easy transportation, well-organized and successful health care system, a high level of social cohesion and above all unhindered access to wealth generation activities. Imobighe (2014) described development as socio-political and economic advancement. It is the process of change in state of affairs from lower to higher level. In the same way, development is the provision of basic needs that ensure a better living condition such as health facilities, clothing, shelter, food and basic education. In addition, development is the ability of a country or nation to improve the standard of living of its people through the provision of social amenities like safe portable water, good qualitative education, healthcare services, good roads, housing (Okolo,2014) and Imhonopi and Urim, 2013). It is important to note that lack of these basic necessities of life indicates absolute nonexistence of development and apparent existence of poverty because development entails all the basic needs or necessities of life that ensure ease of the people in any given civilization and it must be provided at all levels of the societies irrespective of ethnic, religious, political, economic and socio-cultural affiliations in order to make it national development.

### ***3.3. National Security***

One of the cardinal functions of the government in any society is the provision of security for its citizens through protection of lives and property. Security is care and safety of lives and property.

National security is can be observed as the protection of a state from both internal and external aggression. It is seen further than territorial guard but rather it should be particular in terms of people that live within that particular nation. Equally, national security can be expressed as the ability of a state to overcome any of its internal or external challenges. It is further described as the provision of the security-based interest by individuals, groups, and institutions with the objective of preventing the territory of the nation or country (Dambazau, 2007; Umo, 2007; Magaji, 2011 and Okolo, 2014).

It is important to reiterate that protection of lives and property against either internal or external aggression cannot be undermined because aggressions of what so ever or at

whatever level sham serious threat to the national security of nation's socio-economic and political development and it can be clearly observed in Nigeria at present due to various forms of violence or insurgencies that are occurring such as Boko-haram, kidnapping, armed robbery, human trafficking, youth militancy, political crises, ethnoreligious violence, and Fulani herdsmen and farmers crises among others.

#### **4. Causes and Manifestations of Corruption in Nigeria**

Several factors have been advanced as causes of corruption as a social phenomenon in Nigeria. Corruption exists in both private and public sectors in Nigeria and some of the reasons put forward as possible causes of corruption in Nigeria are multifaceted in nature.

The basis of corruption could be traced to the culture of the strange value system in the Nigerian the society due to the depreciated culture and weak value system where people think it not important to be law-abiding, honest, discipline and hardworking (Anyadike, 2013; Ijewereme and Dunmade, 2014; and Adeyemi, 2016). Furthermore, poverty is another factor causing corruption in Nigeria, people have a strong phobia for it and its manifestation have adverse consequences on individual's life because the majority of the citizens have relatively low economic opportunities and this economic hardship push them to corruption because they want to meet up with basic necessities' of life. Greed and flamboyant lifestyle equally contribute to corruption, in a situation where people for more wealth and live an extravagant life in order to impress or oppressed people. Meanwhile, lack of the political will of the government to enforce anti-corruption laws has led to increasing sharp corrupt practices, people are hardly held accountable for their responsibilities either in private or public sector. In addition, in the analysis of anti-graft or anti-corruption agencies performances, they have become toothless bulldogs that can only bark but cannot bite (Lipset and Lenz, 2000; Ulu, 2009; Oyinola, 2011; and Imhonopi and Urim, 2013). Similarly, Unequal distribution of resources is another factor, in a situation when the existing resources of the state are not prudently distributed among its citizens. Also, there is a high cost of living with low welfare services for the citizens and has led to corruption in order to have alternative means of livelihoods or sustenance (Lotterman, 2002; Ngwube and Okoli; 2013).

Therefore, it can be observed that corruption have serious manifestations to individuals and government because it affects every aspect of life and every sector of the nation. Corruption in Nigeria has different kinds of unappealing and grubby costume.

Corruption has taken the code of conducts in both private and public sectors. Corruption has manifested in the political system of the nation by taking different dimensions such as embezzlement or misappropriation of public fund, bribery, rituals, rigging of elections, violation of oath of office, among others. Corruption is perceived as a normal phenomenon in the political arena in Nigeria. It has also manifested in the activities of the security agencies like engaging in financial squander among the high ranking officers and the junior officers engage in extorting of money from road users and innocent citizens. In the area of sports, there been accusing fingers on the officials of collecting bribe from the players, therefore, players are not selected on merit except on extorting money and god-fatherism from them leading to indiscipline on the part of players. Many

Nigerians especially the younger people engage in the corrupt practice of internet fraud by scamming people using illegal means like hosting a website online and claim to be giving jobs to people and scam anyone that fall victim of their deception. They equally hack people's email, bank account among others and their victims have not limited to Nigerians alone other nationalities are victims of this incident (Oluwashina, 2013; Okolo, 2014; Tyoyila and Sunday, 2015; Adeyemi, 2016; and Storey Report, 2016).

Thus, corruption has become cancer that has eaten deep into the national structures of Nigeria with negative consequences on the socio-economic and political development and by implication; it has weakened the entire structures of the society.

### **5. Implications of Corruption on Development and National Security**

It can be observed that corruption has inflicted suffering on many Nigerians. Corruption has done a lot of damages to the Nigerian nation as well as having serious adverse consequences on the environment as well as on the development and national security. Thus, corruption is of no doubt a threat to development and national security in any given environment that is found like Nigeria because it has is established that corruption has led to emergence of the different forms of insurgencies and others social vices that are occurring such as Boko Haram, Niger Delta militancy, Fulani herdsmen - Farmers crisis, kidnapping, rape, armed-robbery just to mention few causing serious loss of life and property which has negative consequences on the environment as well as development and national security.

The various studies on the corruption-related phenomenon in Nigeria show that corruption has led to the exhaustion of the natural resources which in addition it has also led to the fall in the Gross Domestic Product (GDP) as a result of misappropriation and embezzlement of the public fund. It has also shown the way of poor governance and failure of providing the basic needs of life for the citizens, increased in the unemployment rate and poverty making citizens prone to corrupt practices as alternative means of living or surviving in the environment. Furthermore, corrupt practices have negative impacts on the development and national security such as low domestic and foreign investment due to corrupt practices which induce bureaucratic and other obstacles, leakages of the national assets to other nations due to money laundering, diversion of both domestic fund and foreign aids meant for development and national security. In the oil sector, for instance, corruption is the order of the day, refineries are deliberately grounded not to function in order to continue import oil for daily usage and government continue to pay subsidies that never benefit the masses except the cabals in the country. In addition to implications of corruption in Nigeria is the educational sector which has gotten its own share of the corruption, from primary to tertiary institutions is the misappropriation and embezzlement of fund for projects among those that the helm of affairs internally and externally, issues of examination malpractices has become the bane of Nigerian society, sexual harassment as well as extortion of money from students by teachers or lecturers among others. Similarly, the health sector is not left out in the corruption saga in Nigeria, drugs meant for patients free are sold, some of the health workers hardly report to work, come late or close from work earlier than expected, equally, money is extorted from patients and their family members (Ulu, 2009; Muhammed, 2013; Okolo and Akpokigbe, 2014; Onimisi, 2014; and Adeyemi, 2016).

Meanwhile, corruption has endangered the national security in Nigeria because the causes of the various forms of insurgencies and other social vices in Nigeria such as Boko Haram, youth militancy, ethno-religious violence, political crises, kidnapping, armed robbery, human trafficking and Fulani herdsmen and farmers crises among others causing destruction of lives and property as well as devastating the environment are all traced to corruption and poor governance, money meant for protection of lives, property, and environment are diverted by the government officials for their personal uses. It is also noted that the security agencies are not well-equipped, making it so difficult for them to curtail most of the insurgencies that are persistently occurring in the country which by implication a lot of human and capital resources are destroyed, the environment is polluted and Nigerian society is still counting its losses. In addition, recruitment, posting, and promotion of security officers are not done on merit thereby weakened the performances of the security personnel in Nigeria. In the same way, among the corrupt practices that is also noticeable in the activities of the security in Nigeria are engaging in financial misappropriation among the high ranking officers and the junior officers engage in extorting of money from road users and other innocent citizens which has negative consequences on the national security of the nation (Aliyu, 2012; Anyadike, 2013; Muhammed, 2013; Radda, 2013; and Okolo, 2014).

Therefore, there is no doubt that the threat and pervasiveness of corruption to development and national security cannot be undermined because it persists in every sector in the country and there is need to fight this social menace called corruption in order to have conducive environment through which Nigeria as a nation can attain development and restore national security of the Nigerian state for sustainable development. It can be established that due to corrupt practices in Nigeria that have caused high rate of poverty and unemployment making life difficult for the citizens, some of the young people have created alternative ways of making money such as vandalization of oil pipeline and oil bunkering, smuggling, among others causing pollution of the environment and having adverse effect on the development and national security of the nation.

## **6. Conclusion**

This study concludes that corruption is a social phenomenon that is found ubiquitously either termed developed or undeveloped, but nature, causes, and functions may differ from nation to nation. Thus, corruption is found in Nigeria, resources meant for development and national security for sustainable development have been embezzled and misappropriated making corruption to slow down the phase of development in Nigeria and it has equally impacted on the national security negatively due to high unemployment and poverty rate pushing citizens to commit or engage in series of crimes such as boko-haram insurgency, kidnapping, armed robbery, human trafficking, youth militancy, political crises, ethno-religious violence, and Fulani herdsmen and farmers crises causing loss of lives and property which has negative consequences on the environment. It is observed that some of the government officials in Nigeria are richer than the state due to their corrupt practices. Resources meant for development and national security for sustainable development have been embezzled and misappropriated. Therefore, provision of social welfare packages for the citizens is vital for the struggle against corruption.

## 7. Recommendations

This study recommends that moral values should be inculcated among citizens of Nigeria, the citizens should be provided with more enlightenment programmes on consequences of corruption on the development and nation security of the country. It further recommends that the anti-corruption law and institutions be reformed in order to strengthen their responses in treating corrupt cases easily for socio-economic and political development of the country for sustainable development in Nigeria. In addition, the government must ensure strict adherence to the code of conduct principles and avoid favouritism in handling the cases of corruption. Honest citizens should be recognized and be given traditional titles, national and international honours. In addition, provisions of basic amenities for the citizens are important tools in the fight against corruption.

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# DIFFERENT OCCUPATIONS, DIFFERENT COLORS: LINGUISTIC PERSPECTIVE

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## **Abstract**

*To name the term of color in each society is different depending on the experience and environment in the culture of people. The same color, people different cultures is named different terms. People with different occupations also see different colors according to their experience and environment. This article illustrate that the term of colors is related to its culture and society. The 11 colors from Berlin and Kay (1969), the 'evaluation of basic color terms' are will be tested with 12 Thai native in 6 different occupations; farmer, house keeper, security, nurse, painter, and monk. The finding found that the farmers will have more color references to their environment than other occupations. The women have terms of color than men and mostly term of colors are compared with fruits or objects of which are in their occupation.*

**Keywords:** color, Thai language, language and culture, color terms

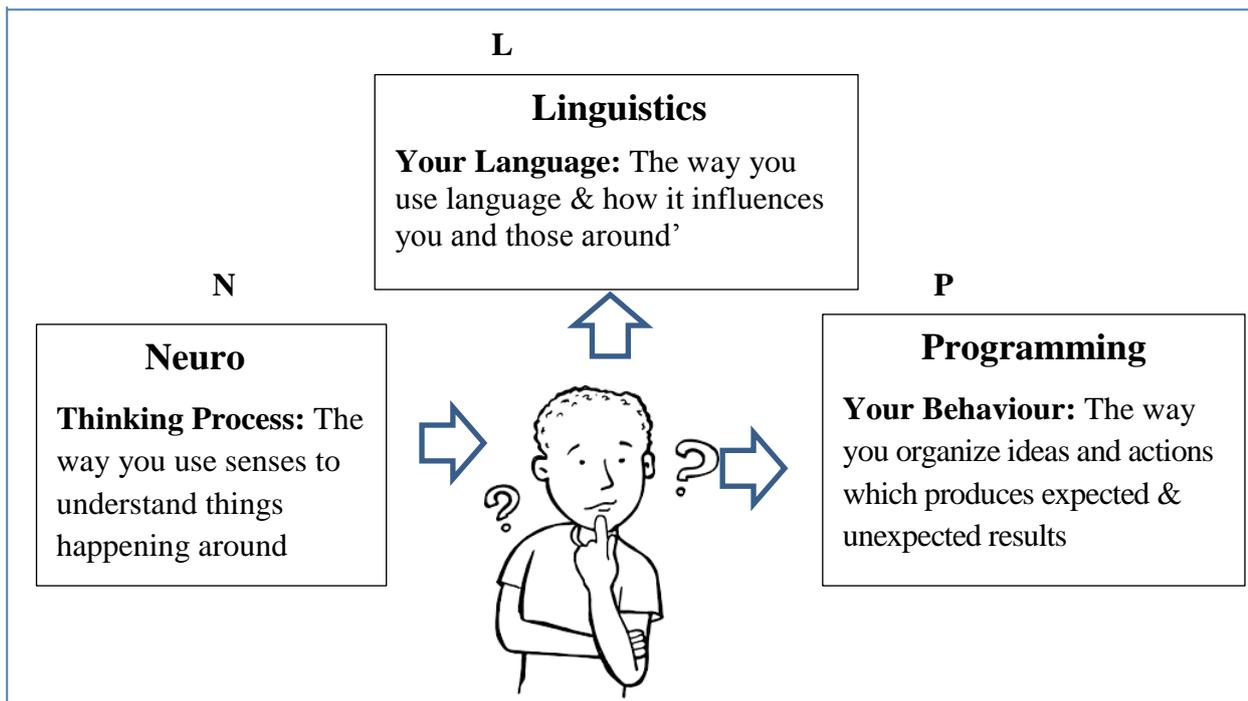
## **1. Introduction**

The concept of the relationship between language and thought is presented by many linguists. One of the references is Sapir and Whorf that they proposed that the way people think is affected by their native language. This hypothesis had widely studied into many languages and different data including color names.

Berlin and Kay (1969) wrote the book "Basic color-terms" to explain how different people in different societies and cultures use different reflective languages. Sapir (1988: 143-148) stated that language is a guide to our thinking. People do not live in this world like freedom but we live under the influence of language and society. How the language's characteristic is that the world view of the people in the society will be in the same direction, so when bilingual users differ their perception of the surroundings is also different (Kay and Paul, 1975). That is the language determines their choice. Conklin and Harold (1964) stated that culture and language are closed and people use their language differently from other cultures.

Amara Prasithrathasin (1995:2) stated that the color terms in any language reflect the natural perception and an environment around the speaker. It also helps to understand the meaning of the term itself and to understand speakers' world view. The speaker in the same language and similar societies, however, they terms of their colors are the difference because they work in different occupation and nature and environment their work differ from each other. If we would like to understand people's thought, one topic we can do is

how they present the color term in their culture and society and what are used to refer the color's perspective. This figure below shows how the language determines thought.



**Figure 1: Language determine though**

(Adapted from <https://funkyeds.blogspot.com/2017/02/does-language-determine-thought.html>)

The figure 1 above shows the relation between Neuro or thinking process, Linguistics or your language, and Programming or your behavior (Neuro, Language, Programming/NLP). That is people use language as medium of thinking process and use language to explain their ideas and actions. The terms that people call the color will concern to what their senses to understand the things happening around and use them to refer to the terms of colors.

## **2. Research Objective and Methodology**

### **2.1 Objective**

This research aims to present that people different occupations and genders have the different color-term perceptions. The Sapir and Whorf Hypothesis (1960) was used to be the frame work of this research.

### **2.2 Methodology**

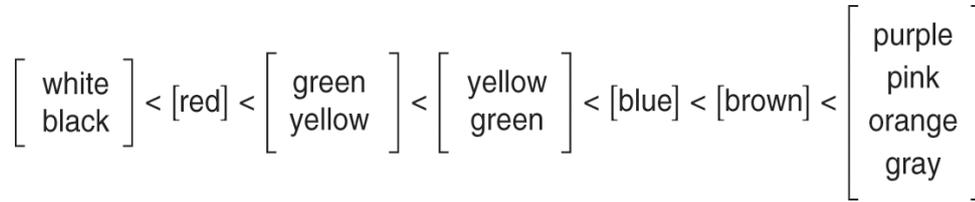
This research is qualitative research focused on color terms proposed by Berlin and Kay (1969) as the evaluation of basic color terms in figure 2. The 12 color charts; were questioned the 12 (6 women and 6 men) as the sampling group who are different 6 occupations living in Khon Kane city, the northeast region of Thailand.

Occupations: farmer, house keeper, security, nurse, painter and monk.

Color charts: White is number C1            Black is number C2

Red is number C3            Green is number C 4

Yellow is number C 5 Blue is number C 6  
 Brown is number C 7 Purple is number C 8  
 Pink is number C 9 Orange is number C 10  
 and Gray is number C 11.



**Figure 2: Evaluation of Basic Color Terms (Belin and Kay,1969)**

*(<https://www.cambridge.org/core/books/handbook-of-color-psychology/universality-of-color-categorization>)*

### 3. Research Results: The color terms in different occupations

People in each occupation will have kinds of what they do and it affects to their experience of color recognition is different to each other. The colors between yellow and green have much confusing to call in sampling group each occupation because they gave variously terms in no. 4 and no. 5.

#### 1) Farmers:



*(<https://www.phitsanulokhotnews.com/2014/06/13/53677>)*

*(<https://mgronline.com/crime/detail/9580000100658>)*

The farmers refer to the terms of colors closely to vegetables and/or fruits in their daily life including other kinds of plants and crops in different period. Mostly time of farmers work in rice field or vegetable field therefore they remind the color of surrounding things to compare the color in this research.

The ‘white’, the farmer gave more detail to compare or name this color with the plant having the color close to white such as; capoc, banana stalk pith, The ‘black’ was compared to the charcoal and soil. The ‘red’ was compared to blood, color from plant. The ‘green’ was compared to young banana leaves. In addition, this color was named by comparing to the part of animals color such as local duck’s head and hose’s feces in ‘green’. The ‘yellow’ color was named from comparing to ripe mango. The ‘blue’ was

compared to sky and flower given blue color and they use this flower for cooking. The ‘brown’ was compared to old haulm or rust. The ‘gray’ was compared to cinders. The other colors; pink, purple, orange were compared to fruits.

## 2) House keepers



( <http://www.betterclean.co.th/service/>)

([http://jobparttimehit.blogspot.com/2014/03/blog-post\\_26.html](http://jobparttimehit.blogspot.com/2014/03/blog-post_26.html))

The sampling group work as house keeper in faculty of humanities and social sciences, Khon Kaen University. They live and work in the city. Mostly the color terms in this research they names by comparing to the objects that they use in work such as color of cleanser’s packages, color of room or object in student class rooms or some parts in building of faculty in work’s area.

The ‘white’, the house keepers gave this color detail to compare or named with the objects having the color close to white such as; whiteboard, student’s T-shirt. The ‘black’ was compared to the tile in rest room. The ‘red’ was compared to blood and some plant. The ‘green’ was compared to cleanser package and leaf. The ‘yellow’ color was named from cleanser brand. The ‘blue’ was compared to sky and their uniform T-shirt. The ‘brown’ was compared to rust. The ‘gray’ was compared to smoke. The other colors; pink, purple, orange were compared to the objects in daily life and mostly package’s color of cleansers.

## 3) Security



(<https://rickerguard.com>)

(<https://www.kku.ac.th>)

The security of Khon Kaen University as one sampling group live near the university where will growing up to be the economic city of Thailand. They work in 3 period; start at

morning, evening, and night periods. Their way of life affects to use the color terms quite differently from the other occupation depending on kind of their job in their positions.

The 'white', the security gave this color detail to compare or named with the student's T-shirt, the line of road, and paper's color. The 'black' was compared to the night time. The 'red' was compared to blood and pen. The 'green' was compared to their uniform shirt and leaf. The 'yellow' color was named from ripe banana, the bin in university, and flower in university. The 'blue' was compared to sky and pen's color. The 'brown' was compared to rust and old tree close to their office. The 'gray' was compared to smoke. The 'pink' and 'purple' were compared to the flower's color in university. The 'orang' was compared to university's T-shirt or the university's color.

#### 4) Nurses



*(<http://www.bangkokbiznews.com/news/detail/754836>)*

*(<https://board.postjung.com/864704.html>)*

The nurses as a data sampling in this research have worked in Srinakharin hospital being a part of medicine faculty of Khon Kaen University. They use the terms of color related to their way of work such as color of objects in hospital or the colors of patient files.

The 'white', the nurses gave this color detail to compare their uniform dress and cotton to clean the wound. The 'black' was compared to plastic bag for bin. The 'red' was compared to blood. The 'green' was compared to leaf and grasses. The 'yellow' color was named from the bin's color being in hospital and ripe mango. The 'blue' was compared to sky and house keeper's shirt. The 'brown' was compared to rust and brown sugar. The 'gray' was compared to charcoal. The 'pink' and 'purple' were compared to the lotus's color. The 'orang' was compared to university's color.

#### 5) Painters



*<https://www.bloggang.com/mainblog.php?id=love-nann&month=>  
[https://www.winnews.tv/news/20977\\_23-01-2009&group=1&gblog=7](https://www.winnews.tv/news/20977_23-01-2009&group=1&gblog=7)*

The painters have much color of terms than the other occupations by use the name of color many brand especially color in their work. The interesting point in naming the color is they use the English language in order to explain specific color.

The 'white', the painters gave this color detail by comparing color of color bin and Thai uniform student's shirt. The 'black' was compared to their skin because they work outside. The 'red' was compared to blood and traffic light in red. The 'green' was compared to apple and TOA color brand. The 'yellow' color was named from the monk clothes and ripe banana. The 'blue' was compared to sky and color bin. The 'brown' was compared rust and wood to build the house. The 'gray' was compared to cinder. The other colors compare to the series of color in each color brand such as 'orange TOA' 'pink Captain'.

## 6) Monks



[https://commons.wikimedia.org/wiki/File:Buddhist\\_monks](https://commons.wikimedia.org/wiki/File:Buddhist_monks)



<http://www.rakboon59.com/product/18/ซองใส่แว่นตา>

Thailand is the land where people have way of life according to Buddhism way. The monks as the key person of Buddhism play an important role to Thais. Thais understand that the monks' cloth color is yellow and all of things in use and people donate also are yellow. The 'yellow' color therefore influenced their think and they call the other color into yellow.

The 'white', the monks gave this color detail by comparing to nun's clothes and Thai uniform student's shirt. The 'black' was compared to the monk's alms bowl. The 'red' was compared to the blood and cloth of the monk living in the forest. The 'green' was compared to coconut and its leaf because most temples have coconut trees. The color yellow was named from their cloth and the things used in temple or people donation. The 'blue' was compared to sky. The 'brown' was compared wood. The 'gray' was compared to cinder. The other colors compare to the flower surrounding the temple and the flower along the temple wall.

## 4. Summery and Discussion

The sampling group different occupations call the same color in differently. They give specific color detail by comparing to the environments; plant, vegetable, fruit, T-shirt and objects surrounding. The nurses and monks use their uniform clothes to name the color; white and yellow respectively as well as the house keepers and security use their uniform T-shirt to call the blue color. The farmers seem use the non-basic color terms by comparing the plants and rice in different periods than the others. The painters compared

the color with the color brands they usually use in work while the house keepers use the cleanser's package to name the colors similarly the nurse use the objects in their hospital to call the color.

This finding research is according to the Sapir and Whorf Hypothesis that language and culture are determined each other. However, people in similar culture use the terms of the same color differently by their occupations. In addition woman more explains specific color than the man.

In terms of color, 'white' mostly is compared to the T-shirt of Thai student uniform and nurse cloth. The 'black' mostly is compared to charcoal and objects related to each occupations; bin, monk's alms bowl, dark. The 'red' mostly is compared to blood. The 'green' and 'yellow' mostly are compared to fruits; banana, mango as well as monk's cloth. The 'blue' mostly is compared to the sky and T-shirt of the workers. The 'brown' mostly is compared to rust and wood. The 'pink' and 'purple' are compared to flowers while the 'orange' is compared to the university's color. The last 'gray' mostly compared to smoke.

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# ECONOMIC CITY AND NICKNAMING CHANGE OF LAO PEOPLE IN VIENTIANE LAOS PDR

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## **Abstract**

*The objectives of this research article are to describe the linguistic characteristics employed for nicknaming Lao people who have inhabited in Vientiane, Laos PDR. Interviewing as a data collection method was conducted from sample population, i.e., 60 Laotians, who were born and have domiciled in Vientiane Prefecture, were grouped into 3 age group as follows: Group 1 aged 41 - 60 years, Group 2 aged 21 - 40 years, and Group 3 aged 1 - 20 years. Each group, containing 20 people, was also divided equally by gender.*

*The results of this study revealed that Group 1 entirely assumes the nickname by using only one syllable whereas Group 2 and Group 3 have their nicknames with the formation of both one syllable and two syllables. As for the sources of nicknaming, it found that the most outstanding characteristic of Group 1 is to adopt their nicknames by modifying their real name into the diminutive form while the most dominant feature of Group 2 is to nickname according to physical features. And the most notable quality of Group 3 is to nickname by adopting English words. In regard to semantic formation of nicknaming, it revealed that the most outstanding characteristic in meaning of Group 1 is to adopt words representing physical features; Group 2 contains physically somaticized words, sound-symbolic words in English including English nouns; the most dominant feature of Group 3 is to nickname by using sound-symbolic words in English and English nouns with direct definition. Language change of nicknaming indicated in 3 sample groups mentioned, constantly resulting from economic growth since 1986 as Lao PDR opened its doors to international tourists and investors, considerably leads to foreign language and culture flow into Lao PDR and significantly has an influence in language usage for nicknaming.*

**Keyword:** Economic City, Language Change, Nicknaming, Lao People

## **1. Introduction**

It is argued that the language study through words employed for assuming a name of Lao people enables us to better comprehend the concept and belief of the local expressing through semantic alphabetic character. The researcher used to examine naming Lao people who reside in Vientiane Prefecture (Sarisa Unthanon, 2009) . Focusing on their real names, it was observed that naming practices of Lao people have also changed according to age group. It is also noteworthy that there are a wide range of studies on nicknaming in Thailand such as Nanthana Ronnakiat (1988) investigated the nicknaming

sources of students who studied at Department of Linguistics, Faculty of Liberal Arts, Thammasat University. It was found that there were 11 sources provided for their nicknames, namely, nicknaming based on milestones at birth, nicknaming based on expectation, nicknaming based on the order in which they were born into the family, nicknaming based on circumstances during pregnancy, nicknaming based on physical features of babies, nicknaming based on melodiousness of foreign words, nicknaming based on the first character in the father's, mother's, or sibling's name, nicknaming based on sex characteristics, nicknaming based on things that the parents like, nicknaming based on luck and the belief that our new name will bring good luck and nicknaming based on a contraction of their real name. Jarinya Thammachoto (1997), later studied on the language usage employed for nicknaming of Thai people in Mueang district, Trang province, focusing on phoneme, linguistic origins and meaning used for the local's nicknames by collecting data from sample population divided into 2 generations, i.e., parent's generation and children's generation. The result of this study regarding phoneme revealed that both generations assumed a nickname based on the same tone most, following by the same initial consonants and final consonants respectively. In connection with the linguistic origins, it was found that parent's generation come up with nicknames by employing Thai language most, whereas children generation, English words provide a more fertile source for nicknames than Thai words. In regard to connotation of nicknaming, it was revealed that both generations prefer to nickname based on physical feature connotation most. In 2002, Sutthasinee Chaikarn conducted a research concerning language usage used for nicknaming Thai people originating from varieties of ethnic group in Mueang Samut Sakhon, Samut Sakhon province, consisting of Central Thai, Mon, Tai Isan and Tai Song by investigating the linguistic origins, number of syllable, language and connotation of nicknames. It is found that the belief and values of each ethnic group expressed through nicknaming practices. It is also consistent with the results of the study of Charinya Thammachoto, i.e., in connection with the number of syllable, it is found that one syllable was used to nickname most, in regard to the language, it is found that Thai language was employed to provide their nicknames most, as for connotation, it is revealed that connotation concerning with physical feature of a person was used most to nickname. Based on the results of study, Sutthasinee demonstrated that different kind of ethnic group hardly had significantly difference in their belief and values for nicknaming owing to passing on culture, belief and values of Central Thai spreading to Mon, Isan and Tai Song already.

Based on the researches concerning nicknaming of Thai people mentioned above together with I used to conduct the research concerning naming the real name of Lao people (Sarisa Unthanon, 2009 and 2010), I significantly observe the change in naming according to age group, namely, the older people group assumed their names with fewer syllables than those of the younger people group. It is more likely that the younger people group employed Pali and Sanskrit to assume a name whereas the older people group preferred to use Lao words for their nicknames have been employed for their names. In addition, connotation that was mostly used to name Lao people has connoted to gold and precious and valuable objects more than other connotation in every age groups. The results

of studies on nicknaming mentioned above and the results of study on naming of Lao people (Sarisa Unthanon, 2009 and 2010) causes I as a researcher am very interested in conducting a research concerning nicknaming of Lao people that I am convinced that it reflects characteristics of language usage changes in the aspects of grammar and connotation compared with the study on naming the real name. It is because Vientiane prefecture as the capital city of Laos, has dramatically changed since 1986 with the open door policy; witnessing mountain of increasing skyscraper and tall buildings, modern department stores, shops, restaurants in the western styles appearing a wide range signs written and printed in English or dually English and Lao letter on it, including influences from mass media like radio, television, printing media as well as digital media flocking to Lao PDR considerably, regardless of necessity of learning English for Lao people to seek a better job to catch up with the rapid economic growth and to meet labor demand that English communication skill. I thus assumed that these growth and development economically and socially may lead to create values of English usage for Lao people including values of adopting English language to nickname for their children. I have tried to seek the findings by collecting data conducted from interviewing sample population who were 60 Lao people and domiciled in Vientiane prefecture, dividing into 3 group of age as follows: Group 1 aged 41- 60 years, Group 2 aged 21-40 years and Group 3 aged 1-20 years. Each group, containing 20 people, was also divided equally by gender, focusing on characteristics of language usage for nicknaming, syllable structures, sources of nicknames, including connotation of nicknames.

## **2. Characteristics of language usage in nicknaming and the meaning of nickname**

As for the structure of number of syllable, it revealed that there are 2 types of syllable structure found in Lao people's nickname residing in Vientiane prefecture, i.e., one syllable structure and two syllable structure . The one syllable structure that is found most in the formation of nicknaming is the one syllable structure such as Tui, Joi, Noi, Lek, Yai, Lee, Chan, Phan, Wan, Boun, Son, Aud, Khid, Kan, Phon, Mae, James, A, Moon, Jan, etc. and following by two syllable structure such as Tukta, Tudtoo, Zicko, Dodo, Jonly, Didi, Julie, Jiji, Mini, Nova, Panda, E-bay, Cherry, etc. When examining syllable structure based on 2 social factors, that is to say, age and gender, it is thus found that the age plays the significant role designating the syllable structure of nicknaming; two syllable structures is considerably found more in senior people group than younger people group. Whereas gender factor hardly influences syllable structure as the data found indicates that male and female people assume their name equally in both one syllable structure and two syllable structure.

There are mostly popular sources provided for Lao people's nicknames sorting these four popular sources in order from most to least: 1) Nicknames based on a shortening of a person's proper name such as Thonglee-Lee, Thongchan-Chan, Khamphan-Phan, Suwan- Wan, Wannason-Son, Sukan-Kan, Khonsawan-Wan, Saengphet-Phet, Maneewan-Wan, Sisomphon-Phon, Suwanna-Na, Tingkham-Ting, Wannason-Son, Uttha-Ut, Khamphon-Phon, and so forth. 2) Nicknaming based on physical features such as Joi (thin), Noi

(small), Tui (fat), Lek (small), Yai (big), Lae (purple-blue), Ngon (round head), Le (soft), Tadam (black eyes), etc. 3) Foreign words are taken straight from English names, such as May, James, A, Moon, Jan, Mini, Nova, Panda, E-bay, Cherry. And 4) Nicknaming based on English sound articulation such as Jonly, Didi, Julie, Jiji, Dodo, Toto, Jojo etc.

With respect of nickname meaning based on employing age as a variable factor, it is found that Group 1 prefer to adopt words connoting physical feature of children most such as Joi (thin), Noi (small), Tui (fat), Lek (small), Yai (big), Lae (purple-blue), Ngon (round head), Le (soft), Tadam (black eyes), etc. whereas Group 2 prefer to adopt words connoting physical feature semantics and English sound articulation most such as Lek (small), Yai (big), Jonly, Didi, Juli, Jiji, Dodo, Toto, Jojo, Jonly. On the other hand, Group 3 prefer to adopt English nouns with direct meaning most such as May, James, A, Moon, Jan, Mini, Nova, Panda, E-bay, Cherry.

### **3. Epilogue**

Nicknaming of Lao people has significantly changed all the time up till now. In the past, there had been no nicknaming practices in Lao society; a proper name or real name's person denomination only has been available. Influenced by Western languages and tradition of nicknaming, Lao people then has adopted nicknaming practices for their children. Initially, contraction of their real names had been done, and then nicknaming practices gradually have been not related with a person's real name. Nicknames for Lao people usually contain only one syllable owing to easiness and expedience for calling but at the present, nicknaming based on two syllables has increasingly been common. Nevertheless, nicknaming based on only one syllable has still been popular and it is noticeable that transliteration of foreign words has considerably made trendy particularly it has been adopted by most people who live in area of capital city municipality; Vientiane, the place in which I collected data for conducting the research. Experiencing the constant economic and technological growth as the center of country's development, Western languages and cultures unavoidably have influenced nicknaming by adopting foreign languages as the nicknames for their children. As referred to data conducted from interviewing native speakers, they give reasons why they prefer to nickname their children by using English words because they think that it sounds more modern and the euphony of English sound articulation as well as parents in general have a sense of pride when calling their children with nicknames originated from English words because it is associated with higher social status

The results of this study thus indicated that rapid economic growth in a row in Lao PDR significantly brings about changes of Lao language. It is also evident that language usage for nicknaming reflects changes in values of nicknaming of Lao people, for instance, using increased number of syllables for nicknaming, including sources of nicknaming based on increasingly changed factors ranging from older to younger generations. Increasingly, foreign languages, particularly English words, providing a fertile source for Lao people's nicknames, are considered as the new culture of Lao people nowadays, as well as values of connotation contained in Lao people's nicknames have also considerably changed from past to present.

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# LEVELS AND FACTORS AFFECT ON THE RESPONSE TO DEPRESSION OF BUDDHIST IN HUE CITY

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## Abstract

*This study aims to investigate the extent and factors that influence on the response to depression of Buddhists. The study was conducted on 150 Buddhists, 78 of them male and 72 female. Buddhists between the ages of 18 and 25, who are pupils, students or have been working. The results of the study show that, overall, the depression level of Buddhist monks in this study was lower than the level of youth depression in some of the available studies. Of these, the women have higher levels of depression than men. In addition, working-class Buddhists have slightly higher levels of depression than those who are unemployed and educated.*

*On the other hand, in the factors affecting the response to depression of the Buddhist religion, the support factor from the temple chosen by Buddhists is higher than other factors.*

**Key words:** depression, Buddhist/ Buddhist believer/ Buddhist follower.

## 1. Opening

The more modern the society is, the faster the pace of life is. In the one hand, development leads to better living conditions, on the other hand it leads to stressors for all. Most alarming is that stress is on the rise in adolescence. Alvin Tofler figures out that "rapid and rapid social fluctuations are the stressors of modern depression." (2) (According to Dang Phuong Kiet (2004)

According to the World Health Organization (WHO), depression will become the second leading cause of labor disability in the world by 2020 and is the leading cause of disability among women. Chiu (2004) infer to the incidence of depression within a month ranged from 1.3% to 5.5%, in the past year from 1.7% to 6.7%, and the incidence of depression in All life from 1.1% to 1.9% on average 3.7% lower than in many parts of the world. In Australia, while in 2012 the rate of depression in the 18-35 age range is 7.98%, but by 2013 it has increased to 8.72%. (6) (According to Chiu E. (2004), "Epidemiology of depression in the Asia Pacific region", *Australas psychiatry*. In some Asian countries such as China, according to Chen, the depopulation rate in the elderly over 60 years in rural areas is 6% in the capital region is 3, 6% (5) (According to Chen R (2005), "Depression in older people in rural china").

In Vietnam, according to various studies on depression so that the incidence of depression in the community is about 3 to 8%. According to Nguyen Van Siem (2010)

study in Quat Dong, Thuong Tin, Ha Tay (old), now is Hanoi show that the incidence of depression is 8.35% of the population over 15 years old. According to Ho Ngoc Quynh (2009), depression in nursing and public health students in Ho Chi Minh City shows that the prevalence of depression among public health students is up to 17.6% At nursing students is 16.5%. (3; 4).

Thus depression can be a mental illness, irrespective of age, economic circumstances, race, gender, etc. Depression has a negative and persistent affect on both mental and physical. So far, there are quite a number of studies on depression. But most are directed at pupil, students, workers and employees. Few studies have focused on depression on Buddhist. On the other hand, the studies focus on the level, expression and cause of depression with little attention to coping. Therefore, the proposed measures are inadequate and not close to the object.

Buddhist is knowledgeable about Buddhist teachings, living and working according to religious standards. To assert themselves in the family, school and society, Buddhists have been promoting their creativity, enthusiasm in life. This has helped them adapt and promote their inherent capacity before the power of development as the storm of the times. This is a positive point that Buddhists have shown and lived in the spirit of "grace" of the Buddha. Besides, there are still some young Buddhists who have little experience in life. They cannot solve their problems thoroughly to balance their way of life. It is this easy for Buddhists to fall into a state of stress and depression.

However, at present, in Vietnam and in the world, the study of the depression of Buddhist has not been properly considered. It can be asserted that the research topic should be given more attention.

## **2. Research method:**

### ***2.1. Researchers***

The project was carried out on 150 Buddhist in Hue city, Thua Thien Hue province. Buddhists at the aged of 18 to 25, consisting of 78 men and 72 women, are currently pupils, students and working people. Most of the research subjects are local people and a few from other provinces come to join the Buddhist families.

### ***2.2. Data collection tools and implementation process***

Research on the use of Depression (DASS) by Lovibond and Lovibond (1995). The scale consists of 42 sentences, three-dimensional, depression, anxiety and stress, each of 14sentences. Buddhist are asked to determine their level of occurrence in the last "week" of the manifestations / events on a four-level scale from "absolutely not happening to me" (respectively With 0) to "Very often happens to me, almost always happens" (corresponding to 3). The scores are calculated as the sum of the points of each sentence. On the face of depression, the score from 0 to 9 is Normal, from 10 to 13 is mild depression, from 14 to 20 is moderate Depression, from 21 to 27 is Depression and greater than or equal to 28 is Feeling very heavy.

Besides, the study also used a questionnaire, which required the researcher to provide some personal information such as age, gender, and severity of depression. The questionnaire was developed through interviews with experts and references to some published works. The questionnaire was tested with 60 Buddhist belongings to Buddhist families in the study area.

Data were analyzed using SPSS 16.0 software.

### 3. Results of research:

#### 3.1. Levels and Factors Affecting Coping with Depression

##### 3.1.1. Depression level

The average score of the DASS scale of the CNF is 8.5, which is equivalent to the average Australian cohort score of 8.72. (According to *National psychology week is an initiative of the Asustralian psychology society*)

The score of the DASS scale is shifted to depressed levels based on reference to the DASS standard table, which consists of five levels: (1) Normal; (2) mild depression; (3) moderate depression; (4) severe depression and (5) very depression. Using frequency analysis in SPSS 16.0, we obtained the number and ratio of Buddhist monks in Hue city at five levels of depression as shown in **Table 1. The number and percentage of lay Buddhists at depressed levels**

depression	number	Percentage
Normal	91	60,7
Mild depression	27	18,0
Moderate depression	24	16,0
Severe depression	8	5,3
Very deprssion	0	0,0
<i>Total</i>	<i>150</i>	<i>100,0</i>

Table 1 shows that, in general, the majority of Buddhists believe that their own depression is normal (60.7%). Actually, when contact, observation and conversation with Buddhists in some pagodas in Hue city, we realize that: Most of the faithful have spiritual life quite stable. Some of them share, the most tired moments are when they see the value of the chanting, listening to the Dharma and meditation practice. According to them, practicing these methods helps their minds to balance back. At the same time, they have the confidence to self-solve the obstacles in life.

In addition, the total Buddhist was mild depression levels, moderate depression and severe depression of 59/150, accounting for 39.3%. This result shows that many Buddhist are showing signs of depression. The depopulation rate of this study in our study was similar to that in the Australian study (also using the DASS scale) in 2013 for the study population aged 18-35, Is 37%. (10) (*According to the National psychology week is an*

*initiative of the Asustralian psychology society*). However, the rate of Buddhist depression is much heavier and much worse than that in Australia. The severity of severe depression is 5.3% and very severe depression is 0.0%, while in Australia the rate of severe depression is 6.4%, and severe depression is 7.1%. This difference may be related to the cultural, religious and age factors of the two study groups in the two studies.

In Nguyen Ba Dat's study on depressive disorders and some psychosocial factors related to secondary school students in Hanoi, 18.8% reported depression and 9.1% confirmed as depressive disorder. (1) (According to Nguyen Ba Dat (2002), "Depression research in high school students in Hanoi)

Thus, it can be seen that the level of depression of Buddhists is assessed by the DASS scale is not high. In today's society, depression occurs quite frequently in life, but in the phthisis, the disease is less common, with the majority of Buddhists who are not depressed or depressed on a light level. However, with the number of depressed Buddhist monks, finding out the causes of depression, coping with depression to help Buddhist faithful reduce the level of depression is still essential and necessary

### **Correlation between depression levels and coping strategies**

When examining the correlation between depression and coping strategies, we found that the Pearson factor shows a positive correlation in some groups of coping strategies but is not closely.

**Table 2. Correlation between depression levels and coping strategies**

<b>How to cope</b>	<b>Depression level</b>
Problem-solving planning	0,22**
Separating yourself from the problem	0,25**
Give up the effort to cope	0,29***

The result from Table 2 shows that the level of depression correlated positively with two groups of positive responses: Problem-solving planning and self-exclusion. That is to say the higher the level of depression is, the more the Buddhists try to solve the problem and isolate themselves from the problem at a higher level. In addition, the level of depression is also positively correlated with a negative response group that is abandoning the coping effort, which means that the higher the level of depression is, the more Buddhist abandons response effort higher.

#### *3.1.2. Social support*

There are many subjective and objective factors that govern the response of the Buddhists. In this study, we chose three basic supportive elements that were supported by family, friends and pagodas.

##### **a. Support from the family**

The results of Table 3 show that the level of family support judged by the Buddhists was above average (TBC from 2.29 to 2.57).

**Table 3. Support from the family**

Numerical	Support from the family	Average	Order
1	The family is always there	2,33	3
2	The family is always looking for help	2,39	2
3	Family support decision-making	2,57	1
4	I often confide in my family	2,29	4
5	Total	2,4	

One of the characteristics of Asian culture is that even though the children are grown up, the family is always the shield to shield children. In many studies, families are the most important social support for adolescents coping with stress. Sharing, confiding, listening to family tips helps teens see the issue positively, accepting the hardship and accepting reality. Not only will adolescents see positive issues, but family support will also provide the physical and mental support needed for adolescents to solve problems.

Although the family is a strong social foundation that helps teens improve their internal adaptive capacity, they become more braved to face directly, eliminating the cause of depression as mentioned above. In this study, family reliance was judged lower than the support of friends and temples by Buddhists. While families often support the Buddhists in making decisions, there is little place for them to confide or simply let them feel that they have family next to them. This is an issue that needs to be investigated further, since Hue is a city that still holds many traditional values, including the bond between family members. The next study should clarify how to attachment to family change in today's society and if that cohesion persists, why does not the Buddhist layman appreciate it as Social support.

#### **b. Support from friends**

The results of the analysis show that Buddhists who value high levels of support from their peers often use more coping strategies to seek social support. The results of Table 4 show that the average of the support from friends is quite high (Average = 2.65), ranking second in the three groups of factors. It is clearly to say that this is indeed the age often attach importance to friends in their activities, work, study.

**Table 4. Support from friends**

Numerical	Support from friends	Average	Order
1	Friends always encourage	2,77	1
2	I can rely on friends	2,43	4
3	There are people whom I can share	2,73	2
4	You are especially interested	2,66	3
5	Total	2,65	

Our findings are consistent with those of Firth (1989), Barba et al. (2004). These studies have shown that friendships with other specialists such as teachers, lovers ... are closely linked to the use of "seeking social support" responses rather than family support. We can explain this as follows: In adolescence, Buddhists are heavily influenced by friends

and lover. Sharing, confiding and learning among peers is often more favorable because they have psychological characteristics and face the same difficulties. Moreover, the causes of depression for Buddhists are related to learning and relationships, so Buddhists often seek the support of friends and teachers rather than their families.

The role of friends often only stops at listening, sharing difficult circumstances, not help the faith of Buddhism directly solve the problem. To explain this, many authors say that with limited life experience, limited financial and physical capabilities, it is difficult for friends to help their peers remove the depressing factor (Firth, 1989).

In addition, more importantly, Buddhists who have strong social support do not shy away from meeting people or withdrawing from depression. It was the social support that helped the Buddhists to be more open, willing to share their emotions and mood. This is very important because it avoids the possibility of more severe depression when individuals withdraw themselves and silently tolerate stress.

### c. Support from pagoda

The survey results show that the pagoda is the social support that Buddhists often rely on to find peace and this is the most important social support of the Buddhists. In this "pagoda, monastery where I can drop my soul in peaceful moments, relax when experiencing the failure of life" is chosen most by Buddhist (2,81%). Besides, the confidant with the Buddhist brothers and sisters, being in harmony with the Buddhist family and the Prayer is evaluated at a higher level than the average.

**Table 5: Support from pagoda**

Numerial	Support from pagoda	Average	Order
1	Talk to the Buddhist brothers and sisters	2,75	2
2	Talk to the monk in pagoda	2,46	6
3	Peace in the Buddhist family	2,74	3
4	Temple helps me peacefully	2,81	1
5	Lecture helps you find yourself	2,59	5
6	Pray	2,73	4
<b>Total</b>		<b>2,7</b>	

This shows that religion is a firm support, a place to turn to rely after the failure, grief in life. This is confirmed by researchers at the University of California (2004) "Students who are involved in religious activities may have better mental and emotional health than others." In 2006, a study conducted at the University of Texas found that the more often a person goes to church or temple, the higher the age gets. The same conclusion was repeated with the study of 2000 people in California for five years in a community health project. The study found that people who go to churches and pagodas have a 36 percent higher rate of morbidity, mortality, and coping with difficulties than non-religious ones.

There are many reasons why religion has many benefits to human mental health. Chaeyoon Lim said that the time to visit churches and temples would help people have a

wider social network, with more support. This will help individuals have a positive view of life as well as feel supported when needed. Through which to see, each object has a different expression and refuge when experiencing the failure, grief, difficulty in life. This gives the researcher an overview of the appropriate impact measures. On the other hand, this result shows that the power of religion can transform suffering so that people can confidently face the difficulties ahead.

To sum up, from the results above, the level of support from the temple is selected by the Buddhists and the highest application compared to other support. This suits the missionary role of spiritual activity. The view of the Buddha is "to serve beings means offering the Buddha." It is religious beliefs and religious rituals that teach people to accept and to help people overcome the hardships of life.

#### **4. Discussion and conclusion**

Depression is a topic that many psychologists consider. In addition to the theoretical studies on depression, many studies have focused on the development of tools for assessing the severity of depression, thereby helping to reduce depression among people with depression. In Vietnam there are quite a number of studies on the severity of depression among different groups of people, pupils, students and workers. However, very few studies focus on the problems of Buddhism's depression, especially in adolescents. Therefore, the results of this research are scientific and practical significance, providing the necessary facilities for psychologists and those interested in the quality of life of the Buddhists, for identifying the direction of support activities, to reduce the level of depression, improve the quality of life and morale of the Buddhist religion.

At present, the tools for measuring and diagnosing depression are quite diverse. With the advantages that the scale is based on standards defined by professional systems such as DSM-V, ICD-10; DASS is appreciated by many researchers and practitioners. The DASS has been introduced and used more in Vietnam and demonstrates the ability to accurately assess the stress, anxiety and depression of the Vietnamese.

In general, the results of the assessment of the depression of youth in Hue City with the DASS are consistent with those of Australia in 2013. The level of depression in this study is lower than the results obtained in other studies of depression among Vietnamese youth.

Among the factors affecting the response to depression, the level of support from the temple was selected and the highest applied compared to other support. It is religious beliefs and religious rituals that teach people to accept more and thereby help people overcome the hardships of life.

Although the proportion of Buddhist with moderate and severe depression, attention should be paid to the problem of Buddhism. In the one hand, it is necessary to prevent the incidence of depression among young people, especially the proportion of moderate depression and severe depression. On the other hand, support the depressed Buddhists to respond effectively to depression and timely intervention to reduce the level of depression as well as the negative consequences of depression on physical health, wellbeing and their activity.

The Buddhist Church of Thua Thien Hue Province, Buddhist families should pay attention to the following:

It is necessary to raise awareness and understanding of depression and coping with depression for the heads and the Buddhists, through journals and communication activities. In addition, the activities, catechesis should integrate the content of depression and coping with depression so that Buddhists know and prevent.

The programs of exchanging and cooperating among devotees are organized and developed in a positive and practical way so that people can learn, share and help one another overcome the difficulties in life.

Support and teach some methods of application of meditation - Therapeutic Buddhism for learning and practice.

The managers of Buddhist institutions need to know the personality and psychological evolution of the abnormal Buddhist followers to have timely intervention and support.

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# SKIPPED - GENERATION FAMILIES: RURAL LIFE IN THE NORTHEAST OF THAILAND<sup>1</sup>

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## **Abstract**

*This paper investigates ways of life of skipped-generation families in rural north-eastern Thailand. Qualitative methodological approach was implemented in the study. In-depth interview was used as research instrument to collect data from two groups of key informant including 1) community leaders, community seniors, and community committees, totally seven persons, and 2) skipped-generation families living in rural north-eastern region of Thailand, totally 7 families. Data analysis was done by content analysis method.*

*Research results found that coexistence of skipped-generation families occurred due to migration of family member. When labour-aged member migrated to work outside community, grandparents and grandchildren stayed together with different attitudes of living. Some grandparents thought that raising grandchildren was a hard task especially in families with many grandchildren, and it negatively affected health condition. However, the study indicated division of roles within skipped-generation families. Each family member had own roles clearly, and it resulted in they were able to maintain internal relationship smoothly. In addition, most skipped-generation families sometimes needed support from neighbours to sustain their livings.*

**Keywords:** Skipped-generation families, migrant workers, community, rural life

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## 1. Introduction

"Grandparents raising grandchildren" has currently become a phenomenon that can be found in rural north-eastern region of Thailand. Children's parents have migrated for jobs in other areas for long time, and have left children with their grandparents. Thai scholars consider this type of family as "skipped-generation families" (Pothisita, 2009). It is generally found different attitudes of living between grandparents and grandchildren in skipped-generation families due to life experiences. Grandparents have more experienced than the younger ones, and it results in different thoughts and attitudes among them (Champaklay, 2013). However, the differences among two-generation family members might cause some family problems. The misunderstanding between grandparents and grandchildren probably provides negative impact to child development. Children who grow up with such families might cause social problems (Sri-Reungla, 2006).

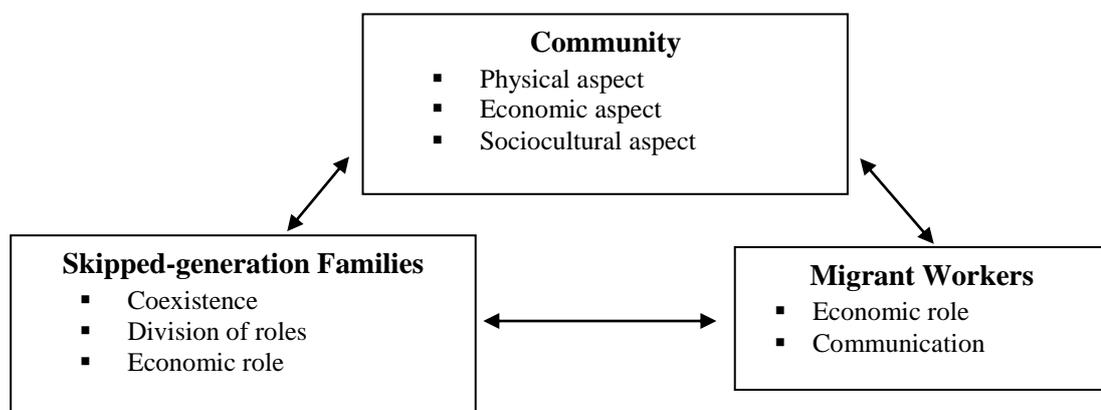
Moreover, it was found that the division of family role in skipped-generation families, that have grandparents who have lived in pair, mostly rely on gender role. Male grandparents mostly are represented as the family heads who are responsible for socio-economic roles of family, while female grandparents have been given the role of raising their grandchildren. Sometimes female grandparents urge that raising grandchildren is a hard situation, which obstruct them to do other family tasks. A full-time children caregiving task affects health condition of the caregiver because caregivers have to focus on their grandchildren for several consecutive hours, so they have no time to rest. Those grandparents with serious diseases such as diabetes, blood pressure, and heart disease, might be in trouble if they have hard time to raise grandchildren (Jiyuan, 2008) In addition, skipped-generation families probably has coped with economic issue within family, since they have to bear migration expenses for those who work abroad. The family have to live with a debt in hardly situation, and it results in low economic security of the family (Boonkwang, 2016)

According to situation in skipped-generation families above, research question is set up on how does skipped-generation families in rural north-eastern Thailand live? Concept of status and role (Parsons, 1968) has been implemented in the study. Talcott Parsons (1902 - 1979) has introduced his idea about "system of action" in term of socially context. Society is the context in which action and status of individual are determined by social structure. Status and role of individual are interrelated each other within a single unit of society. Parsons named this interaction as the social system (Parsons, 1968). Parsons's social system presents four basic functions including 1) behavioural organism that is the varieties and processes of biological activity, 2) personality system is actions of individuals in a systematic manner, 3) social system is a system determining actions of individuals who have different social status, and it is regulated by cultural framework. Lastly, 4) cultural system which regulates social regulations (Chantavanich, 2009).

Individual value can be constructed by two patterns which are 1) social norm that oversees individual's behavior to reflect common values and 2) the belief systems of culture. Values and other related elements may become part of personality system which

response the needs of the system, and it determines the willingness of individual to serve their social roles and status. Thus, it can be concluded that institutionalization is the process that constructs social structures. Roles of individual would be grouped, and become the sub-system within a large social structure. Therefore, it can be concluded that human society is a large system which consists of many institutions. It is important to concern cultural framework and interrelationship among personality system when analysing social system.

This paper investigates ways of life of skipped-generation families in rural north-eastern Thailand based on a framework which interrelates among skipped-generation families, migrants, and community. Implication of research was expected to enlighten ways of life of skipped-generation families in rural north-eastern Thailand, and to recommend a proper guideline which supports the coexistence of skipped-generation people within family. The research conceptual framework is as follows a figure 1.



**(Figure 1 Research Conceptual Framework)**

The conceptual framework of the study indicates interrelates among skipped-generation families, migrants, and community based on Parsons's System of Action (1968). Social context is the context in which individuals who have own roles, and their actions would be performed according to the status quo. The status and roles are interrelated each other and become sub-system within a large social system. Therefore, society and community are responsible for determining individual's status and role. Family is one of the social unit which contains sub-element, which is family member and their migrants. Community, skipped-generation families, and migrants have systemically interrelated to each other, and are able to determine roles and status among family members. For instance, the community has its own social system in order to care for grandparents or the elderly. This pattern becomes social norm which determine that children shall take care of their parents or grandparents when they are getting old. According to Globalization context, however, some unpleasant circumstances force children who are labour-aged to work outside their home for a long time, and leave their grandparents alone or stay with their grandchildren. This results in value of the elderly care has been reduced.

## **2. Method**

This research is a qualitative research. Research area is Olo Village in Phu Kwiew District, Chaiyaphum Province due to the fact that this area is one of the largest migrant population city in north-eastern Thailand, and there are a great number of skipped-generation families. Unit of analysis is family and community. Key informants consisted of seven skipped-generation families which had international migrants. In-depth interview and non-participatory observation were applied as research instrument. Interview guideline contained several questions in regard to coexistence, roles and functions within family, interrelationship with migrants, and interrelationship with community. While community-based informants consisted of two community seniors, three community leaders, and two community committees, totally 7 persons. Interviews were conducted to access the community contexts such as socio-cultural context, economic context, community history, and dynamic of family structure that might affect ways of life of skipped-generation families in rural north-eastern Thailand.

The content analysis method was used to analyse data. The analysis considered three elements (Miles and Huberman, 1994) included 1) data organizing is a process of organizing data in easily store and use, and categorize data content into groups systemically. 2) Data display is the process of presenting research findings. The process concern validity of data which in line with social phenomenon. 3) Conclusion, interpretation, and verification is a process of concluding research findings based on interpretation and data verification to consider relationship with social phenomenon. These analysis processes would explore ways of life of skipped-generation families in rural north-eastern Thailand, and it would be a guideline for enhancing sustainable happiness among family.

## **3. Results**

Results of the study were divided into two parts including 1) community background; which consisted of physical background, economic background, and socio-cultural background, and 2) ways of life of skipped-generation families; which consisted of coexistence of the family, division of roles and status within family, economic roles of skipped-generation families, and roles of migrants and community toward skipped-generation families.

### ***3.1 Community background***

According to community senior's narratives about the history of Olo Village, the community has established in 1801 or about 217 years ago. The community was settled up by a couple named Mr.O and Mrs.Lo, the travelers, who stopped by at this area. They observed a variety of natural resource in the area, for example, creek wild plant, and a hundred of cattle. They agreed to settle community here, and then they convinced neighbors and relatives to settle home at Olo area. Years later, the community was expanding, since more people immigrated to Olo community. Olo Village then was separated into three communities included Olo Moo. 1, Olo Moo. 10, and Olo Moo. 11. Olo Village nowadays has been established as a Sub-district in Phu Kiew District, Chaiyaphum Province.

Landscape of Olo Village is a flat plain surrounded by sparse forests and mountains. Landscape character is sandy loam, which is suitable for crop cultivation. A big pond named “Nong Haew” located nearby community. It is a vital water resource for people in Olo Village and communities nearby in terms of agricultural activity and daily consumption. In addition, “Prom” River, which flows from Chulabhorn Dam into Olo Village, is another water source that supports agricultural activity in Olo Village throughout the year.

Regarding community economy, the community has originally conducted agriculture. In 1957, people in community started growing sunhemp (kenaf) since it was very popular among farmers over northeastern region. The circumstance caused a change of production mode from subsistence production to commercial production. Later, in 1987, the sugar mill set up at Phu Kiew District. Farmers decided turning their rice farms into sugarcane farm in order to support production capacity of the sugar mill. Sugarcane nowadays becomes economic crop which provides cash and career opportunity to the community. In 2005, a number of farmers brought rubber to grow in Olo area due to high rubber price at that time. However, there are few rubber farms in the area due to low rubber price issue, and farmers turned back to grow sugarcane.

Socio-cultural background of Olo Village is based on locally northeastern tradition named “Heed Sib Song Kong Sib See”. People has set up religious events every months throughout the year. However, more people in Olo Village have been moving out of the village for works. The events, therefore, occur in some months. In addition, Loy Kra Tong traditional event is another major event in Olo Village. There is a beauty contest by recruiting the elderly or girls instead of the adult to join the contest. This is an opportunity for groups of people to participate in community activities.

### ***3.2 Ways of life of kipped-generation family***

Skipped-generation families in rural north-eastern Thailand consisted of two generations of family member, grandparents and grandchildren. Two generation-family members lived together since the labour-aged parents of grandchildren migrated out of community to find jobs in major cities or overseas. Migrants would send remittance back to their family at origin area, while grandparents took responsibility to raise grandchildren. It can be said that this was an internal agreement within family and, it was a remuneration for skipped-generation families in rural north-eastern Thailand.

#### **Coexistence of skipped-generation families**

Coexistence of skipped-generation families in rural north-eastern Thailand were similar in living styles. There were 2 generations of family member stayed together. Grandparents, who lived in pair, would normally raise grandchildren except some of them died or divorced. Most of the family had more than one grandchild. When parents had a second child, they decided working outside community because they did not have money enough to spend for living expenses. Parents needed to migrate to work elsewhere to make money. However, raising grandchildren by grandparents might cause some problems

within family especially on attitudes and ways of life between grandfather, grandmother, and grandchildren. Grandmothers often had a simple lifestyle. They were not ambitious, and were not extravagant. While grandfathers, who acted as family head, would sometime showed the leader's behavior. For instance, they bought some luxurious objects such as cars or agricultural vehicles. When their grandchildren wanted to buy mobile phone, motorcycle, some electronic devices, grandmother often denied responding grandchildren's need because grandmother thought it was unnecessary and extravagant. If grandchildren were still stubborn to buy it, grandmothers might punish grandchildren in order to stop them to think about buying the item. On the other hand, grandfathers usually supported grandchildren's need because they thought it was necessary to buy. Everyone should have mobile phone or others to use in daily life. In addition, grandparents and grandchildren often had different views of the time of learn and play. It was found that a number of grandchildren usually played mobile phones all the time. They played games, and watched videos from YouTube. Grandparents considered that these activities were not beneficial to their grandchildren. It was just a recreational activity, so grandparents often allowed their grandchildren using mobile phones 2-3 hours a day. However, grandchildren thought playing mobile phones encouraged them to access news or information, and to make friends on the online communities. Sometimes they used mobile phones to search knowledge during they were doing homework. Due to different views among two generations, it caused misunderstanding among them sometimes. It was one of family's ways that contributed family members of skipped-generation families understood each other.

### **Division of roles in skipped-generation family**

The division of roles among skipped-generation families was often divided base on gender aspect. For instance, male was expected to work hard such as agricultural activity, while female was expected to do housekeeping works such as cooking or handcrafting. However, some skipped-generation families had different pattern of role division. Roles within family were based on ability and skill which embedded in each family members. Some families, with male grandchildren, were skilled in handicrafts, so male grandchildren were influenced by their grandparents, and were able to do handicraft tasks. However, some thought that handicraft works should belong to female members. Most people in community still did not accept such roles. Men should not work a female task. Those who worked a female task sometime were stigmatized as "the transgender", so some abilities and skills that embedded in skipped-generation families were hidden. In addition, there was negative effect on role division among skipped-generation families. Health problem became a challenge for elderly grandparents. Many grandparents, with diseases such as high blood pressure, diabetes, heart disease, rheumatoid arthritis, and leprosy, had difficult situation in living with grandchildren. Severity of disease would be increasing when grandparents did several jobs at the same time. For instance, some of grandparents raised their baby grandchildren and did housekeeping works at the same time. It was too much for grandparents with disease, so some grandparents thought that raising baby grandchildren was a "burden" of the elderly's practice.

### **Economic role of skipped-generation family**

The study found that most skipped-generation families had a main occupation, farmers, while some of them did trading. Most of the farmers were sugarcane farmers because there was a sugar mill located in nearby community, and sugarcane was easy to grow. These reasons made people in Phu Khiew District to change their ways of life and agricultural forms into commercial agriculture. Sugarcane farming also produced good income to the families. Many of skipped-generation families had a large amount of annual income. They were able to buy more lands or rent lands for expanding their sugarcane farms, and became “a broker” to manage sugarcane quota in community. However, it was found that some skipped-generation families did trading because the lands they owned were not suitable for growing sugarcane, and patterns of daily consumption among local people have been changing. Therefore, trading became an option for skipped-generation families to sustain economic status of family. In addition, although skipped-generation families would have occupations to do in community, they still required remittance from migrants. The selling price of sugarcane currently is decreasing, and many families are dealing with uncertain economic conditions. They could not rely on one income source anymore, so they have to find more income sources, for instance, become labour in community, or receive remittance from their migrants. In case skipped-generation families needed money urgently, they sometimes decided making a loan from both legal source and illegal source, and expected the remittance to be “the help” to get rid of the debt.

### **Role of migrants toward skipped-generation family**

Interrelationship between skipped-generation families and migrants was another condition that affect ways of life among skipped-generation families. Most of them had internal agreement each other. Migrants would send remittances back to their families at origin areas, while grandparents took responsible for raising migrant’s children. However, migration to work outside community did not provide a good output to family. Some families had to make a loan for migration expenses, and they had to bear a lot of debt. Some families chose to make illegal loan to from one source to clear debt from another source. In addition, it was found that all skipped-generation families communicated with migrants almost every day through the online channel such as Facebook. They normally sent photos, or had a video chat to each other to show their daily activities. This communication form took a part to encourage skipped-generation families and migrants to interact with each other. It can be said that the important role of the migrant is to provide economic support to the families, while skipped-generation family’s role is to encourage migrants to success during they are working.

### **Role of community toward skipped-generation family**

It was found that the community played an important role in the ways of life of skipped-generation families. The roles were divided into 3 aspects including 1) physical aspect; showed that skipped-generation families relied on community resources to sustain

their livings such as the public land for cultivation or for daily consumption. Skipped-generation families used public lands because their own lands were used to grow sugarcane and rice, or some families did not have own lands. Skipped-generation families used water sources from nearby areas for consumption. They used water sources to find foods, and use in agriculture. Water sources nearby community were sufficient to consumption throughout the year. In addition, skipped-generation families sometimes collected wild plants or herbs at the forests nearby community. 2) Economic aspect; showed that skipped-generation families whose members have some specific skills were more likely to be hired in the community. For example, those who were experts on traditional rituals would have more chance to conduct local rituals. It was another way to build social relationship in community. 3) Sociocultural aspect; it was found that pattern of house settlement in Olo Village was separated from center of the village, and most families were the extended family. Almost villagers were relatives or close friends. Skipped-generation families always participated in community activities together with neighbors. Neighbors were the first choice when skipped-generation families needed helps. In addition, sometimes skipped-generation families would ask the help from neighbors to raise grandchildren in case the grandparents were busy or had something to do at other areas for a while. Therefore, it was not surprising to find grandchildren in the Isan countryside calling their grandparents and neighbors as "father" or "mother" because they spent long time together. Although they sometime had some misunderstanding issues, they still had a tied relationship. In addition, community and neighbors were always looking after and supporting skipped-generation families. These were the ways of life of skipped-generation families in rural north-eastern Thailand

#### **4. Conclusion**

A study of ways of life of skipped-generation families in rural north-eastern Thailand based on Parsons's concept of status and role (1902-1979) found that status and roles of skipped-generation families were constructed by social structure; family. Family automatically assigns parents have responsibility to raise children, while children have to be good manner and obedient to parents. The findings indicate both status and role which are formed into system that relates to society's norm and value, and it becomes cultural framework to regulate actions of individual. However, the social system can be flexible to meet different community contexts. The findings are supported to suggest that when values of people in community changed, patterns or systems are always replaced by new ones. For example, in the past father and mother have to raise children. Currently, more people have worked outside their home. Grandparents, thus, play an important role to raise grandchildren instead of children's father and mother. As a result, the social system is a system that determines status and role of members of the society, and it is flexible and adaptable to maintain society.

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# FACTOR INFLUENCE TO HAPPINESS OF THE NORTHEASTERN RURAL HOUSEHOLDS THAT HAVE OVERSEAS MIGRATING LABORERS, THAILAND

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## Abstract

*This article was aimed at studying the factor influence to close-knit family happiness of the northeastern rural households that have overseas migrating laborers using the quantitative research method and the household level as the analytical unit. Data collection was conducted in July, 2017 by means of interview with 334 households having overseas migrating members in Chaiyaphum, the province that has the second highest number of overseas migrating laborers. The analysis of data was based on descriptive statistics and Multiple Regression technique. It was found that the use of household's livelihood strategies, relationship between the migrating laborer and his or her family, the amount of investment from remittance sent by the laborers significantly influenced close-knit household happiness at the level of 0.01. Incomes from remittance, use of benefits from investment and average annual household income significantly influenced close-knit family happiness at the level of 0.05. All factors explained happiness of having a close-knit family at 36.1% and led to a conclusion that the close-knit family happiness influenced for migrating laborers' households include factors of households, economy, livelihood, and use of resources.*

**Keywords:** Happiness, Livelihood strategies, Labor household, Overseas migration.

## 1. Introduction

Migration is one type of rural lifestyles commonly found in the Northeast of Thailand<sup>3</sup>. Migration begins from a rural area to an urban area and has developed to overseas migration, with the number of workers involved continuously being increased. This can be seen in the statistics of 2016, when the number was approximately 69,000 workers<sup>6</sup>. The consequence of overseas migration is a great amount of money remitted by these laborers into the country, which averages 66,161.1 million THB per year (National Statistics Bureau, 2012). Meanwhile, the households receive both positive and negative impacts from the members' migration resulting from working behaviors and lifestyles of the workers at the destination<sup>4</sup>. Living and working behaviors of migrating laborers also affect their households since they leave their families for 3-5 years according to the

employment contract, such as TIC and EPS (Office of the Attorney General, 2014). It can be said that the success of migrating laborers leads to a lot of economic and social chances. Nevertheless, their households have to withstand many pressures from the missing of a member to help with the family occupation. The household adjustments in this regard involve occupational management, management of debts incurred from sending one member abroad as a form of investment<sup>2</sup> as well as adjustment of mental, social and living situations. These have brought impact on the close-knit family happiness, covering the love and unity among family members expressed through moral supports, discussions and consults on every matter, regularly joined activities that used to make the family warm and secure. The said relationships are a sort of immunity and mental support for the family members and the migrating laborers in the future or during the time when there are obstacles. This is consistent with the finding of the Office of Health Promotion Fund<sup>15</sup>. Thus, knowledge is required on factor influenced to close-knit family happiness of the households having overseas migrating laborers in order to appropriately recommend ways to enhance happiness in these households.

## **2. Research objective**

To study the factor influence to close-knit family happiness of the northeastern rural households with overseas migrating laborers

## **3. Relavant theoretical concepts**

The key concepts in this research include livelihood and happiness concepts as follows :

**The livelihood concept** - for the concept of livelihood strategies related to social, community, powerful and cultural relationship in the economic perspectives, the importance is given on concrete risks (Long, & Roberts, 2010). Risks may lead to livelihood failure. Therefore living can only be secure when the household possesses or have access to resources and earns incomes (Chambers, 2005). Livelihood strategy as viewed by Ellis (2000) is the setting of activity patterns and living practices in order to survive. These are appraised from the household processes and community activities both in rural and urban societies where social relation and institution as well as community norms bind the strategies together. These elements illustrate differences in access of resources and create differences in livelihood strategies through factors comprising human, social, natural, physical, and monetary capitals and various activities.

Livelihood Strategies means the range, a cluster of choices, and activities requiring capital and asset to achieve the goal of livelihood. The choices constructed are connected to income seeking, security, happiness and the target of production and other reproductions. The basis of such choices lies in the capability to use capital or asset (Chambers and Conway, 1991; DFID, 1999). Livelihood strategies judge a household as “the actor” and not as “the one acted upon” in the economic, political and demographical changing processes.

Livelihood Strategies comprise 5 major components:

1) Choices - The choice of livelihood strategies depend on the surrounding context and the capital found by the household. Each household has different ways to gain access

to livelihood capital, both in the respect of diversities and quantities as well as balancing of capital and resources (Long, & Roberts, 2010).

2) Struggle - As active agents, the household members have to struggle to survive; and in so doing, the impact arises on the interaction between the actors and the socio-economic, political, cultural and ecological surroundings (Chambers and Conway, 1991; Long, & Roberts, 2010).

3) Solving of problems - The households rely on their strategic perspectives and make their own decision to take responsibility over poverty problem and existing partiality, in order to face uncertainty, tension and panic, to acquire fairness and fair distribution of resources, competency and chances so that double standards will be diminished (Long, & Roberts, 2010).

4) Survival - Survival refers to the attempt to find a means to survive from occurrences of various crises such as drought, famine, low product prices, etc. In so doing, the emphasis is placed on living things that depend on one another, locating or building a place to live, financial management, food provision in the family, exchanging of products at the market, and co-performing missions necessary for existence (DFID, 1999; Scoones, 2009).

5) Sustainability - Sustainability refers to ability to maintain and improve livelihood, the process of which goes far back in the history. This includes ability to increase the resources the household has to rely on. Therefore, livelihood is the ability leading one towards success and to proceed sustainably (Chambers and Conway, 1991).

In this study, the 5 components of livelihood strategies, namely: choices, struggle, problem solving, survival, and sustainability of the households having overseas migrating laborers were studied by means of investigation of livelihood through the household's use of financial, human, physical, natural, and social capitals.

**The concept of happiness** Happiness is a social indicator that reflects wellness of a family<sup>18</sup> The word "happiness", however, has been defined in multiple dimensions. For instance, the Department of Mental Health, Ministry of Public Health<sup>15</sup> defines happiness as a happy-life condition that results from ability to manage problems in living and potentiality to develop oneself for good quality of life. The meaning covers goodness in the heart under the changing social and environmental conditions. Layard (2007) defines happiness to cover the issues of finance, employment, health, freedom, values, family, society and friends. This definition is consistent with the Office of Health Promotion Fund, which stipulates 8 happiness components, namely: (1) Happy Body, (2) Happy Heart, (3) Happy Relax, (4) Happy Brain, (5) Happy Soul, (6) Happy Money, (7) Happy Family, and (8) Happy Society. These are indicators for happiness in the context of those who are employed rather than indicators of household happiness. This research applied the concept of the Office of Health Promotion Fund for studying household happiness by emphasizing good family and good society. The dependent variable was close-knit family happiness of migrating laborers' households.

#### **4. Research methodology**

The Quantitative Methodology was applied in this research to obtain the factor influence to close-knit family happiness of the households having overseas migrating

laborers .The analytical unit was at the household level .The research population comprised rural households in the Northeast that had overseas migrating laborers whose period of overseas stay was 6 months and over .Data was collected by means of the questionnaire developed from the concepts, theories and results of primary qualitative study .The questionnaire was composed of 7 parts :household characteristics, information of overseas migrating laborers, patterns of investment from remittance, relationships between the family and the laborer, household's access to capital, livelihood strategies, and happiness of the household having overseas migrating laborers .The questionnaire had been examined in terms of content validity by qualified experts and tried out with 30 households that had overseas migrating laborers in O-lo Sub-District, Phu Khiaw District, Chaiyaphum Province. The reliability level of the questionnaire was found to be at 0.910, which indicates quality and appropriateness for use to collect data. Data collection was conducted during June 2017 with the sample group consisting 334 households. The sample size was achieved by means of Roscoe's17 approach. The data was analyzed based on descriptive statistics and multiple regression in order to factor influence to the close-knit family happiness of households having overseas migrating laborers. The data was then presented by description.

## **5. Research results**

The research results comprise characteristics of the households having overseas migrating laborers, characteristics of overseas migrating laborers and social factors as follows:

### ***5.1 General characteristics of the households having overseas migrating laborers***

The analysis of the general characteristics of the overseas migrating laborers' households

showed that most (47.6%) consisted of 3 members at the most. The percentage of dependent members was 77.2% (aged 0-14 and over 60 years old). As high as 45.2% was found being extended families. It was noted that one out of 5 households were a cross-generation household. This finding agrees with the study of Narongchai & Ayuwat (2014). The average income per year of 41.0% of the sample group was from 150,001 Baht and over and more than half (56.8%) received less than 20,000 Baht monthly from remittance.

### ***5.2 Livelihood and resources***

The analysis showed that 58.4% of the households had moderate level of relationship with the migrating laborer. It should be noted that the household members never consulted the migrating laborer related to household decision-making. This indicates the fact that the migrating laborers did not take part in different decision making of their households. When considering livelihood strategies from the households' actions for survival (with multiple choices, struggle, solving of problems, survival, and sustainability), it was found that most of these households (64.7%) had a moderate level of livelihood strategies. One out of four of the households was found to have a low level of livelihood strategies, especially when dealing with struggle. As high as 70% of these households never claimed their rights of fairness nor did they make a request for budget support to

mitigate their troubles. It was found that 45.8% invested at a low level from remittance money; 53.6% invested in children's education whereas 37.1% invested by buying household utilities. This finding is consistent with Ayuwat, Boonkwang, & Chumnanmak (2016). It was noted that 26.0% of the households utilized benefits from access to capital at a low level, especially the natural capital, i.e., subsistent land, where over 30% could not have access because some households with migrating laborers were not able to hold farming occupation due to shortage of labor and so rented out their land.

### ***5.3 Close-knit family happiness of overseas migrating labor households***

From the analysis, it was shown that the average happiness score of the family in terms of being close-knit was 30 (S.D.= 3.7) with the lowest being 12.0 and the highest being 36.0 points. Most of the households (58.1%) showed a high level of close-knit family happiness, followed by 39.8% that showed a moderate level of the happiness. When considering each item, it was found that most of the households had the highest levels of close-knit family happiness in the dimension of members' supporting one another and members being able to consult one another in every topic, at 77.5 and 71.3%, respectively. In time of one member's trouble, other members (96.4%) will help at their full and fullest capacity. However, it was found that 57.2% of the households had members not understanding one another at the highest level and 16.8% showed that they joined in activities together at a low and the lowest levels.

### ***5.4 Factor influence to close-knit family happiness of overseas migrating labor households***

The analysis of the factor influence to close-knit family happiness of overseas migrating labor households was conducted based on the Multivariate Analysis and Multiple Regression Analysis, which stipulates that the independent and dependent variables must be measured at the interval scale or ratio scale. If any variable showed measurement of a nominal scale or ordinal scale, it had to be adjusted to a dummy variable and the reference group indicated. Therefore, in this research, the extended families and cross-generation families were adjusted to be dummy variables, whereas the single families were classified as the reference group. In the multiple regression analysis, no pair of variables brought for analysis should have a correlation higher than 0.75 in order to avoid the problem from multi-collinearity because it will lessen the values from predicting equation (Prasitratasin, 1995). Analysis of the correlation coefficient between pair variables which would in turn be used to analyze the factor influence to close-knit family happiness indicated that no pairs showed correlation value higher than 0.75. Thus, the multiple regression analysis was applied using the Enter Method. It was found that the **factor influence to close-knit family happiness** of the northeastern overseas migrating labor households (Table 1) had the following factors:

1. Household factors - The relationship between the household and the migrating laborer laborers had a positive influence on the happiness of having a close-knit family, with the multiple regression coefficient (b) of 0.059. This demonstrated that when the relationship between the household and the laborer increased one unit, the close-knit family

happiness increased 0.059 unit since they were able to share different feelings. Layard similarly explained that good relationship in the household leads to increase of happiness, especially in the family per se, arising from interactions and joint activities.

## 2. Economic factors include:

1) The average annual household income had positive effect on the close-knit family happiness of the rural northeastern households having overseas migrating laborers with the multiple regression coefficient (b) of 4.146. This means that when the labor household had a one-unit increase of the average annual income, the close-knit family happiness will increase at 4.146 units. This agrees with Jebb, et al., who found that money influences happiness, for it fulfills both physical and mental needs.

2) Monthly income from remittance of migrating laborers had positive effect on close-knit family happiness of northeastern rural households with the multiple regression coefficient (b) of 5.934. This shows that a one-unit increase of earning from remittance means a 5.934-unit increase in close-knit family happiness. This finding is consistent with the research work by Joarder, Harris & Dockery and Hendriks, who found that remittance from laborers is the key item leading to happiness of their households, for the money enables ease of financial management.

3) The amount of remittance had negative effect on close-knit family happiness of the rural northeastern households that sent laborers abroad, with the multiple regression coefficient (b) of 0.157. This means a one-unit increase of remittance money brings a 0.157 decrease of close-knit family happiness. The finding became an interesting issue when the household had money to invest. According to (Alemayehu, Beuving & Ruben, 2018), happiness is reduced because investment brings about risk in the livelihood.

## 3. Livelihood and use of resources are composed of:

Utilization of capital had a positive effect on close-knit family happiness of the rural households in the Northeast with overseas migrating members. The multiple regression coefficient (b) was 0.029, demonstrating that an increase of one unit of capital utilization brings a 0.029 unit increase of close-knit family happiness. This agrees with Mularska who found that capital influences the inhabitants' good quality of life by indicating their wellness. Use of livelihood strategies had a positive effect on close-knit family happiness of rural households having overseas migrating members, with the multiple regression coefficient (b) of 0.131. This shows that an increase of 1 unit of livelihood strategies brings a 0.131 unit increase of close-knit family happiness.

It was noted that the number of household members, the number of dependents, the number of working-age members, and the characteristics of the household of overseas migrating laborers did not show significant influence on close-knit family happiness of the overseas labor households at the level of 0.05.

When comparing the 6 factor influence for close-knit family happiness of the rural northeastern households that had overseas migrating laborers from the multiple regression coefficients (Beta), it was found that close-knit family happiness of these households were

mostly influenced by the use of livelihood strategies (Beta=0.267), followed by the relationship between the household and the migrating laborer (Beta=0.186), the amount of remittance (Beta=0.181), income from remittance (Beta=0.139), utilization of capital (Beta=0.128), and average annual household income (Beta=0.101). All of the independent variables brought into the analysis significantly explained the inconsistency of close-knit family happiness at the level of 0.01, by explaining household happiness at 36.1% (R<sup>2</sup>= 0.361).

## 6. Research conclusion

It can be concluded from the analyses that the determinants for close-knit family happiness of rural northeastern households having overseas migrating laborers were: use of livelihood strategies, relationship between households and migrating laborers, amount invested from remittance, income from remittance, utilization of capital, and average annual household income. Therefore, relevant organizations should encourage the households having overseas migrating laborers to appropriately use livelihood strategies while their members are working abroad. They should interact with and join in activities with the community and enhance the mechanisms that reduce risks from investment that is based on remittance money. Meanwhile, overseas migrating laborers' households should make an agreement on remittance before migration of the member and set the agreement for household's use of capital.

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# E-SAN FOLKSONGS: E-SAN IDENTITY AND SOCIAL MEDIA

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## **Abstract**

*The objective of this article is to study E-san identity through online social media. The study data and information are collected from 15 E-san folksongs that broadcast in online social media selected only songs that earn more than 10 million views. It is found that folksongs on online social media, to date, has much influenced E-san identity, since online social media is easily connected with common people. As a result, people no matter where they live are able to acknowledge and understand E-san identity.*

**Key Words:** Identity, E-san, Online Social Media, E-san Folksongs

## **1. Introduction**

E-san region is the largest region of Thailand, so E-san identity study is interesting, as E-san region aspect is different from other regions in many ways. Importantly, E-san region consists of various groups of people such as E-san-Laotian, Laotian from Laos, Kuy, Nyaw, Tai Phuan, Phu Thai, etc. These groups of races have their own history and tradition before. There are sources providing information for the identity study especially from anthropological study such as legends, tales, rituals, and folksongs.

## **2. E-san Folksongs**

Thai songs has evolved for a long time from native folksongs, lullabies, Pleng Kiaw Khao, Pleng Mho Lam Mho Kan, Pleng Bog to present folksongs (Kingkaew Attakorn, 1976). These songs contain different contents and melodies according to environment and way of life of each locality particularly folksongs which is one of the literatures that narrate local stories efficiently. Wit Sivasriyanon (1971: 95-97) stated that literatures and society influence each other, since literatures recorded stories of a society in that time intentionally or unintentionally by the creators of literatures. Therefore, folksong literatures can be accounted as a method in recording and depicting stories of local life.

Sa-nga Kanchanapan (2003: 46) said that Thai folksongs have been influenced by native folksongs and traditional Thai songs of which words and lyrics can be understandable easily, and the melodies are both adapted from the traditional songs and newly arranged and composed. Most of them are easy listening, and uttering is used for

singing. The contents of the songs are widely related to Thai society value and the local way of life, for not only the folksongs reflecting the local life in agricultural way, but also indicating the strong bond between the people and tradition, culture, religion, and belief. These are the key leading the listeners to understand the local Thai society identity.

E-san folksongs is remarkable in word expression, melody, content, and literary style which is highly valuable in literature. As well, E-san folksongs carry on beliefs, values, ideas, traditions, and social ideals which are considered as a local heritage (Lakkhana Sukswan. 1978: 59). People that appeared in the songs mostly are rural or poor, and they describe their love, working, housing, dressing, dietary, entertainment, and sometimes the reflections of belief and the reflections of the belief and value system of their locality like superstition and astrology, nation, religion and monarch. It is also included the materialistic values in wealth and properties, values in estates and power, values in city life, values in allurements and feminine. It is sometimes reflected in some songs when a female lost virginity or beguiled by a man from a city, the woman will be blamed, etc.

E-san folksongs change accordingly through ages. To be clarified, when a cassette recording business losted its popularity, the investors had their singers recording their songs, only one or two, as a “single” to estimate the sales. If any single earned well reputation, that singer then had a chance to release a compilation or a long-play consecutively. Later on when the digital period had come up, Thai songs imitated foreign songs, or they was called string songs. Luk Krung songs gradually faded away, and Thai folksong business were very marginally. Business was fully covering Thai music. The advancement of technology raised its role in the business. There was no longer recording that recorded all instruments in one time, since it changed to be partially recorded. Besides, there is an online broadcasting through social media instead of releasing as a single. There is a motion picture for a song or a music video, so listeners can appreciate the content of a song through the acting in a music video, instead of listening the song only. There are many songs that are interested and imply social culture within.

### **3. Online Social Media**

Online social media is a media that a sender shares the formation that in various formats to the receiver through online network in which they can interact to one another or between sender to receiver, or one receiver and another receiver. Online social media is divided by frequent using including Blogging, Twitter and Microblogging, Social Networking, and Media Sharing.

To date, online social media role affects the life of people in the society much. It is obvious that we can simply access or use online media via communication devices like computers, mobile phones, tablets, or other devices that can access to internet connection or mobile phone networking. From a report of ETDA (Electronic Transactions Development Agency (Public Organization)), Ministry of Information and Communication Technology, that surveyed internet usage behavior of Thai people in B.E. 2017, it is found that the top three of the most popular online social media were Youtube at 97.1%, Facebook at 96.6%, and Line at 95.8%, respectively.

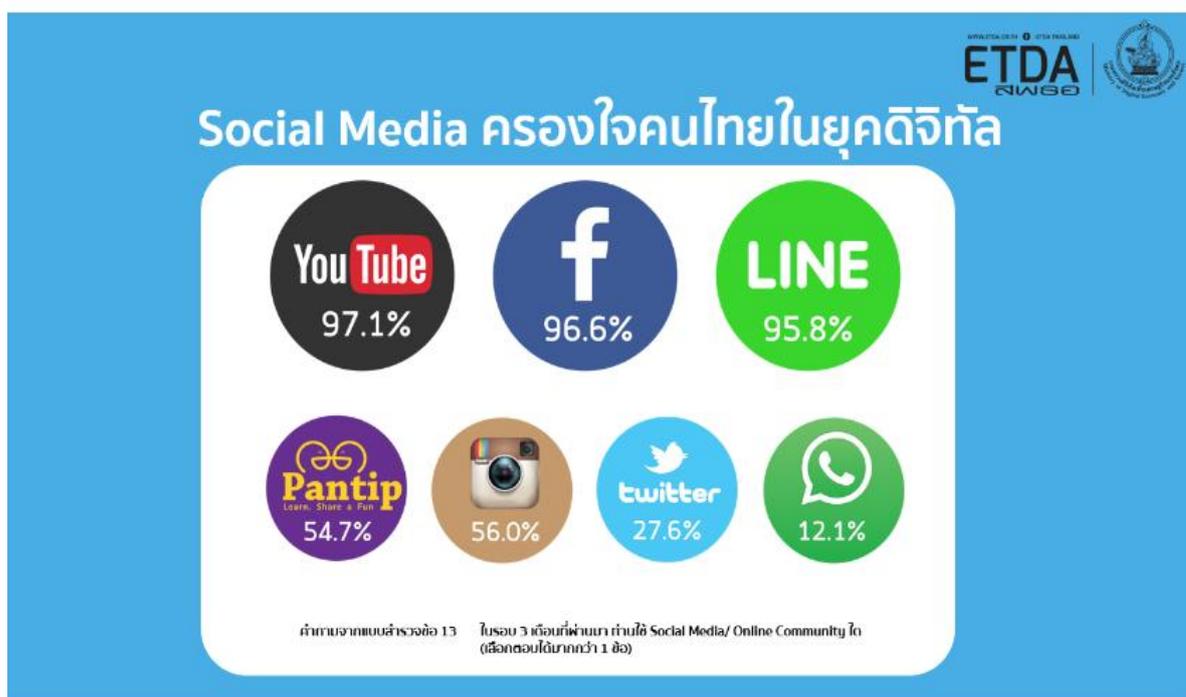


Image 1, Source: <https://www.eta.or.th/content/thailand-internet-user-profile-2017.html>

### 3. Folksongs and Online Social Media

The role of online social media does not affect only the way of life of common people in communication but also E-san folksongs in identity distribution of the northeastern people to be known and understood widely.

As mentioned above, now Thai folksongs are in the digital age, so be E-san folksongs. To be clarified, access to E-san folksongs does not longer require any cassette or any CD. People can get an access to E-san folksong easily and fast including the motion picture that help people to be more understood and acknowledged the condition of E-san society especially through the most popular online social media like YouTube and Facebook, which publishing E-san folksongs and make the songs to be popular as well.

To be an example, I pick up one of E-san most popular folksongs this time around, which contains not only attractive melody, but its content and music video as well. It is very interesting because this song can represent E-san people's lifestyle including beliefs, tradition, culture, and their living. The song is named *Tao-Ngoi* by Jintara Poonlap. The story of this song is about a girl from Tao-Ngoi District, Sakon Nakhon province, who has been waiting for her lover from the same district, and it is described in the song that she keeps thinking of him until it causes her body lean. Simultaneously, in the lyrics, there is an implication of E-san identity of people in Sakon Nakhon province including their belief that Tao-Ngoi statue can be blessing and give one fortunate, the origin of E-san rocket (Pha Daeng Nang Ai), etc. other than the lyrics, the music video also shows the locations and a worshipping tradition in this region.

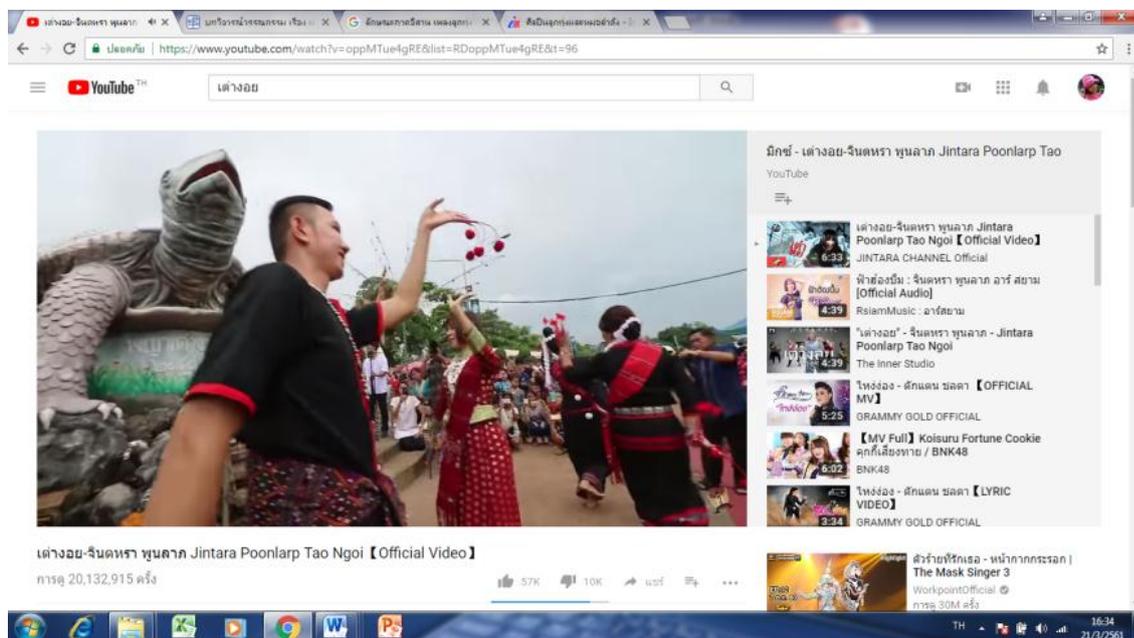
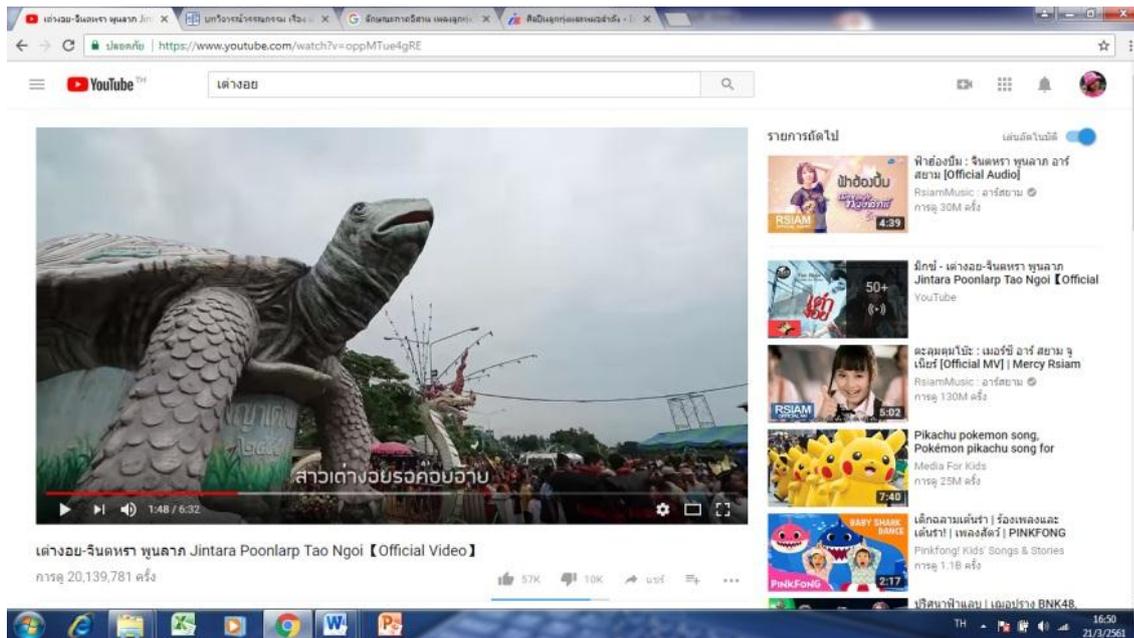


Image 2-3, Song “Tao-NGoy” by an artist named Jintarha Poonlap  
 Source: <https://www.youtube.com/watch?v=oppMTue4gRE>

There is another popular song that can be a good example as well, the song called *O-La-Nor* by an artist named Kong Huai Rai. It is a story of a local E-san boy who tried to change himself according to the fashion trend of Korean dressing style, listening to modern music, and living as modern as city life does, but finally he fails to change because of his E-san blood inside his body brings him back to the reality. In the end, he accepts his identity.

The words of the song reflect E-san society nowadays that E-san teenagers or new generation are trying to keep away their identity including tradition, culture, living style, etc., but finally there is no E-san offspring can leave E-san identity. The music video shows precisely clear images of E-san lifestyle and culture even in a few minutes.

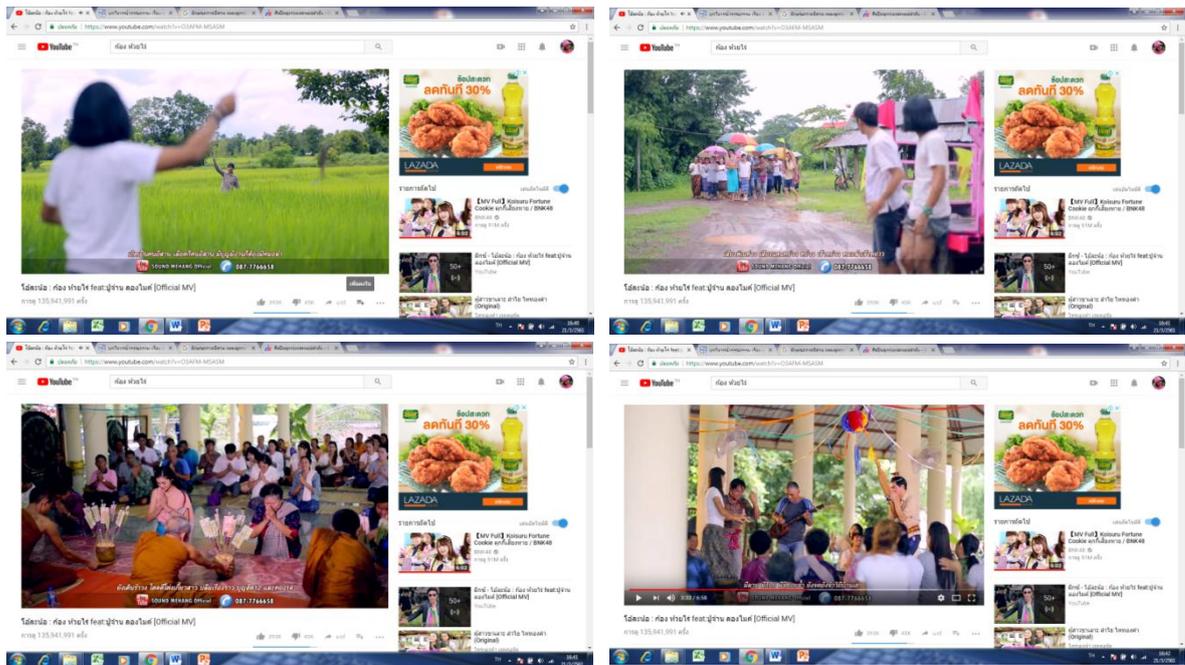


Image 4-7, Song “O-La-Nor” by an artist named Kong Huai Rai

Source: <https://www.youtube.com/watch?v=O3AFM-MSASM>

### 3. Conclusion and Discussion

From the sample songs above, we can see that online social media performs its role against E-san folksongs in E-san identity very well, for online social media, to date, has diversity and is the fastest and easiest media to access as well as it can be approaching most people. Therefore, online social media is initially important in E-san society identity distribution to public to understand and connect.

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# FINDING A SUSTAINABLE SOLUTION FOR THE FATE OF LOTTERY PEDDLERS IN A CHANGING MARKET

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## **Abstract**

*The lottery market in Vietnam has witnessed a whirlwind of changes in recent years, starting with the introduction of computerized lotteries and resulting in the uncertain fate of traditional lottery peddlers. To understand the role of peddlers in the lottery distribution, this paper focuses on examining key determinants of lottery purchase intention, including gambling tendencies, sympathetic altruism, and perceived behavioral control. The findings serve as an instrument to validate the contribution of lottery peddlers and to predict their future in the industry, from which appropriate recommendations are put forward regarding the sustainable development of the lottery industry as well as the long-term solution for the fate of lottery peddlers.*

**Keywords:** Lottery, Computerized lottery, Peddlers, Gambling, Altruism, Sustainable development

## **1. Introduction**

### ***Research background***

Traditionally, all lottery companies in Vietnam operate in the same non-digital way: players would buy tickets that have random numbers printed on, out of which the host company would then draw the winning number. Prior to the entrance of computerized lotteries, traditional lotteries used to dominate the Vietnamese market.

Since its introduction of self-selection jackpot lotteries in 2015 to the Vietnamese market, Vietlott has caused a great disruption in the industry. Unlike the traditional lotteries, the self-selected games allow the players to choose their own set of numbers and have these numbers printed onto their tickets immediately. Moreover, the prizes of these jackpot games are much higher: while traditional lotteries offer the highest prize at 2 billion VND, the special prize of Power 6/55 starts at 30 billion VND and accumulates throughout the drawings, often amounting to 300 billion. Furthermore, to assist players in staying updated and well-informed about the games, Vietlott launches an official mobile app, in which all the game instructions, trial games, news, and drawing results are available with one tap.

Rationally, gamblers are easily incentivized to switch to computerized jackpots, since the potential rewards are so much greater while the ticket price is only 10,000 VND, just the same as that of traditional lotteries.

Since the introduction of self-selected lotteries, traditional lottery companies constantly reported slowdown, claiming computerized lotteries have taken away their shares. For example, in Ho Chi Minh City, the region accounting for a mammoth share of total revenue of Vietlott, the Lottery Company for the Construction of Ho Chi Minh City reported the lowest profit in 5 years in 2017. Another example is the Lottery Company for the Construction of Tien Giang Province, whose earnings before tax drops so sharply that it had to adjust 2017 target growth rate to only 0.02% (vnexpress.net). Meanwhile, the year-on-year growth rates in revenue of Vietlott in the same period was 237.5% (danviet.vn).

Amid the whirlwind of changes in the industry and the redistribution of the lottery market, surprisingly, little focus has been made on the peddlers although they are collectively a unique attribute of the lottery industry in Vietnam. Easily found on every street and in every alley, at least 1,300 peddlers currently operate in Ho Chi Minh city (bnews.vn). Every day, they would travel approximately from 20 to 30km, striving to sell out at least 100 tickets to earn 100,000 - 120,000 per day, making a total of only 3,000,000 - 3,600,000 VND per month. Peddlers are typically the disabled, the elderly and young children, thus, they have little capabilities to perform any kind of jobs other than travelling and asking passers-by to buy some luck from the tickets.

Now they are even more vulnerable than ever, since traditional lotteries are vastly endangered, facing tough competition from the computerized jackpots. Peddlers cannot benefit from computerized lotteries either because the involvement of peddlers in reselling the computerized lotteries thus far is deemed illegal by the local authorities. To switch to opening a stationary vendor to distribute computerized lotteries is also highly improbable: a minimum investment of 95 million VND and a fixed place, as required by Vietlott, are completely out of reach for most peddlers.

The prospects of these peddlers, therefore, is dependent on their role in the lottery industry: whether the purchase of lottery tickets is encouraged by the presence of the peddlers in any way, or they are virtually dispensable in the distributing system. To answer these questions, this paper studies what make(s) people want to purchase lotteries.

The research aims to answer these following questions:

- (1) *What factors influence lottery purchase intention among lottery buyers in Vietnam?*
- (2) *Of the confirmed determinants, which one(s) have the greatest effect?*
- (3) *How do the peddlers affect the lottery distribution system in Ho Chi Minh city?*

## **2. Literature review**

### **2.1. Previous studies on lotteries**

#### *2.1.1. Lotteries as a commodity*

Lotteries purchasing is as much a consumption as an investment (Gerchak & Gupta, 1987). As a consuming good, the demand for lotteries is determined by economic factors

(such as prices, income levels of buyers) and demographic factors (age, gender, education level, occupation) (Clotfelter and Cook, 1990). Regarding these factors, there are some universally proven correlations between certain demographic features and the frequency of lottery purchase. For instance, many studies pointed out that lower socio-economic classes would participate more frequently in lottery play (Rogers, 1998; Brown, Kaldenberg & Browne, 1992; P. Thong & L. Huy, 2013). Seeking explanations for this phenomenon, Walker (1992) suggested that it may be due to their poor understanding of the low odds they are engaging with, while Brenner (1986) and Herring & Bledsoe (1994) discovered that frequent players saw lotteries as an escape from poverty.

As an investment, lotteries are considered risky financial assets which offer a chance of a great economic reward (Clotfelter & Cook, 1990). Even with the poor chance of winning, people still participate in lotteries simply because the reward is much greater than the amount invested. Among the determinants of lottery expenditures studied by P. Thong & L. Huy (2013), the “hope to win” variable is found to have a great effect: the greater hope a player had, the more money they would spend on lotteries.

### *2.1.2. Lotteries to promote the public good and help others*

In addition to a commodity, lotteries are also perceived as a way to promote public services and support the government’s earning. However, this factor, according to most studies in other countries, is not a primary reason why people purchase lottery (Clotfelter & Cook, 1990; Miyazaki, Langenderfer & Sprott, 1999).

However, the study on lotteries expenditures by P. Thong and L. Huy (2013) suggested the opposite. Accordingly, people with a higher sense of altruism were likely to spend more heavily on constructive lotteries. This is supported by the strong correlation between the variable “Helping the peddlers” and the actual expenditures of Can Tho residents.

This gap of understanding might have to do with the peddlers - a unique force in the lottery industry of Vietnam. As P. Thong and Huy (2013) suggested, the advantage of the peddlers is twofold: their mobility greatly enhances the convenience to the lottery customers; while their presence triggers altruistic motivation, thus, compelling passers-by to buy lotteries.

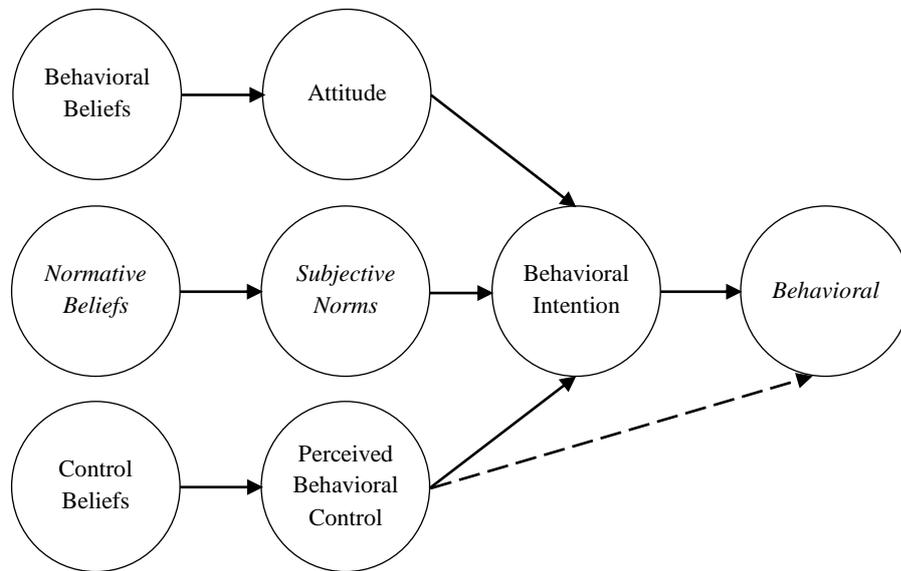
### *2.1.3. Factors of lottery purchase intention*

With respect to all of the studies above, the factors that motivate people in Vietnam to purchase lotteries can be generalized as three main sources: (1) people buy lotteries for gambling purpose in hope of economic gains, (2) people buy lotteries out of empathy for the peddlers, and (3) people buy lotteries because the presence of the peddlers make it easy to do so. This paper aims to investigate these factors in their relations with the buying intention, rather than the actual purchasing behavior.

## ***2.2. Lottery purchase intention***

One of the most well-known and heavily studied consumer theories in predicting consumer buying intention is Theory of Planned Behavior (TPB) (Ajzen, 1985, 1991).

TPB maintains that the *behavior* of a customer is determined by his or her *behavioral intention* to perform that act. The determinants of this intention are the *attitude* and the *subjective norms* (Fishbein & Ajzen, 1975), and *perceived behavioral control* (Ajzen, 1985, 1991), as illustrated in **Figure 1**. In this model, while the *attitude* and the *perceived behavioral control* reflect the consumer's personal beliefs, the latter is under influence of social normative beliefs (Hansen et al., 2004) - rather than his or her own. Therefore, the outcome is a result of both internal and external factors.



**Figure 2: Theory of Planned Behavior**

The model has proven to have strong capabilities of explaining and predicting customer buying intention in many studies across multiple industries, such as online grocery buying intention (Hansen et al., 2004), intentions to purchase organic food (Arvola et al., 2008), condom use (Albarraçín et al., 2001), and lottery play in Canada (Walker, Courneya & Deng, 2017). Such results lay a solid foundation for following propositions.

*Firstly*, the attitude towards purchasing will predict the purchase intention. *Secondly*, to clarify what leads to this attitude, it is necessary to determine behavioral beliefs of a person's evaluation of lottery purchase action. In this research, gambling and empathy towards peddlers are expected to function that attitude towards lotteries purchasing. Hence, it is hypothesized that:

*H1: Attitude towards lottery purchase behavior positively relates to lottery purchase intention.*

*Thirdly*, the perceived behavioral control towards lottery purchase will predict the purchase intention. Perceived behavior control over lottery purchase, defined as the ease to perform that behavior (*self-efficacy*) and the possible obstacles along the way (*controllability*) (Ajzen, 2002; Hansen et al., 2004), is expected to correlate with the presence with the peddlers. This discussion gives:

*H2: Perceived behavior control towards lottery purchase positively relates to lottery purchase intention.*

### 2.3. Gambling tendencies

Lottery play is associated with gambling in most studies. Rogers (1998), Griffiths and Wood (1999), and Ariyabuddhiphongs (2011) all regarded lottery play as “lottery gambling”. Clearly, there is a close relationship between lottery play and gambling.

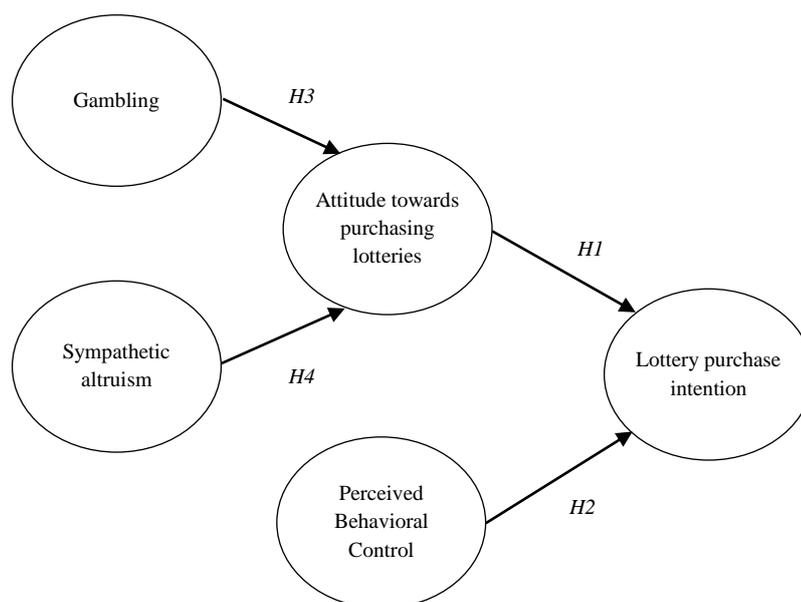
Gambling is often defined as an act of risking (or wagering) money or valuables on the outcome of a game, a contest, or any other event in the hope of winning additional money or material goods (Meyer, Hayer & Griffiths, 2009). It is characterized by beliefs an individual upholds about the results coming from gambling (Cummings & Corney, 1987). Essentially, such reviews on the concept of gambling matched with the description of behavioral beliefs in the TPB model by Ajzen (1985, 1991). Thus:

*H3: Gambling positively relates to the attitude towards lottery purchase.*

### 2.4. Sympathetic altruism

As discussed, the study of P. Thong and L. Huy (2013) on lotteries expenditures discovered that “helping the peddlers” factor played an important role in determining a person’s spending on lotteries. Since the vast majority of the peddlers are children, the elderly and the disabled, who look shabby and unkempt, it can be deduced that their presence has triggered some emotional response from the buyer -- either sympathy or empathy -- and compelled them to take action by purchasing the lotteries. In other words, the feeling of sympathy/empathy results in altruism. This aligns with the study results by Eisenberg et al., (1989), Batson (1987) and many others, in which the sense of sympathy/empathy was positively related to altruistic behavior. Since altruism is the belief in or the practice of disinterested and selfless concern for the well-being of others, this must be among the factors that drive one’s behavioral beliefs, matching well with the description of the TPB. Therefore:

*H4: Sympathetic altruism positively relates to the attitude towards lottery purchase.*



**Figure 3. Proposed conceptual framework**

### 3. Methodology

#### 3.1. Data collection

Aiming to examine the determinants of lottery purchase intention in Vietnam, this study gathers data from 248 observes via a standardized questionnaire. To yield the most representative sample, the target respondents are Ho Chi Minh City residents of all backgrounds, who have purchased lottery previously. Moreover, the survey is conducted offline via convenience sampling method. Finally, only those of 18 years of age or above with complete mental functionalities are valid respondents, since they are legitimately responsible for their behaviors. The process of data collection is completed within two weeks to minimize the effect of other uncontrollable variations.

#### 3.2. Variable measurements

The questionnaire consists of two parts:

- ❖ Demographic information: This part concerns some background information of the respondents to determine whether they are suitable subjects, who can provide a valid answer as a lottery purchaser. Furthermore, the information given in this part also demonstrate some demographic characteristics of the respondents.

- ❖ Survey questionnaire: The scale consists of 23 measurement items of five factors, using 5-point Likert scale: *Lottery purchase intention* (4-item scale adapted from Lu, 2014), *Attitude towards purchasing lotteries* (5-item scaled adapted from George, 2004), *Perceived behavioral control* (5-item scale adapted from George, 2004, Hansen et al., 2004), *Gambling* (6-item scale adapted from Rosseau et al., 2002), and *Sympathetic altruism* (4-item scale adapted from Davis, 1980).

### 4. Data analysis

#### 4.1. Descriptive analysis

**Table 1** illustrates the consumption trends in terms of lottery types and channels of distribution. The figures indicate two things. Firstly, traditional lotteries still remain popular in Ho Chi Minh city, accounting for 79%. Secondly, the peddlers do have significant contributions to the distribution of lotteries as 51% of the respondents purchased lotteries from them. However, the participation of peddlers only reflected heavily in the purchase of tradition lotteries (77%), as opposed to little impact on computerized lotteries (21%), indicating the role of the peddlers is only active in the traditional types.

**Table 1. Types of lottery and Channels of distribution**

Distr. Channel	Types of Lottery					
	Traditional		Computerized		Both	
	Freq	%	Freq	%	Freq	%
Vendor	12	10.17	33	62.26	28	36.36
Peddler	91	77.12	11	20.75	39	50.65
Both	15	12.71	9	16.98	10	12.99
Total	118	100	53	100	77	100
		47.58		21.37		31.05

#### 4.2. Statistical analysis

The data analysis procedure includes reliability test, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modelling (SEM). Internal consistency of the data is confirmed by reliability test with all Cronbach's alpha value above 0.7, indicating that the items are well-designed and correlate to one another (George and Mallery, 2003). The EFA, on the other hand, confirmed the independence of the variables from one another as shown in **Table 2**.

**Table 2. Factor loading**

<b>Latent variables</b>	<b>Observed variables</b>	<b>Factor loading</b>	<b>Cronbach Alpha</b>
<b>Gambling</b>	GAM1	.759	.854
	GAM2	.732	
	GAM3	.765	
	GAM4	.696	
	GAM5	.707	
	GAM6	.742	
<b>Sympathetic altruism</b>	SYM1	.821	.869
	SYM2	.817	
	SYM3	.835	
	SYM4	.856	
<b>Perceived behavioral control</b>	PBC1	.780	.862
	PBC2	.855	
	PBC3	.835	
	PBC4	.647	
	PBC5	.833	
<b>Attitude towards purchasing lotteries</b>	ATT1	.753	.613
	ATT2	.662	
	ATT3	.754	
	ATT4	.733	
	ATT5	.730	
<b>Lottery purchase intention</b>	INT1	.842	.726
	INT2	.797	
	INT3	.817	
	INT4	.757	
<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</b>			<b>.849</b>
<b>Bartlett's Test of Sphericity</b>		df	105
		Sig.	.000

After the reliability test and the EFA, the CFA was performed to examine the fit between the proposed theoretical framework and the data set according to indicators of goodness-of-fit. **Table 3** summarizes the values of model fit measurements as proposed by Joreskog (1969), Bentler and Bonett (1980), McIver and Carmines (1981), Chin and Todd

(1995), MacCallum et al. (1996); Wheaton et al. (1997); Hair et al. (1998), and Tabachnick and Fidell (2007). Overall, the values indicated good model fit for the research.

**Table 3. Model fit measurements**

Measurements	Criteria	Value	Result
Chi-square/df	$\leq 2^{**}; \leq 3^*$	1.629	Very good
Absolute fit index (GFI)	$\geq 0.9^{**}; \geq 0/8^*$	.883	Acceptable
Incremental fit index (CFI)	$\geq 0.9^{**}$	.936	Very good
One goodness-of-fit index (TLI)	$\geq 0.9$	.927	Very good
One badness-of-fit index (RMSEA)	$\leq 0.05^{**}; \leq 0.08^*$	.050	Acceptable
P-CLOSE	$\geq 0.05^{**}$	.457	Acceptable

Finally, SEM was used to validate the relationships in the proposed framework. As the path estimates indicated, three out of four hypotheses were supported (see **Table 4**). Attitude towards purchasing lotteries was found to have a positive influence on the intention to purchase lotteries.

**Table 4. Hypotheses testing results**

Hypotheses	Path estimates	p-value	Conclusion
<b>H1.</b> <i>Attitude towards lottery purchase behavior positively relates to lottery purchase intention.</i>	.332	.001	Supported
<b>H2.</b> <i>Perceived behavior control towards lottery purchase positively relates to lottery purchase intention.</i>	.032	.576	Not supported
<b>H3.</b> <i>Gambling positively relates to the attitude towards lottery purchase.</i>	.223	.002	Supported
<b>H4.</b> <i>Sympathetic altruism positively relates to the attitude towards lottery purchase.</i>	.178	***	Supported

Additionally, both gambling and sympathetic altruism helped shaping the positive attitude towards lottery purchase, however, gambling stood out as the more critical determinant. Meanwhile, no clear effect from perceived behavioral control on the attitude was detected.

As statistical analyses revealed, the total effect equation of the two exogenous latent variables (GAMBLING and SYMPATHETICALTRUISM) towards endogenous latent variable (INTENTION) through the mediator (ATTITUDE) was:

$$PURCHASEINTENTION = (0.074 * GAMBLING) + (0.059 * SYMPATHETICALTRUISM)$$

#### 4.3. Group variable evaluation

The sample represented all groups of age, occupation, and income level. However, the sig. from Levene's Test of Equality of Error Variances was .204 (greater than .05), indicating no significant difference in variance between group variables (age, occupation,

personal income). The tests of between-subjects effects also suggested that there were no integrated effects between occupations, age, and personal income levels towards purchase intention. It is also indicated that there was no effect of group variables towards purchase intention (**Table 5**).

**Table 5. Tests of between-subjects effects**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Square
<b>Corrected Model</b>	27.458 <sup>a</sup>	43	.639	1.149	.259	.195
<b>Intercept</b>	796.268	1	796.268	1433.114	.000	.875
<b>Occupation</b>	1.323	4	.331	.595	.666	.012
<b>Age</b>	1.985	4	.496	.893	.469	.017
<b>PersonalIncome</b>	.804	3	.268	.483	.695	.007
<b>Occupation * Age</b>	7.857	7	1.122	2.020	.054	.065
<b>Occupation * PersonalIncome</b>	3.956	6	.659	1.187	.315	.034
<b>Age * PersonalIncome</b>	5.124	8	.640	1.153	.330	.043
<b>Occupation * Age * PersonalIncome</b>	7.799	9	.867	1.560	.129	.064
<b>Error</b>	113.347	204	.556			
<b>Total</b>	3585.313	248				
<b>Corrected Total</b>	140.804	247				

## 5. Discussions and conclusions

This research proposed three factors as determinants of lottery purchase intention: gambling, sympathetic altruism, and perceived behavioral control. Statistical analyses of a sample of 248 respondents revealed that gambling and sympathetic altruism can predict the purchase intention of lotteries. It was found that there was no difference among demographic groups.

The study also confirmed the relationship between the attitude towards lottery purchase and the purchase intention, as Theory of Planned Behavior has put forward. However, the variance was only a little higher than average, implying that there might be other factors apart from attitude.

Gambling was found to have an influence on the attitude of the lottery player. This revelation correlates to the previous findings of gambling and lottery play.

Moreover, the study confirmed the positive effects of sympathetic altruism on the attitude of customers, aligning with the suggestions made by P. Thong & L. Huy (2013). This relationship, however, has not been addressed anywhere else in the world, as the peddlers are collectively a unique feature of Vietnam.

As the descriptive analysis pointed out, a large proportion of lottery purchases are attributable to the presence of peddlers in the case of traditional lotteries but not of computerized lotteries. With the gambling's effect being more significant than that of sympathetic altruism, the rise of Vietlott may tilt the interests of lottery players more heavily to gambling motivation, thus, putting the well-being of the peddlers at risks.

Perceived behavioral control was found to have no influence on the intention of buying lotteries, which is inconsistent with the Theory of Planned Behavior. A possible explanation could lie in the way how people perceive their ability to control the behavior: A good part of PBC deals with how conveniently and readily the lotteries are for customers to purchase, and the current distribution of lotteries are not convenient enough, the PBC virtually has no impact on their purchase intention. Perhaps when the lotteries are officially open for sales through online channels, thus, giving customers more control over the purchases, the effects of PBC will apply.

From a social standpoint, this research produced some insightful understanding of how the lucrative lottery business has been affecting people's lives. Firstly, it revealed that a large number of lottery purchases were made out of sympathetic altruism. In other words, the role of the peddlers in the lottery distribution is affirmative, in which they have solid contributions to the business while trying to make their ends meet. Secondly, gambling, too, is a popular motivation of lottery purchase, and it is more so than altruism is. This raises a question of whether gambling tendencies will eventually overwhelm the effects of altruism, as Vietlott is escalating the games and offering bigger and bigger rewards. If it does, it will take down thousands of the poor, the incapable of labor.

Although Vietlott can hardly be blamed for the potential unemployment of those peddlers, it is its corporate social responsibility to counterbalance the impacts it has made while conducting business. As a financially successful and socially responsible firm, Vietlott possesses the power to make a difference. One possible short-term solution is to have a charitable fund or make a donation to the peddlers. Regarding the long-term scenario, it would be best to create jobs for the peddlers, such as offering them an allowance to open small trade businesses, or sell handicraft products, or educate some to become tour-guides. These jobs require similar skills to selling lotteries -- selling and presentation -- and little direct labor efforts, which can be executed by the peddlers. The last solution might take initial investments in terms of organizing and educating, but its returns is two-fold: not only does it solve the peddlers' unemployment issues in the long run, but it can also raise Vietlott's profile as a cause-centric business, staying true to what it has been positioning -- "Chance to better" -- bettering the lives of the players, and bettering the lives of the peddlers.

However, due to resource limitations, this paper can only provide such suggestions regarding the peddlers' potential unemployment issue, thus, encouraging further research to validate these solutions and explore other options.

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# INTERCULTURAL COMMUNICATION: A CASE STUDY ON THE FILM SABAIDEE LUANG PRABANG 1

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## **Abstract**

*This article aims to analyze intercultural communication in the film Sabaidee Luang Prabang 1 (Good Morning Luang Prabang 1). As a joint venture film between both Thai and Lao funders, one can see that the film effectively presents differences between the two cultures. The article analyzes 2 aspects of the film, including: 1) the stereotypes held by the characters and 2) the characters' language use across cultures. Findings from the analysis of both of these aspects reflect the crucial need for study and understanding about cross-cultural differences prior to traveling to a new place in order to live there normally and happily.*

**Keywords:** Stereotypes, Intercultural Communication, Good Morning Luang Prabang 1

## **1. Introduction**

Kaewseenual (2005) states that cultural differences and human varieties including the differences in administration, race, religion and language can bring about misunderstandings in communication, therefore it is necessary to learn and exchange cultural differences in order to reduce the gap which might arise from communications amongst different groups of people.

It can be seen that the knowledge relating to intercultural communication is absolutely essential for the senders to have a well preparation in order to be able to understand and learn the model and guidelines when indulging in other cultures or when outsiders coming into our culture. If we do not understand the cultural differences in the first place, it may cause bad attitudes towards those who are we talking to. This is true with what Euamornvanich (2017) who says that today's society is influenced by intercultural communication. While we are communicating with other people, it is obvious that each person has already had his/her own culture which has been accumulated from an environment he/she lives in. Therefore, communication with individuals from diverse cultures needs to be ready for learning the differences as a way to succeed in communication.

However, both senders and receivers' intercultural communication which is consistent with the theory of stereotype viewpoint is an issue found frequently in the communication process between cultures. As what Kimprakone (2008) states that stereotype viewpoint consists of two aspects. They are 1. a structured stereotype: an indirect perception of information through education, mass media, and documents or historical events; and 2. an unstructured stereotype: a direct perception of information through experiences by having an interaction with others so that thought and attitude have

been completely established. Boon-arch (2009) also adds that stereotype viewpoint is often viewed as a negative thought such as the determination that Negroes are not educated, or Italians like taking other people's belongings without permission.

In addition to stereotype viewpoint, obstacles resulting from the use of language can also take place. Boon-arch (2009) emphasizes that communication problems found from the senders' language are different in each case. The meaning and understanding of language in each culture are different in details from one another. This can be apparently found from how Thai people communicate with foreign colleagues that often causes misunderstanding in the use of some lexical meanings, thus nonverbal language or body language are replaced to make the conveyance of messages clearer.

Thus, we can see that the analysis of intercultural communication from the film: Sabaidee Luang Prabang 1, can well reflect many aspects of the cultural differences through the characters in the story. Two points are raised in the analysis: the stereotype viewpoint and the use of intercultural language.

## **2. Objectives**

2.1 To analyze the thinking process or stereotype viewpoint from the characters in the film Sabaidee Luang Prabang 1

2.2 To analyze the use of intercultural language of the characters in the film Sabaidee Luang Prabang 1

## **3. Method**

3.1 Documents and research on intercultural communication are collected.

3.2 The data are analyzed with the concept of stereotype viewpoint and the use of intercultural language from Sabaidee Luang Prabang 1

## **4. Results**

The results based on the concept of cross-cultural communication from Sabaidee Luang Prabang 1 can be categorized into two points: 4.1 Stereotype viewpoint and 4.2 The use of intercultural language.

### ***4.1 Stereotype Viewpoint***

"Sorn", a protagonist in the story, was half Laotian and Australian, but he did not grow up in Laos or Australia. He was raised in Thailand all his life since learning in high school until working. Because of this, he had learned and absorbed some Thai cultures since he was young. He was a photographer of one company and was sent to take the pictures in Laos. It was his first journey to Laos. Although he had Laotian blood, he did not know anything about Laos and had never visited Laos before. So he hired a tour guide named "Noi" on his trip. It was the turning point of his life to learn more about Laos' cultures as well as being impressed that this country was like one of his home. It could be said that this journey brought him not only the portfolio of photos but also a new opened vision and view towards Laos.

However, the continuity of this story presented many obstacles on cultural communication such as the situation in which is Noi and Sorn traveled to southern Laos.

But during the way to the port, they got lost and took more time to find the boat. Once they found the port, they did not see any boats there. Sorn suddenly said, "Why's the boat not coming?" Noi answered Sorn, "We have paid him already, so he must come. Paying means to reserve the seats. If we don't pay, he will not come." But Sorn thought that if they paid first, the sailor might not come because he could cheat. So it would be fairer to pay after the sailor arrived. Shortly after their conversation ended, the ship came to the port.

### **Scenario 1**

Sorn: Where is the boat, Noi?

Noi: I told him to pick us up and booked the seat an hour ago.

Sorn: It is understandable. If we didn't walk or hang around too much, we would have made it in time. So do you think he will come soon?

Noi: Yes, he must come because we paid him. He should come soon.

Sorn: So we have already paid him? What if we didn't pay him, would he come to pick us up?

Noi: He should come because we have already paid him. Paying means to book the seats.

Sorn : If we pay him first, will he really come? I think we should wait until he arrives and pay him later.

Noi: We did the right thing so that it means we want to book the seats. If we don't pay, he will definitely not come.

According to scenario 1, the reason why Sorn thought like this is because of his past experience of the first day he arrived Laos. While he was sitting at the hotel's lobby, there was a boy coming to him trying to sell his goods such as watches and pens, but he did not want to buy them. So the boy deceived him to eat some bad-

tasted snacks. He then choked and asked for a bottle of water. The boy gave him a bottle of water and charged him for the snack and bottle of water.

### **Scenario 2**

Sorn: I don't want to buy these stuffs. If they all are foods, then I will buy some.

A boy: Yes, I have. (Handed him a package of snack)

Sorn: (took the snack and ate but suddenly choked)

A boy: Here's water. Take this.

Sorn: (took a bottle of water from the boy) Um... thanks.

A boy: A package of snack and a bottle of water. Where is the money?

Sorn: Do you even want to charge this snack that almost causes me to death?

A boy: Yes.

Sorn: (handed the boy money and said) Cheating!

According to scenario 2, at first he thought that the boy would have given him a free bottle of water, but after this incident happened, he had bad attitudes towards Laotians. From this experience, he thought that Lao people had the cunning habit. But then "Noi",

his tour guide, said that if they gave the money to the sailor, it would be considered as booking. This event illustrates the matter of cultural differences. This incident demonstrates that the ethnic bias with stereotype views especially from what the protagonist judge Lao people as deceivers can be regarded as the judgment from the direct experience which can cause a paranoid view of generalization that others may be the same, which in fact people from different cultures may not have similar habits.

In the following days, both Sorn and Noi came to the port and met the sailor they had been hired. The sailor said that he had been waiting for them for a long time in the previous day, but no one came before he left. According to this, it led Sorn to make up her mind that Lao people were not always tricky. And if money has been paid before, the sailor would come as promised. Therefore, stereotyping is the result of cultural learning, and prejudices that we often have towards strangers. This in fact does not mean that every Lao people are dishonest. From what Noi has said that if they wanted to hire the sailor, they would need to reserve the seat with money. If not, he would not come. This is the perception of Lao people; in other words, it can be Laotian's culture. However, Sorn looked the other way that if he paid first, he might be cheated. This reflects the perception of Thai people because it is common for Thais to receive the items before paying.

#### ***4.2 The use of intercultural language***

The use of intercultural language is divided into 3 points: 4.2.1 the use of verbal and nonverbal language, 4.2.2 communication style, and 4.2.3 language and cultural learning.

##### *4.2.1 The use of verbal and nonverbal language includes 3 scenarios:*

4.2.1.1 Sorn visited his relatives at Pakxan and found that his relatives greeted him with a warm welcome. Traditionally, when relatives who were away from their homeland for a long time, once they returned back home, the family would normally arrange the blessing ceremony to bring back their spiritual morale.

#### **Scenario 3**

Sorn: (Greeted everyone with Wai) Hello.

A cousin: Hello, my nephew. Hello. This morning, father, mother, and grandparents all arrange the welcome-back ceremony for you.

Sorn: (Touched the blessing tray and observed his relatives)

A cousin: (gradually tied the blessing thread to each person's arm)

As from scenario 3, at the beginning, he was exposed to this ritual and was feeling a bit suspicious. But as time passed, he felt more comfortable with no reasons because he could feel the atmosphere through a nonverbal language with the joyful and welcoming supports from his relatives. When the ritual finished, he walked around the house. His grandfather introduced him to the pictures of his relatives. When it came to the picture of one woman who used to be the former girlfriend of his father, his grandfather explained that she had also joined in today's hand-fasting ritual as well. While he was explaining the ritual, he also acted accordingly to make it more understandable. Therefore, cross-cultural communication can be explained with the used of nonverbal communications which in

most countries share some similarities. However, some explanations with verbal communications may not be able to convey the complete meaning of the messages.

**Image 1: The blessing ceremony**



**Source:** <https://www.youtube.com/watch?v=5FILTVqwBhs>

4.2.1.2 Sorn and Noi were traveling to Pakxan, but there was no bus because the bus-booking clerk had already sold all the tickets to other customers. Noi told Sorn that there was another way to go to Pakxan which was to soar into the air. Sorn was then a bit confused.

#### **Scenario 4**

Noi: I know the way to Vientiane which is near Pakxan, but you need to lend me some money.

Sorn: Sure! You can take my money. Anyway, can we really go there?

Noi: Of course. We will soar into the air (fly) there.

Sorn: (bewildered face)

Later, they both took the flight to Pakxan.

According to scenario 4, the word “soaring into the air” means to travel in the sky without using any vehicles in Thai meaning, but it means to fly by an airplane in Lao meaning.

4.2.1.3 Noi took Sorn to her friend’s wedding ceremony and introduced him to her friends. Noi’s friends said that Sorn looked like a rakish person.

#### **Scenario 5**

Noi: (swept her hand to Sorn) This is my friend, Sorn.

Noi’s friend: It’s Sorn, isn’t it? You look so rakish. You guys can go inside first. We will follow you later.

Noi: Hey, some of my friends said you look so arrogant. They smiled at you, but you didn’t smile them back.

Sorn: I’m worried that if I smile at them, your friends might think I’m rakish.

Noi: Being rakish here means being handsome.

Sorn: Oh, why didn’t you tell me? So I’m handsome?

In scenario 5, when Sorn was thought of being rakish, he did not smile to anyone. Noi then told Sorn that others thought he was arrogant. Sorn then replied Noi that it was

because her friends thought he was rakish, so he did not want to smile back; otherwise, people would misunderstand him. Noi laughed and said that the word rakish in Lao language refers to “handsome”. Therefore, in terms of the comprehension of the verbal language, some words can only be understood to specific groups of people. If we do not understand the terminology profoundly, it may cause the cultural differences and can perhaps lead to ethnic bias as well.

4.2.1.4 When Sorn first arrived Laos, his conversation with Lao people was mixed with Thai vocabularies. A few days later, he learned to adapt the use of language similarly to Laotians as being presented in table 1

**Table 1: Lao lexical substitution in Thai vocabularies**

<b>Ordinal</b>	<b>Thai vocabulary</b>	<b>Lao vocabulary</b>
1.	[khun]	[caw]
2.	[phom]	[khɔj]
3.	[khɔ:p-caj]	[khɔ:p-caj-la:j]
4.	[sa-wat-di:]	[sa-ba:j-di:]
5.	[nam-plaw]	[nam-la:]
6.	[du:]	[bɛŋ]

From table 1, it can be seen that Sorn chooses to use some of Lao words instead of Thai words such as changing from [khun] to [caw] and [phom] to [khɔj].

Besides, Laotians often pronounce [r] as [h], so Sorn has to adapt his pronunciation accordingly as well. For example, he needs to change the pronunciation of the word [rap-rɔ:ŋ] to [hap-hɔ:ŋ] and [tha:j-ru:p] to [tha:j-hu:p].

This also includes when Sorn first arrived Laos, and he used the word [khrap] as the ending word. Later, he started using the word [bɔʔ], and [caŋ-si:] at the ending of the sentences.

Thus, Sorn has adapted his own way of learning the language by noticing and practicing by himself, causing him become more competent with some Lao words. Nevertheless, he still had the influence of his mother tongue which was an accent, so he had to mix both languages when he spoke. For instance, he spoke with Thai accent but called himself as [khɔj] and called the others as [caw].

#### *4.2.2 Communication style*

Sorn and Noi use an informal language to communicate. Sorn speaks to Noi in Thai, and Noi speaks to Sorn in Lo. However, both of them can understand each other. Even if there are only some vocabularies with different meanings, Sorn usually uses the nonverbal language to solve the misinterpretation in meaning of the language.

#### *4.2.3 Language and cultural learning which includes 2 scenarios*

4.2.3.1 Noi took Sorn to her friend’s wedding ceremony and taught him how to do a Paslop dancing which was very popular in carnivals, and night clubs especially in the

wedding ceremonies. He said that when he was young, his father used to teach him how to dance, but he was not good at it. So Noi had to be his teacher at this time.

### **Scenario 6**

Sorn: Noi, What kind of dancing are they doing now?

Noi: It's called Paslop dancing. We usually dance like this every time we arrange some carnivals.

Sorn: My father used to teach me how to dance when I was young.

Noi: If you have danced before, it would be easy for you.

Sorn: But I think it would be better to have someone teach me.

In scenario 6, Paslop cultural dancing is what Sorn learned when he was young. Even if it was a long time ago, his memories still remained. Therefore, when Noi taught him again, it turned out that he did it quite well because he had experienced it before.

4.2.3.2 When Sorn and Noi stayed at one villager's homestay, they received warm welcome from the host, and they were arranged to have dinner together.

### **Scenario 7**

Sorn: I don't have money in kip, but dollars. Can you take it in dollars?

Noi: (immediately took money from Sorn's hand in order not to make the host felt discomfort)

Sorn: I don't understand what's wrong with it? I just wanted to repay their gratitude.

Noi: If we give them the money, it is considered rude because we are like one of their guests. We only need to help them with some house chores to pay them in returns.

In scenario 7, Sorn picked out a dollar and told the host, "I don't have it in kip. I only have it in dollars". While he was about to give the host his money, Noi suddenly held his hand back and told him to wait until dinner finished so that they could wash the dishes in returns. Sorn asked Noi back that he did not understand what his fault was. He only wanted to repay the host's kindness. Noi replied that if they gave the money to the host, it would be considered as an insult because they were like one of their guests, and what they could do was to help them with the house chores.

Because he lived in the city, he did not understand the generosity. When guests visited his home, he thought that he only needed to give money in returns of the items received.

Therefore, he has learned Laotian's cultures in the way that if we stay at someone's house, the best way to compensate the person's kindness is to help with the house chores which is considered as being respectful.

## **5. Discussion and Conclusion**

As from the analysis of intercultural communication, it reflects that the main character, Sorn, understood well about the differences between cultures despite he had a bad experience with the Laotian boy who deceived him to buy the snack, leading him to assume that all Laotians were cunning. This is consistent with Kimprakone (2008) who states that stereotype viewpoints consists of two aspects. They are 1. a structured stereotype: an indirect perception of information through education, mass media, and

documents or historical events; and 2. an unstructured stereotype: a direct perception of information through experiences by having an interaction with others so that thought and attitude have been completely established.

Therefore, Sorn's incident is considered to be the perception of the direct experience by herself. However, what he thinks cannot indicate or judge that Laotians are fraud because if we notice the whole story, it is apparent that Lao people are generous and considerate to others. For instance, When Sorn was having dinner at the homestay and was going to give money to the house owner for a compensation, he found that it was not appropriate to do that. This is because it is regarded that the best way to show someone gratitude is to help with the house chores.

Moreover, the use of intercultural language can be divided into 3 points which include 5.1 the use of verbal and nonverbal language, 5.2 communication style, and 5.3 language and cultural learning.

5.1 The use of verbal language: It is considered as the best tool used for communication. But if the verbal language cannot be used, nonverbal language or body language can be put in placement. However, nonverbal communication in some countries can impart different meanings.

5.2 Communication style: Even though Sorn is in an employer position, and Noi is his employee, it can explicitly be seen that they both use an informal language to make the conversation go smoothly, which does not cause both the sender and receiver's discomfort.

5.3 Language and cultural learning: It can be seen that Sorn used to have experiences such as a Paslop dancing in Laos when he was young. In despite of the time passing by, he still remembered that his father had taught him this dance before. It is a sign which interconnects to the fact that although he was grown up in Thailand, yet he never forgot their ancestors' cultures.

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# **AWARENESS OF LOVE FOR HOMETOWN THROUGH BUN BANG FAI (ROCKET FESTIVAL) FROM COLLECTIVE MEMORY OF NORTHEASTERNS IN THE SOUTHERN BORDER AREA OF THAILAND<sup>1</sup>**

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## **Abstract**

*Bun Bang Fai (Rocket Festival) of the Northeasterners in Phukhao Thong Sub-district, Sukhirin District, Narathiwat Province is the only one tradition in the Southern part organized with a collective memory of migrants from the Northeastern part. The first rocket festival was in 1975 and the 38<sup>th</sup> festival was held in 2017. The festival is invented and reinvented activities in which Northeastern identities are used to decorate Bang Fai or rockets and included in the Bang Fai procession, Serng, a traditional quick-tempo dance and creation of Pha Daeng and Nang Ai representations in the ritual of fertility that is carried out to ask for less rain. The new generations of people have absorbed their being local Southerners so much that they forget their roots of being Northeasterners. Hence, the revival of Northeastern culture through Bun Bang Fai or the rocket festival is to raise awareness of love for hometown (the Northeastern part) with participation of the community through legends, beliefs, traditions, and the rituals of Bun Bang Fai.*

**Keywords:** Awareness of Love for Hometown, Bun Bang Fai, Rocket Festival, Collective Memory, Isan Culture

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<sup>1</sup> THE ARTICLE IS A PART FROM TITLE "ISAN CULTURAL IDENTITY MAINTENANCE IN THE SOUTHERN BORDER AREA: A CASE STUDY OF PHUKHAO THONG SUB-DISTRICT, SUKHIRIN DISTRICT, NARATHIWAT PROVINCE"

## 1. Introduction

Northeasterners in Phukhao Thong Sub-district, Sukhirin District, Narathiwat Province are a group of people migrating from the Northeastern part of Thailand since 1975 under the Asian Development Bank (ADB) supported project for the Department of Public Welfare. The project invited people from the Northeastern part of the country to resettle in the Southern border area as one way to protect it. Each family was allotted with 16 rai of land for agricultural activities and 2 rai for living. These people still have awareness of love for their Northeastern hometown and thus organize *Bun Bang Fai* (Rocket Festival) regularly according to the legend and their beliefs to perform the same rituals as those in the Northeast. The festival has become an important tradition and has been called the only *Bun Bang Fai* in the Southern part of the country (Boonprakarn, Thepsing and Sangkhaphan, 2017).

*Bun Bang Fai* of the Northeasterners held in the Southern border area is organized with a collective memory of Northeasterners who moved to settle in the Southern part of the country and desire to create an atmosphere that resembles their hometown, to revive their being Northeasterners, and to instill in the younger generations awareness of love for their Northeastern hometown through practices in accordance to their legends, beliefs and traditions (Noi, interviewed on May 22, 2016). This corresponds with a study by Tanabe and Keyes (2002) which indicates that “social memory” is a perception of the past through experience of the individual’s feeling and a new perception created from imagination of memories of the past and storytelling (Matsuda 1996 cited in Dikhunhot, 2006). Moreover, it was found that recall can take place through activities and rituals that construct relationships in the community (Tanthuwanit, 2015) to pass on the memories to the next generations. According to Connerton (2006), the practices of the Northeasterners are bodily practices. Even though the three Southern border provinces of Thailand are full of situations resulting from the unrest, *Bun Bang Fai* is still held to inherit the memories and to make them congruent with the Northeastern *Heet 12* or the 12 traditions of the 12 months of the year (Srisuphan, Aphichatwanlop and Manorom, 2011). The festival helps reduce worry about violent situations in the three Southern border provinces and create awareness of history among the Northeasterners to make them love their roots and souls of being Northeasterners and never to forget it.

This phenomenon prompted a question about the characteristics of the creation of awareness of love for hometown through organizing *Bun Bang Fai* with a collective memory of the Northeasterners in the Southern border area. The reason for this is to make all generations of people in the area to mingle and do activities together so that they would love and have good feeling towards each other without limitations concerning race and religion. Another reason is to preserve the traditions, culture, and rituals. Furthermore, the results of the study would make the people love each other, have unity, know how to work together in a team, and help preserve the tradition so that it continues to exist in this new land the same way as it has always been in the Northeast, their hometown.

## 2. Research methodology

The qualitative research method was employed. Data were collected through non-participant observation on *Bun Bang Fai* activities and through in-depth interviews with 9 informants consisting of community core leaders, folk wise men, and people in Phukhao Thong Sub-district, Sukhirin District, Narathiwat Province who participated in *Bun Bang Fai* activities. For data analysis, data were categorized, interpreted, concluded, and presented with analytical description.

## 3. Results

### 3.1. Creation of *Bun Bang Fai* identities for collective memory

Regarding knowledge in decorating the *Bang Fai* (rocket) float, people in Phukhao Thong Sub-district learn and pass it down from generation to generation hoping that the Northeastern wisdom will be inherited in Phukhao Thong Sub-district, Sukhirin District, Narathiwat Province. The *Bun Bang Fai* float in Phukhao Thong Sub-district is full of the Northeastern atmosphere, and therefore, is part and a symbol of Northeastern culture. It is like the only thing that reminds people not to forget their roots of who they are and where they are originally from. *Eh Bang Fai* or decorations of rocket floats for the procession in Phukhao Thong Sub-district can be divided into two categories: traditional and modified decorations (Pho Yai Bunterm, interviewed on June 8, 2016) detailed as follows.

#### 3.1.1 Northeastern identities through *Bang Fai Eh* decoration



**Figure 1** Traditional decorated *Bang Fai* (rocket)

*Source: Photo taken by the researchers on June 10*

The decoration of the rocket float that retains traditional Northeastern identities is carried out by persons with artistic skills. Some young people who are children of Northeasterners in Phukhao Thong Sub-district are artistically talented and this is considered fortunate for the village to have designers who can decorate the *Bang Fai* float to resemble those in the Northeastern part of the country. The elongated rocket is placed on the roof of a pick-up truck with the front slanting up for a dragon head to be put on. Thus, the dragon is laid along to cover the rocket, and it looks like a slithering dragon.

### 3.1.2. The mixed decorated *Bang Fai* float between Northeastern and Southern identities

Modified decoration of the *Bang Fai* float includes a traditional Southern *Ruea Phra* (Buddha image boat) in the cover of the slanting rocket on the roof of the pick-up truck without a dragon head on it but a whole dragon is made and placed on the rocket. People in the community dedicated their time and money to making the dragon. The beauty and exquisiteness of the patterns and decorations of the float and the dragon are usually used as criteria in assessment of the procession. In terms of creativity, the mixed decorations of the Southern cultural features in the rocket show cultural identities of the Northeastern community in Phukhao Thong which are different from those in the Northeastern part as reflected in the interviews.

“*Bang Fai* floats here are not the same as those in the Northeast because we mix the features of *Ruea Phra* (Buddha image boat) in our *Bang Fai* float. So we have our own uniqueness.” (Kao, interviewed on June 9, 2017).

The mixed decorations of the float are derived from various factors. Most designers are Southerners. For example, the decoration of the *Bang Fai* float of Ban Tomo village is done by an art teacher from a school in Takbai District who is originally from Songkhla Province. He has designed and decorated *Ruea Phra* when he lived in Songkhla and now he volunteers to help decorate the *Bang Fai* float every year without pay. He said

“I have helped design *Bang Fai* floats many times because I feel attached to this village. When I see unity among people here, I would like to participate in it. I don’t want any pay. I only want to help them inherit the tradition. That’s all. (Akhom, interviewed on June 20, 2016)

The abovementioned phenomena reflect that even people from outside the community want to help with *Bun Bang Fai*, and they bring with them their own culture, beliefs and ideas that have made changes in the identities of *Bang Fai Eh*. This is a mix of Northeastern and Southern cultural identities.



**Figure 2. Mixed decorated *Bang Fai* floats**

*Source: Photos taken by the researchers on June 10, 2016*

*Bun Bang Fai* preparation takes approximately a month when people in the community ranging from children to elderly people feel that they must help in making

*Bang Fai* (rocket), decorating *Bang Fai*, practicing and rehearsing *Serng* dance because *Bun Bang Fai* (rocket festival) is a religious ceremony. Everyone helps make different parts of *Bang Fai* and helps with other activities that are part of the festival so that when the day comes, all will be completed, beautiful and ready for competition. Villagers participate in planning, making decisions about the design, helping to make different parts of *Bang Fai Eh* (decorated rocket) and *Bang Fai Chut* (ordinary rocket), and participate in the procession. Therefore, when the day of the festival draws near, they help work on everything almost all day and all night so that all will be ready in time. This is considered as wisdom transfer and creation of awareness of love for hometown.

### ***3.2. Creation of awareness of love for hometown through participation in decorating Bang Fai by people of all genders and ages***

Decorating *Bang Fai* is such an event that is not less important than the *Bang Fai* competition day. Around one month before the event takes place, work is distributed and assigned. The main person is the village headman who calls his team to plan and distribute the work, directs and coordinates the work. Thus, the Northeastern atmosphere returns even before the tradition of *Bun Bang Fai* begins. Carving patterns from the Internet are selected and used to decorate *Bang Fai*. They print the patterns to imitate and adapt to make them suitable for the materials available in the village.

A place for decorating the *Bang Fai* float is usually a place which is a center of the village that is large enough for a pick-up truck to be parked with a large area for people to sit and do parts of the decoration together. Elderly women and children sit around a pile of colorful paper and other materials to make garlands and other types of decorations. When working together like this, they cook and eat together, and most dishes are native northeastern food. Northeastern music is played to raise awareness of being Northeasterners. Men do handicraft such as carving patterns or lifting heavy items as evidenced in the following interview excerpt.

“Decorations of the *Bang Fai* are changed each year. We don’t use old materials of last year for this year because we want everyone to get together and work together. This is a way to raise the awareness of love for our hometown and not to forget our roots and home in the Northeast...” (Tee, interviewed on June 11, 2016)

Thus, decorating *Bang Fai* gives Northeasterners in Phukhao Thong activities to do together continuously to show their identities and raise awareness of love for their hometown in the Northeast and to stimulate or call back the spirit and soul of being Northeasterners.



**Figure 3 Adults and children making garlands, ornamental and decorative parts**

*Source: Photos taken by the researchers on June 10, 2016*



**Figure 4 People making ornamental and decorative parts of *Bang Fai* with banana leave, bamboo, colorful paper and Styrofoam**

*Source: Photos taken by the researchers on June 9, 2016*

### ***3.3. Creating awareness of love for homeland through beliefs, legends and rituals of Bun Bang Fai***

In organizing the *Bang Fai* procession of Phukhao Thong Sub-district, the beliefs and legends of Phaya Thaen, Phaya Khankhak (the King toad), Pha Daeng and Nang Ai play an important role the same way as they do in the Northeast. These beliefs and legends are the origins of the tradition of asking for rain from the sky when the rainy season comes because the Northeast is a drought region. The rain-asking ritual is performed according to the beliefs. In the ritual, a young woman and a young man sit on the *Bang Fai* float to represent Pha Daeng (the man) and Nang Ai (the woman) to ask for rain. However, Phukhao Thong is in the Southern part of the country located in a tropical region with a lot of rain and does not have to face drought; hence, the ritual in Phukhao Thong is not to ask for rain but to ask for less rain so that people can tap rubber trees as said in the following excerpt.

“... In the Northeast, they hold *Bun Bang Fai* to pay respect to Phaya Thaen when asking for rain. We have a ceremony to make offer to him just like people in the Northeast do but in our case we ask for less rain and for the rain to stop. The village headman performs a ritual of planting lemongrass to stop the rain because if it rains during the festival, it will not be fun. Well, it is to raise awareness of love for hometown through

storytelling, especially about the legends so that the new generations know about it...” (Wanchai, interviewed on June 11, 2016)

The above phenomena reflect that the Northeasterners have brought their culture to the South such as *Bun Bang Fai*, northeastern food, and the northeastern dialect which are their social memories. They raise the awareness of love for hometown through revival of being Northeasterners even though they have moved to the South for a long time as reflected in the excerpts below.

“I know Pha Daeng and Nang Ai, and Phaya Thaen because my grandparents told me about them. Northeasterners including my parents have such beliefs. So that’s why we have *Bun Bang Fai*. This ceremony makes me think of the Northeast even though I haven’t been there. I’ve seen pictures of the festival and I feel attached to it...” (Jane, interviewed on June 9, 2017)

“My parents speak the northeastern dialect and eat northeastern food. *Bun Bang Fai* is a fun festival and it makes me want to go to the Northeast. I want to see my parents’ hometown, to see what it looks like. I do love being a northeastern child...” (Surachai, interviewed on June 10, 2017)

“I come to join *Serng* dancing, a dance with a northeastern tempo but mixed with gestures of a southern dance where people pan for gold. So the gestures of gold-panning have been incorporated in *Serng* dancing. I’ve heard about many legends from by parents and I also see them in *Bun Bang Fai*. They are in my blood, I guess...” (Kaeo, interviewed on June 9, 2017)

Furthermore, it was found that the younger generations have beliefs about Pha Daeng and Nang Ai, Phaya Thaen and Phaya Khankhak through legends and rituals by participating in *Bun Bang Fai* which make them feel attached to the land where their parents and grandparent are from. They participate in *Bang Fai* procession by performing Klong Yao (long drums) and *Serng* dancing. These are one way that people in this sub-district create awareness of love for hometown and not to forget their roots and identities as Northeasterners that might have faded away as time goes by.

## **Discussion**

Maintaining the identities of traditional decorations of *Bang Fai* is to inherit it according to the northeastern tradition that reflects the selves of Northeasterners. Creating the mixed identities incorporating southern identities and culture is a way of selecting traditions and rituals in a collective memory so that Northeasterners can recall their memories quickly and fun which help them forget hardships and dangers resulting from the unrest in the Southern area. Recalling social memories among the Northeasterners in the Southern region requires creation of awareness of the “motherland” which Srisak Walliphodom explains that wherever people are born, they must have awareness of that land (Phimthong, 2013). Therefore, people in Phukhao Thong Sub-district must select an important ritual which is a ritual of fertility to raise awareness of love for their hometown to call out their souls and roots of being Northeasterners while not forgetting the Southern

part where they live. This is carried out through participatory learning using *Bun Bang Fai* as a means.

Creating awareness of love for hometown requires instilling it in the younger generations by reproducing stories and legends through *Bun Bang Fai* that bring the younger generations to join the older generations in doing activities together. This is in agreement with a study by Connerton (1989 cited in Narasaj, 2010) which indicates that memories are something that are reproduced and passed on continuously in society through repeated practices, celebrations or other actions. Therefore, to instill in the younger generations awareness of love for hometown, it is necessary to give importance to them and have them participate in all processes of activities including making the rocket, decorating it, joining in *Serng* dancing in the procession, cooking northeastern dishes, and speaking the northeastern dialect. Similarly, Inpotha (2011) on mentioning Srisak Walliphodom states that “Local history must be created by local people and transferred to and instilled in children because when children have enough knowledge about their local history to transfer to others, it is considered a type of group learning.” In the dimension of cultural life, people from outside can see only artistic objects, traditions, patterns but they cannot see the relationships that these things have with people; and they cannot see movements. Children can learn about cultural life from their parents and grandparents as they begin to learn about it from learning about themselves and their way of life. In addition to their own parents and grandparents, elderly people in the community are the best persons who can transfer cultural life to children. As a result, there are close relationships among people in the community. Elderly people are happy to tell children about the stories in the past while exchanging knowledge and learning about local socio-culture that they have come to love and eventually become aware of the love they have for their hometown.

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13. Pho Yai Bunterm, interviewed on June 8, 2016. Phukhao Thong Sub-district, Sukhirin District, Narathiwat Province

14. Kao, interviewed on June 9, 2017. Phukhao Thong Sub-district, Sukhirin District, Narathiwat Province

15. Akhom, interviewed on June 20, 2016 Phukhao Thong Sub-district, Sukhirin District, Narathiwat Province

16. Tee, interviewed on June 11, 2016. Phukhao Thong Sub-district, Sukhirin District, Narathiwat Province

17. Wanchai, interviewed on June 11, 2016. Phukhao Thong Sub-district, Sukhirin District, Narathiwat Province Phukhao Thong Sub-district, Sukhirin District, Narathiwat Province

18. Jane, interviewed on June 9, 2017. Phukhao Thong Sub-district, Sukhirin District, Narathiwat Province

19. Surachai, interviewed on June 10, 2017. Phukhao Thong Sub-district, Sukhirin District, Narathiwat Province

20. Kaeo, interviewed on June 9, 2017. Phukhao Thong Sub-district, Sukhirin District, Narathiwat Province

# CONTEMPORARY PATTERNS OF CHINESE MIGRANTS TO THAILAND

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## Abstract

*After China's major economic reform in 1978, there was a large number of Chinese people migrated abroad. Thailand is one of their most popular destination in Southeast Asia alongside Myanmar, Singapore, Vietnam and Malaysia. At the present, the number of "New" Chinese migrants is still increasing, and expected to be more in the future. This fact draws the attention of this paper to discuss the differences of Chinese migration pattern to Thailand between the previous generation and the present one. This differentiation indicates that the present migration brings about changes to the representation of Chinese settlement in Thailand in both social cultural and economic meaning.*

**Keyword:** Chinese migration Migration pattern Thailand

## 1. Introduction

It is believed that the earliest Chinese migration to Thailand dates back to the 13<sup>th</sup> century during the Sukhothai kingdom (Skinner, 2003). According to Chansiri (2008), there have been five major migrations of Chinese to Thailand. The first migration began during the first Thai Kingdom (Sukhothai) in 1253, Thailand established relation with Chinese emperor and the Chinese began to arrive in Thailand to trade. The second migration began during the 14<sup>th</sup> century (1318, at the start of the Ayutthaya till 1766). The Chinese arrived in Thailand during this period to fill a labor shortage. The third migration spanned 40 years between 1767 and 1807, before and after Rattanakosin (Bangkok) was established (in 1782). The fourth migration took place over the course of 130 years, from 1807-1937, its make Chinese population in Thailand grew rapidly in this period, 230,000 in 1825 (4.75 percent of the total Thai population), grew to 337,000 in 1860 (6 percent of the total Thai population) and 792,000 in 1910 (9.4 percent). The fifth migration began in 1938 and extending until the 1980s.

Sakkarin (2015) wrote on his study (the fourth wave: Southeast Asia and Chinese migrant), Chinese began to migrate oversea in large number since the mid-17<sup>th</sup> century, three waves of Chinese out-migration had contributed to the emergence of Chinese communities and networks of Chinese diasporas around the globe, especially Southeast Asia.

Since China's major economic reform in 1978, when the People's Republic of China (PRC) re-opened the door to the world from which its people had been hermetically sealed for almost half century, there was the large number of Chinese have ventured out in what

has been termed the “New Chinese Migration”. According to Zhuang and Wang (2010), some two and a half million Chinese have made their way to southeast Asia, with the large numbers in Myanmar(over million), Thailand and Singapore(just short of half a million), and smaller number in Vietnam and Malaysia. By 1990, there were already estimated 20 million ethnic Chinese settle in Southeast Asia.

In Thailand, the new pattern of migration make this contemporary Chinese migration are different from the previous generation: Their place of origin is more diverse; they have higher education levels; they migrate to Thailand for different reasons - business, investment, study and for job opportunities.

## **2. Diversity of places of origin**

The previous group of the Chinese migrant in Thailand, classified by their dialect, can be identified by the following 5 group. The first group is Teachiu, the largest Chinese dialect group in Thailand, they come from the northern part of Guangdong province, Chaozhou and Shantou area. The second group is Hakka, the second largest group in Thai kingdom, they come from the southern east coach of china stretching from Fujian to Guangxi and Guangzhou. The third group is Hainanese, the group of migrant from Hainan Island a part of Guangdong province. The fourth group is Cantonese, the largest group in South China, they mainly come from the center city of Guangdong, Guangzhou. The fifth group is Hokkien, the dialect group from city in Fujian province southern china. The last group is Yunnanese, the group of migrant from Yunnan Province, normally settle in the northern part of Thailand. In term of number, 56 percent belong to the Taechiu group, 16 percent are the Hakka, 12 percent are Hainanese, 7 percent are Hokkien, 7 percent are Cantonese and 2 percent from the group such as the Yunnanese (Chansiri, 2008).

Because of the long historical migration of Chinese to Thailand, it is important to recognize the current ethnic Chinese population of Thailand is not a homogenous group. The contemporary group of Chinese migrants are different from previous generation. Their place of origin is more diverse, not just from Guangdong and Fujian province. There are more and more Chinese new migrant from the different major city of China such as Beijing, shanghai, Guangxi and rural regions like Shandong, Sichuan, Nanning, Chongqing and Zhejiang. Reflexing by the number of different style Chinese restaurant appeared in many new Chinatown in several part of Thailand, that become more diverse than the past, such as Yunnan cuisine, Sichuan BBQ, Peking roast duck, and Chongqing hotpot.

## **3. Differentiating contemporary Chinese Migrants**

Gungwu Wang (1991) differentiates the Chinese migrant in to several types: the first type is the trader who went oversea in the 13<sup>th</sup> century; the second type is the coolie or the unskilled, landless laborers from the peasant class who move to Thailand during the 19<sup>th</sup> and 20<sup>th</sup> centuries; the third group is the sojourner from a more educated and cultured class that left china after 1949. But nowadays, because of the high level of contemporary economic cooperation, in the form of bilateral trade, Chinese investment and contracted projects between Thailand and china have brought the new group of Chinese migrated to Thailand.

Skilled migrants, the group of contemporary migrants become more educated, skillful, enterprising, and conversant with English and Thai language skill. They have allowed to venture into a variety of fields, including Law, Banking, public relation, Language Teaching (Chinese language) and retail industries. The department of employment, Thailand, reported that 18,812 Chinese obtained work permit in 2015, almost double the figure of 9618 Chinese in 2011.

Student, in 2013, the number of Chinese student enrolled in college entrance examination reached 9.12 million in this number only 87 percent of students can get into the university (Hongzhi Yin, AtthapatRuangkanjanases, and Chenin Chen, 2015). At the same period, the number of Thai student has dropped as a result of the low birth rate and the increasing number of University in Thailand affect Thai University (including private University and public University) have begun to sign agreement with Chinese institution to bring in Chinese student. Office of the Higher Education commission statistic show the number of Chinese student in Thai tertiary institutions has grown rapidly from 4618 student in 2011 to 6157 students in 2015.

#### **4. Different motivation during different periods**

The transnational migration of Chinese in contemporary period was more diverse than in the past. The old immigrant often fled from unstable social conditions in china, such as War or natural disaster (Sukolartanametee, 2012; Jiang, 1992; Skinner, 2005; Chantavanich, 1991). But the outcome of China's economic reform have made the contemporary Chinese people different from the past. It affect the transnational migration pattern of these immigrants were different from those in the previous generation, the new migrant had more power to make the decision to migrate by themselves in order to seek areas of opportunity where they could increase their income and improve their quality of life (Lin, 2017). The new group of Chinese migrated to Thailand for seeking economic opportunity rather than mere economic survival (Sakkarin, 2012). As a survey by the institute of Asian Studies Asian research centre for migration at Chulalongkorn University found many new Chinese migrant bring significant funds to invest in strat-ups in Bangkok, such as 30 shipping and logistics operator, 14 Chinese Restaurant and 18-20 beauty product shops which 100 percent owned and operated by Chinese.

#### **5. Conclusion**

In conclusion, Change in the social context, economic condition and political policies of both Thai and China in the globalization era led to the new pattern of migration among the Chinese Who moving to seek for the new opportunity in Thailand. And this will change the image of Chinese migrants in the past generation who “travel with just a mat and a pot<sup>1</sup>”.

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<sup>1</sup> The Thai expression on the Chinese migrants in the past who travelled with just a few belonging, enduring many hardships in the hope if they could get to Thailand they would enjoy a prosperous life.

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# GEOGRAPHIC FEATURE INFLUENCES LIFE STYLE AND DISEASE

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## **Abstract**

*Bile duct cancer is commonly found in the Mekong River Basin, i.e. in the northeast of Thailand, where the main protein source is fish. The villagers usually consume uncooked cyprinid fish, which is infected with the infective stage of liver fluke. Northeastern Thailand has a dry savanna climate, but during the rainy season, floods overwhelm the river and wetlands. The villagers use various methods to catch fish and they like eating the fish from the wetland, uncooked. Besides their daily consumption of fresh fish, it is also preserved by various methods; fermented, pickled, or soured for eating during the dry season or for sale at markets. However, the liver fluke sometimes remains vital and if infected, people can carry the infection in their biliary tract for 20-30 years, during which it can cause jaundice, followed by cancer; most sufferers die soon after diagnosis. The geographic features and attitudes to raw food influence upon life style and disease.*

**Keywords:** Geographic feature, life style and disease, Bile duct cancer

## **1. Introduction**

The Mekong River is a long river flowing through China, Myanmar, Laos, Thailand, Cambodia, and Vietnam. It is the 7<sup>th</sup> longest river in Asia, extending up to 4,350 km; it has many small tributary rivers. Water from the river basin flows on to merge with the Mekong River. During the rainy season it receives rainwater from the influence of the Inter-tropical Convergence Zone (ITCZ) and the Southwestern monsoon that create huge rainfall. (<https://en.wikipedia.org/wiki/Mekong>)

During this time, while passing through Northeastern Thailand, the river will be deluged with water, causing flooding, creating oxbow lakes, and wetland. It is in these

areas where so many fish are found. During this period, the villagers are able to catch fish and it provides an important source of protein for the area. The villagers will spend all day catching fish to sell and also take some home for their own consumption. The fish are made into various types of food, one popular dish being a raw fish salad (Koi Plaa) which they eat while catching the fish. Much of the catch will be made into Pickled fish (Plaa Jom, Soured fish (Plaa Som) and Fermented fish (Plaa raa), for consumption during the dry season. This ensures they have enough to eat throughout the year. The cyprinid fish has scales that are a habitat of liver fluke. When the villagers eat uncooked fish, the parasite-liver fluke is still alive and is able to enter into the human body; the people will be infected by the parasites and face the real possibility of developing bile duct cancer (cholangiocarcinoma). Thepporn Mungthanee. et al. (2017) found that ethnicity and ethnic culture played a major role in facilitating raw or undercooked cyprinid fish consumption, the distribution of this eating behavior, and the control and reduction of the eating behaviors. In terms of culture, the simple ways of life, in which the people had a close relationship with the ecosystem and their regular eating behaviors were inherited from previous generations, were the major facilitating factors in raw cyprinid fish consumption. The objective of the study is how geographical features of the Mekong river influence on the lifestyle and diseases emanating from the eating behaviors in northeastern Thailand.

## **2. Method**

The study area is the wetlands of the Mun River, known as Thung Kula Rong Hai. This area is flooded during the rainy season. Observation and interview with 30 villagers from 3 villages in Don Ron district, Amphoe Rattanaaburi, Surin Province was employed to find out their way of life; how they catch fish, eat raw fish salad, preserve fish in various forms and the diseases from eating behavior in the study area.

## **3. Results**

The Mekong River flows along part of Northeast Thailand, it is the main river of the Indochina area and flows through China, Myanmar, Laos, Thailand, Cambodia, and Vietnam. The Mekong is the 12<sup>th</sup> longest river in the world and the seventh longest in Asia; it is approximately 4,350 km long and covers an area of 795,000 square kilometers. The Mun River and the Chi River flow into the Mekong. During the dry season, there will be no rain for around 6 months, this is the winter season which starts from mid-October until mid-February. Most of Thailand experiences dry weather during this season with mild temperatures. The summer season, or the pre-monsoon season, runs from mid-February until mid-May and is characterized by warmer weather, resulting in drought. During the rainy season, this area comes under the influence of the Inter-tropical Convergence Zone (ITCZ) and the Southwest monsoon, which bring rainfall from mid-May to mid-October. This season is characterized by abundant rain with August and September being the wettest months of the year. This will occasionally lead to flooding because rainfall caused by the southwest monsoon, the Intertropical Convergence Zone and tropical cyclones contribute to producing periods of very heavy rainfall during the rainy season. The Mekong becomes

flooded, rising up 10 meters higher than during the dry season and floods into the lowlands along the river. ([https://en.wikipedia.org/wiki/Geography\\_of\\_Thailand](https://en.wikipedia.org/wiki/Geography_of_Thailand))

During the rainy season in Northeast Thailand, rainfall in Laos or northern Myanmar will flow into the upper Mekong River causing the water level to rise. It is possible that the rainfall will not cover all watersheds of northeastern Thailand; therefore, the water level in the Mun River may be lower than the level of the Mekong. Consequently, Mekong river water will flow into the Mun River. When the rain falls in Northeastern Thailand, the water level of the Mun River will rise, becoming higher than the water level of the Mekong River, causing water from the Mun River to flow into the Mekong. When the Mekong and the Mun are at the same level, water from the Mun cannot flow into the Mekong, leading to flooding of the lower flood plain of the Mun River, known as Tung Kula Rong Hai. This water flow system in the Mekong river basin has made the Mun River abundant with many aquatic species. The study area is a place where there are many kinds of fish, especially at the end of the rainy season.

The study area is Ban Don Rad, at Amphoe Rattanaburi, Surin Province. The village is located on the flood plain of three main rivers; the Mun, Kha, and Khan. Many oxbow lakes such as; Kud Nong, Nong Samrong, Nong Han Hee Nong Khong, Tambon Nong, Kud Nong, Nong Kham, Nong Bua, Nong Kha, surround the village. There are also many types of forests containing many specific plants.

The wetlands of the Mun River, Thung Kula Rong Hai, will be flooded every rainy season. It is a habitat for wildlife, aquatic animals and other living things. The fish that are found in this area are Walking catfish, Clown knife fish, Three spotted tilapia, Horse face loach, *Channa striata*, *Notopterus notopterus*, *Anabas testudineus*, *Trichogaster pectoralis*, and the important fish species of the Cyprinidae family such as Hampala barb, Siamese mud carp, Sword minnow, Eye-spot barb, Smith's barb, Black sharkminnow, Apollo shark, and Borapet rasbora.



*Fish in the Cyprinidae family (<https://www.google.co.th/search.Cyprinidae+family>)*

How to catch fish: The rainy season is June - October. The villagers begin to plant rice and harvest in November. The rainy season is the fishing period, especially the late rainy season, because of the water flow out from the Mun into the Mekong. In January - February, the water level in the river is very low, making it easier to catch the fish. Villagers use bamboo fish traps to catch fish. Generally the bamboo fish trap's size is from 5-15 cm wide and 40-80 cm long, some fish traps are bigger, it depends on the purpose of the fishing. The bamboo fish traps are set up along the river, the water flow allowing the villagers to catch the fish that swim along the river.



[https://en.wikipedia.org/wiki/Fish\\_trap](https://en.wikipedia.org/wiki/Fish_trap)

Another way of catching fish is from inherited folk wisdom, a traditional way called ‘Lom Yok’ (Sieged fish), it imitates fish nature. The villagers learn that when the water level is reduced the fish start to find a safe area by hiding in plants in the water. The villagers understand this behavior, so they use a trick to catch the fish by placing tree branches in the water by the riverbank and the fish swim into the brush to hide. There are two sizes of Lom Yok; the small one is 3-4 meters and the large one is 7-8 meters. To use the small Lom Yok (3-4 meters), 4-5 villagers help by using a fish net to surround the Lom Yok, and then the villagers can remove the tree branches and catch the fish in the net.

Following tradition, the fishing villagers will have their lunch together, eating raw fish salad or Koi Plaa. The fish they prepare for the salad is of the Cyprinidae family. The villagers take sticky rice from home to eat with the Koi Plaa and it is said to be very delicious. They especially enjoy this because they have the chance to eat together. The fish are *Channa striata*, Walking catfish, Clown knife fish, *Notopterus notopterus*, Three spotted tilapia, *Anabas testudineus*, *Trichogaster pectoralis*, Horse face loach, Hampala barb, Jungle perch, Siamese mud carp, Gouramis, Sword minnow, Loach are the most common catch in the Lom Yok.

The villagers can catch a lot of fish in this way, some are sold to people in the village and some are for self consumption. Although the villagers may boil or grill, the most popular style is eating the fish raw, ‘Koi Plaa’, which is a raw fish salad with a spicy dressing. Koi Plaa is made from fish of the Cyprinidae family such as Minnow, Siamese mud carp, Silver barb, Hampala barb, Black sharkminnow.

Preparing the fish; the villagers cook the fish by boiling, grilling or frying but their specialty dish is a raw fish salad!

How to prepare raw fish salad: They mostly use only fish from the Cyprinidae family in the raw fish salad. Cyprinidae family is Hampala barb, Siamese mud carp, Sword minnow, Eye-spot barb, Smith's barb, Black sharkminnow, Apollo shark, and Borapet rasbora. First they cut off the head and gut it. Then they have to wash the fish in water, twice, and shake dry. They smash the fish to soften it and then cut it into small pieces. Next, it is finely chopped. For the sour taste, the villagers mix red ants into the fish meat and then knead, cream, and crush until the white color of the fish meat changes to be an opal white color. At this stage the villagers believe that the fish meat is ‘cooked’ already! Finally, the fish is mixed with roasted rice, cayenne pepper, onion, coriander, peppermint and fish sauce. Now the raw fish salad is ready to eat. Raw fish salad is one of the most popular, delicacies for villagers in this area.

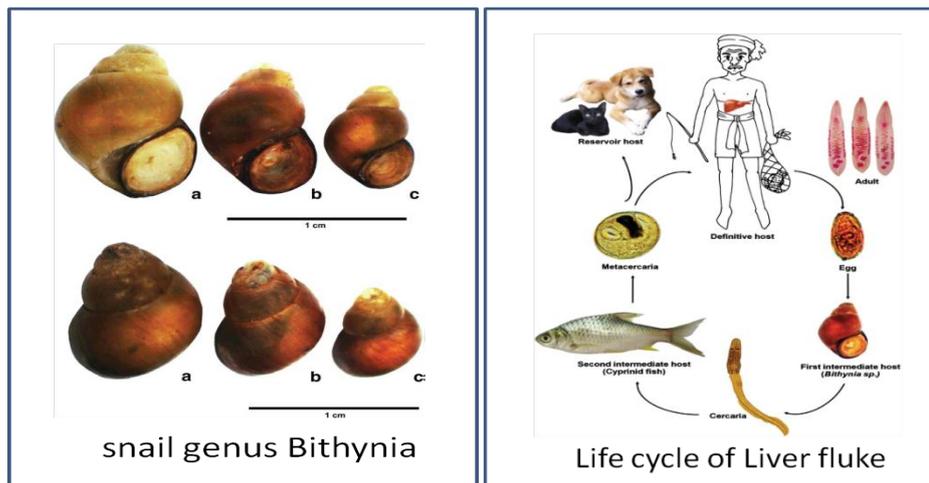
In addition, the villagers will preserve some fish as Soured fish (Plaa Som), Pickled fish (Plaa Jom) and Fermented fish (Plaa Raa) using the following processes and methods of preservation.

Soured fish (Plaa Som) is used to preserve fresh fish up to around 10 kilograms. First remove the fish head, stomach, and swim bladder, and then wash with clean water several times. Leave the fish on a tray to drain away the rest of the water. Prepare 300 grams of sticky rice and steam it until it is cooked. After that wash the sticky rice in water, 3 times, to prevent rancidity in the soured fish. This is a secret tip to keep the soured fish for a long time. Take about 200 grams of garlic and pound it thoroughly. Another important spice is 120 grams of salt (without iodine). Mix all the ingredients together with the fresh fish and then press firmly into a clean container. Let the fish ferment for 3 days until it has a sour taste. The soured fish is now ready to eat. The big fish that are used in soured fish are Tilapia and Tiger fish.

To make Pickled fish (Plaa Jom) follow these steps. Take the fish and scrape off the scales, cut off the head and gut. Wash with clean water several times and leave in a tray to drain off the rest of the water. Add 2-3 tablespoons of sticky rice and salt without iodine. Crack roughly 5-6 garlic cloves and mix all together. The fermenting period takes 3-5 days, until the raw fish tastes sour. Pickled fish seasoning; Cut yellow eggplant into thin pieces along with lemongrass, sesame, and roasted red onion. It is important is to fry uncooked rice and grind it until small. Thoroughly mix all spice ingredients together before eating. The types of fish that villagers like to pickle are only small fish such as the Cyprinidae family (Hampala barb, Siamese mud carp, Sword minnow, Eye-spot barb, Smith's barb, Black sharkminnow, Apollo shark, Borapet rasbora).

Finally, making fermented fish (Plaa raa) using the following steps: Use a 5kg fresh fish and remove the head, scales, stomach and eggs. Wash the fish with clean water and leave to drain at room temperature for about 5 hours. Carefully clean the fish again, many times, and put the cleaned fish in a jar or clean container. Sprinkle 1 kilogram of rock salt or salt pellets, mix well and leave it overnight. Fry 200 grams of uncooked rice and grind it until it has a yellow gold color. Fry the rice bran until it is cooked and leave to cool. Mix the fish, ground rice and rice bran together. Place in a Jar or container, be careful not to let flies spawn and leave it for 6-12 months. The fish species that the villagers like to make in to fermented fish are; Catfish, Snakehead, Tilapia, Soft-shell, Sheatfish, Naked catfish, Bagrid catfish and also the Cyprinidae family.

The villagers in the area are lucky to live on very fertile land and have large amounts of fish available. Fish is the main protein source of the people in this area. However, this watershed area of northeastern Thailand is the habitat of parasites that affect people's health. The most important parasite is Liver fluke (*Opisthorchis viverrini*). Liver fluke is commonly found in the central and southern Mekong basins, including Laos, Thailand, Cambodia and South Vietnam with an estimated population of 67.3 million people facing the problem in these countries



Trevor Petney. et al. (2012)

The life cycle of the Liver fluke starts with parasites that are present in people. The eggs will be ejected from the human body in the stools and flow into the water. The snail genus *Bithynia* will eat the eggs and will grow into a Liver fluke parasite that enters the family Cyprinidae. When humans eat fish infected with Liver fluke parasites then the parasite goes to the bile duct and the person is infected with Liver fluke in their bile duct. For humans who eat raw fish (family Cyprinidae), human infection occurs in their biliary tract for about 20-30 years, it can cause jaundice, followed by cancer, cholangiocarcinoma or bile duct cancer. Most die soon after diagnosis. (Trevor Petney. et al. 2012)

Northeastern Thailand is well stocked with fish in the Mun River, especially fish of the Cyprinidae family. Villagers will eat the fish uncooked in the form of a fish salad (Koi Plaa) and in preserved form as Soured fish (Plaa som), Pickled fish (Plaa jom) and Fermented fish (Plaa raa). As fish salad contains uncooked fish it is possible for the fish to contain liver fluke and the villagers have a high risk of liver fluke infection. Soured fish and pickled fish has a fermentation period of 3-5 days, until the raw fish starts to taste sour, but the liver fluke is not dead. When fermented fish is preserved in a jar for 6-12 months, the Liver fluke will die in the process of fermentation, but nowadays a lot of fermented fish producers ferment for only 1-2 weeks because the cost of the process is high. These fermented fish producers prefer to sell their product in 1-2 weeks, but the liver fluke is not dead in that time. This means that all the fish eating habits of local people in Northeastern Thailand present a high risk of the condition of inflection from liver fluke which can cause jaundice followed by cancer, bile duct cancer or cholangiocarcinoma. In Northeastern Thailand, liver fluke infection is a major cause of these types of cancers (Yongvanit, P., n.d.) and the number of new patients joining the queue for treatment is 10,000-20,000 patients, each year. The number of deaths in Thailand, caused by cholangiocarcinoma, stands at over 14,000 deaths per year, and more than 50 percent of the deaths are of people from northeastern Thailand. Fifty percent of the cholangiocarcinoma patients are of working-age, between 40-60 years old. (Khanreekaew, N., 2016).

Therefore, liver fluke infection and cholangiocarcinoma are considered as common diseases for the people of rural Isaan. These diseases are considered as critical, and they

have caused serious damage to the economy, societies, and the quality of people's lives. According to the records, the highest number of patients, of all countries, is found in the people of northeast Thailand, which account for half the total number of all patients. The major cause of liver fluke infection in this region is known to be the culture of eating raw or undercooked common freshwater fish. (Sithithaworn, P., n.d.)

This cholangiocarcinoma phenomenon that occurs in Northeastern Thailand is due to traditional eating habits. Thepporn Mungthane. et al. (2017) found that the inherited eating culture contributing to the current situation of widespread raw fish consumption of the villagers is due to: (1) the culture of the ancestors teaching their descendants to adopt simplistic ways of eating, which lack food safety, (2) the culture in which parents in the current generation continuously maintain the practice of preparing raw or partially cooked fish dishes for their families, (3) the culture in which families with low socio-economic status need to save on the amount of money spent on food, (4) the living culture of Northeastern people which is prioritized on simplicity and convenience as seen in fast and undercooked food processing, (5) the impressive features of the cyprinid fish including its soft meat, excellent taste, and availability, (6) the culture of eating fish when attending social gatherings or when catching fish, (7) the culture of drinking rice whisky with side dishes made from raw fish such as Goi Plaa Dib, and (8) the ongoing culture of the villager as inherited from the ancestors, mentioned earlier. These raise the question of if it is possible to stop the eating of raw fish.

The research team visited the study area to run action research in coordination with all stake holder agencies in these areas such as; doctors from hospitals, public health, municipal staff, village headman, monk, teacher, in order to learn of the liver fluke affect in the buildup of bile duct cancer. The doctors from the hospitals share their knowledge with the village headman, the village committee, and health care volunteers, about the dangers of eating raw fish that could cause cancer. After that the research staff invited the village's key people to discuss the topic: Why do they eat raw fish? What is the affect from eating raw fish? How to prepare healthy fish dishes? Is it possible to stop eating raw fish? At the beginning of the action research in this village, it was found that there were 11 persons with symptoms of bile duct cancer, and 1½ years later, all these patients had passed away. After the long process of action research, the villagers concluded that if Ban Don Rad did not eat raw fish, they will be free from liver fluke for ever !

#### **4. Discussion and Conclusion**

The geographical conditions that make up the area of Northeastern Thailand, are a part of the Mekong Basin. The waters from the Sub-basin rivers flow into the Mekong River and the water from the Mekong also flows into the sub-basin rivers when the Mekong has more water. This is the water system in the Mekong basin that affects upon the fish in the area to move between the Mekong river and the sub-basin. Especially in the early days of the rainy season, the fish are very abundant. In the Northeast Thailand region, there are many fish, especially of the Cyprinidae family, that villagers are able to catch. So, the villagers eat Koi Plaa (fish salad), Plaa Jom (Pickled fish) and Plaa Som (Soured fish) -

raw fish, the fish is not pre-cooked. It is responsible for parasites, especially liver fluke. When the liver fluke stays in the body for a long time, it is possible it will cause bile duct cancer (cholangiocarcinoma). In the study area, there was a campaign to share knowledge with the villagers to stop them consuming raw fish, conducted by many agencies such as; Health care staff, Doctors from the Hospital, Municipality staff, and Village headman. The campaign to stop eating raw fish, of the Cyprinidae family, was successful.

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# THE REFLECTION OF MASCULINITY IN DHEVA NOVEL OF S. PLAI NOI

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## **Abstract**

*The objective of this research is to study the masculinity's reflection that appears in Dheva Novel of S. Plai Noi. This study was a documentary research from Dheva Novel Book of S. Plai Noi, and presented the data in descriptive analysis. The researcher used J.A.Doyle's Framework as an analyzed framework.*

*The study indicates that masculinity which is appeared in Dheva Novel of S. Plai Noi is mostly reflected in the success of masculinity; especially the male god that is presented to succeed, the highest success is god blessing. The success was mentioned often. It is consist of self-confidence, and aggressiveness which are all three masculinity's qualifications in one person. Moreover, another that mostly appeared in this Dheva Novel of S. Plainoi is sexual attraction which is in sight through a variety of characters.*

**Keywords:** Literature, Dheva Novel, S. Plainoi, Masculinity

## **1. Introduction**

Literature is accepted in the academic society. It is a source that reflects the social, cultural, political, historical aspects, and faith, nevertheless, literature form is fiction writing. Literature is able to reflect some social aspects. The writer's reflection is the sentiment and value of the author's novels.

S. Plai Noi is a well-known and widely used pseudonym of Sombat Plainoi. He is the documentary writer about Thai history, culture, geography, tradition, and Thai society in various aspects. He was honored as a national literary artist, art created language in 2010. S. Plai Noi reflected the sentiment and value through his writing, for example, Animal, Plant, Dheva, Non-human, Lunar, Jewelry, Himmapan creatures, Dragon, The 12 zodiacs, and Garuda. These writings are one kind of literature which mirror social, historical, literary, traditional aspects, faith, and legend. Moreover, S. Plai Noi showed the gender that is masculinity's appearance through character in his writing.

In term of "gender" in Thai academic circle, there are many words of "Gender" to use in Thai language such as sex status, gender, role of male and female, the relationship between male and female, the powerful relation between male and female, and female and male. The term "gender" in the definition of American-British feminist is used to indicate the difference between sex and gender that implying sex is a biological classification, while gender is socially constructed. Feminist scholars, is influenced by psychoanalysis, argue that sexual and gender identity are closely related and cannot be separated yet.

However, there are many different meanings of gender, it is stated that gender is not only role of male and female, but also sexual status with power, social class, ethnicity. The other significant differences are under political, economic, social, cultural, or historical conditions in a short period that can affect the allocation and accession to the power and social resources in each period of time. Furthermore, gender also manifests the fluent of sexuality that consisted from complex factors (Kritaya Archavanitkul et.al, 2004) and covers the expectations of femininity and masculinity in terms of belief, attitude, and myth.

Including the tradition has become social norms in the femininity and masculinity. Gender issue is a study of basic biological aspect in human behavior. In the biology is required in a sexual but not the sexual behavior. The difference between women and men humans also reflects the interaction between the physical requirements, plan of social life (Kanjana Kaewtep, 2001).

Meaning of gender will be thoroughly explained and classified by nature of each gender which are displayed in sexuality, for example, the males has to have masculinity: steadiness, aggressiveness, stubbornness, and reasonableness. They also have the ability to think systematically, having psychoanalysis and access fairness, and control emotions. According to the females or the femininity, they are feeble, modest, helpful, mindful, polite, sensible, caring others, and unselfish. Society has to do everything in its power to keep males in a nature of masculinity and keep females in a nature of the femininity in order to preserve the order of culture and the peace of society. Sexuality is the property of individuals who are above social change.

Therefore, the writing of S. Plai Noi is a work reflecting the aspects of faith, and myths, but the content also discussed geography, history, politics, governance, notion, bourgeois lifestyle, social class, family status, and sexual status or gender, especially gender issue "masculinity. Another interesting issue is S. Plai Noi how to show the reflection of masculinity appearance. Thus, the researcher implemented Doyle's (1991) concept of masculinity as a framework for this study. Because of the strategy of character creation of S. Plai Noi, it is a set of ideas in many ways, or it may be a social building in his ideal that is aware of the paradigm and experience. The concept of masculinity is a key concept in this research as a tool to examine the writer's concept of masculine patterns and processes.

## **2. The research result**

The results of this study reflect masculinity in Dheva Novel of S. Plai Noi that presented in various and different aspects. It can be concluded as follows:

1. **Don't be female** is expression character with strength, high confidence, decisiveness, and venturousness of doing business or lifestyle in Dheva Novel. There is also masculinity expression that is not the femininity. Generally, the myth of Dheva Novel of S. Plai Noi often reflected through social context in that period totally adhere with faith and society that respect to gods. All gods must to be the male. They are believable and admirable in accordance with the tradition at that time. Hence, the myth of Dheva Novels presented that are masculinity image.

2. **Be successful** is one of masculinity appearance that must succeed in his life and is expected to success. Masculinity has to be success in the myth of Dheva Novels, mirrors in the story of Shiva, a major god. Both in the story of Narayana and Brahma are a success

that put on an act as a god to all three divinities. Masculinity reflection that succeeds in his life as King Devanagari and King Dhossarot are defined the perfect king. The successful masculinity in the myth of giants is to be a rival of the gods in a region. These cause the faith and respecting the gods in the region.

**3. Be aggressive** that happens through castes in Dheva Novel is showed that masculinity with the aggressiveness's framework express through the gods' myth. Indra is the king of angry god when he was annoyed by others, and he was senseless when he drunk. Then, King Devanagari is aggressive and impolite for being the king. Hermit Viswamitra is a powerful person that can use the power of the punishment of others, showing the character of the cruel. The giants are presented as villains, allowing the image of the gods to be sacred, and fearless. These expressions also are aggressive. Gods, giants, and kings are made known as an aggressive image under the power of anger forever following to the faith and culture of the admiration which are not able to separate.

**4. Be sexual** that appears in Dheva Novel is masculinity reflection with sex attraction which displayed through the myth of good gods: Shiva, Narayana, Devanagari, Brahma, Indra, God of Death, and God of Sun. The above is showed masculinity image clearly in lots of sexual partners. These identify gods' power of merits of whole people. Moreover, sexual attraction reflects their images through the myth of demons. Thossakan, and Norrakarsoon are the villain that reflect to take advantage of other people's lovers to show the degradation of their gods opponents.

**5. Be confident** that appears in Dheva Novel of S. Plai Noi is masculinity reflection with self confidence in the myth of Dheva Novel through the legend of Ramayana and Giant Hirantra. The expression demonstrates the capacity of them. If they are protagonist, the characteristic will be believable. On the other hand, if they are villains, the characteristic will be aggressive. Both characteristics reflect the cultural expression of masculinity following to the social context.

The conclusion about masculinity in Dheva Novel of S. Plai Noi revealed that the characteristics of male with bravery, confidence, decisiveness, especially aggressiveness. These are considered that the morality in the past society was humble, specifically a doctrine or a moral system. Religious in Brahmanism opinion in human equality was not widespread. The lifestyle of the people in society is based on ancient ethics that focused on strength, and the physical strength was the principal. Therefore, masculinity reflected in the above appearances the researcher mentioned.

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# **BUPPHESANNIWAT (LOVE DESTINY): LITERATURE AND CREATING VALUE ADDED THAI ECONOMY**

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## **Abstract**

*The objectives of this academic article are to describe Thailand's economy and tourism phenomenon significantly influenced by hit TV drama named Bupphesanniwat or Love Destiny, authored by "Rompaeng" pseudonym that caused the highly astounding popularity and success in Thailand. The research conducted by collecting information and news concerning with Bupphesanniwat that spread through mass media and social media with the period of collecting data: 22 February 2018 - 11 April 2018. The results of this study revealed that Bupphesanniwat novel produced into TV drama has an influence on Thai society in many aspects as follows: 1. Passing on continuing the Thai virtuous culture 2. Culture Tourism 3. Economic aspect particularly culture tourism industry and Thailand's historical tourist sites. This current mega-hit Bupphesanniwat also ignites the boom in Thainess popularity amongst almost Thai people of all ages, genders and occupations. It also demonstrated values of Thai literature not only creating enjoyment but it can further significantly develop and create value-added economy.*

**Keywords:** Historical novel, Culture Tourism, Historical tourism, Economy, Local economy

## **1. Introduction**

As a historical novel depicting Ayutthaya period, *Bupphesanniwat*, written by "Rompaeng" or Chantayavee Sompreeda, TV scripts written by Sallaya, produced as TV drama at the first time in 2018 by Broadcast Thai Television Co., Ltd. And has been put on air on 21 February 2018 and its popularity has surged ever since like a wildfire after only a few episodes. It has rapidly become talk of the town amongst audiences who admire historical contents in the period of King Narai the Great contained in this hit TV drama, produced a highly addictive cocktail of fascinating themes and lured audiences to watch with its combination of fun and historical knowledge at the same time .

Created by human, literature is thus undeniably related closely to society. Literature serves to capture the image of each society in each period thoroughly. Many aspects of the environment has motivated authors to write a literature. Inspired by just a few words

appeared in historical record, the author of *Bupphesanniwat* is written by depicting and reflecting how people make a living in the period of King Narai the Great. Rompaeng once said about her novel that "In my feeling, It is quite difficult to write this novel because it is based on history. It contains lots of connotations that readers are able to interpret in many ways independently and deeply as they want to. But I try to make it a neutral notion and themes as much as possible." (2012: 5)

The novel is based on a time-travelling love story about a female archaeologist who was born in the reign of King Rama 9 in the Rattanakosin period with a handsome young nobleman who was an ambassador during the reign of King Narai the Great, of Ayutthaya period. Its themes and contents dating back to the past more than 300 years and illustrates the link between historical events and fictional characters harmoniously.



Reference: <http://www.broadcastthai.com/>

When the novel *Bupphesanniwat* was presented in the form of television drama, it caused a phenomenon in Thai society. It is clear that this phenomenon has affected the tourism industry and the Thai economy significantly. This article thus aims to study how literature influenced Thai society and economy. The information and data collected is based on data presented about novels and this TV drama. *Bupphesanniwat* was published through mass media, newspapers, magazines, radio and television including social media. Data collection conducted from 22 February 2018 until 11 April 2018. The results of this study indicated the influences of literature *Bupphesanniwat* towards on Thai economy and tourism. It also demonstrated that cultural capital plays a significant role for Thailand to further develop to add higher value for that.

## 2. Results

### From a novel to mega-hit TV drama phenomenon

This literature has considerably a positive feedback and received the attention of the readers with more than 30 times published and become alert with a current trend among readers in Thailand. It shows that Thai people also like to read literature and ignites hopes and inspiration for writers to create a quality literature on the market.

When the novel *Bupphesanniwat* has become the television drama and put on air just a few early episodes, it results in the *Bupphesanniwat* phenomenon and the word "*Or Chao*" as the second personal pronoun that the hero always called the heroine in the TV drama has become mega-hit and has been trending rapidly on the social media such as on Twitter, Facebook and Instagram. This TV drama was also up to be the most trending hashtag on Twitter in the first placement in the world while broadcasting.

The atmosphere of watching television together with the family was back again. Members ranging from children to adults even the elderly addictively pay attention to watching this mega-hit TV drama, which is the phenomenon that not happened so long ago in Thailand, particularly the era where social media has plays a dominant role in almost every aspects of life. This TV drama is considered as a family drama that attracts to all ages. It is also fun with romantic-comedy plot and providing historical knowledge at the same time. It causes Thai people to pay more attention to their roots and Thai history especially in the glorious period of Ayutthaya. In addition, with its astounding popularity, the production team thus organizes to put on air the 9th episode of this mega-hit TV drama in the first class cinema; that is the first time in Thailand that TV drama can be broadcast in cinema.

Seree Wongmontha (2018) said that there were a wide range of interesting aspects that why *Bupphesanniwat* TV drama has become phenomenal nationwide and its phenomenon also contributed to the nation considerably, that is to say, it disseminated and provided the knowledge of Thai language and Thai history and brought back the proud to be Thai to new generation, providing morals on how to live valuably as well as helped promote historical and culture tourism, compatible with "Niyom Thai" policy of Thai government. It has led the government to focus on promoting Ayutthaya tourism and pay more attention to formulate the policy to promote Thai drama and Thai series go global. Thai dress has become common in everyday life resulting from this mega-hit TV drama. All these reasons contributing this TV drama became a valuable phenomenon in the wake of popular Thai and attracted new generation to pay more attention to study Thai history more deeply.

It is argued that there are only a few Thai literatures that will produce this kind of phenomenon. If we consider factors leading to great achievement nationwide of this mega-hit TV drama, one factor results from literature's function to provide knowledge for reader considerably, it told a fascinating story based on historical background through characters with interesting action combined with the excellent television scripts makes it become phenomenal in Thai society undoubtedly.

### **Passing on and continuing the Thai virtuous culture**

Culture is a way of life associated with people all the time. The daily life of people is unavoidably related to culture. People are thus both creator and innovator of culture, in direct and indirect ways. In order to make sure that culture will transform suitably according to the changing times. (Office of the National Culture, Commission Ministry of Culture, 2008: 17)

*Bupphesanniwat* or Love Destiny considerably creates phenomenon in Thai society. It motivates Thai people to look back to their strengths, namely, Thai culture, especially type of economic competition worldwide that are prone to connect economy with culture. In order to promote economic development, culture based economy plays an important role in distributing income to the community. The *Bupphesanniwat* Tv drama displays a variety of cultural aspects as follows:

### 1. Aspect of art objects and artistic work

Thai culture has a beautiful and delicate art objects and artistic work such as clothing, paintings, music, etc. *Bupphesanniwat* TV drama demonstrates this attractiveness through the action and the characters. Retro hair styles and ornaments of actors and actresses appeared on this TV soap opera are displayed delicately and production team seriously studied details based on historical record. When the audience sees the costume of the character appeared on TV, the astounding popularity of dressing Thai costume has rapidly spread nationwide, mostly they usually dress Thai retro costume to travel to historical sites as appeared on this TV drama. In addition, the Thai government seizes this opportunity to further to promote dressing Thai retro costumes dress during the Songkran Festival.

### 2. Thai cuisine

Thai cuisine is considered as a culture. In *Bupphesanniwat* TV drama, “Katsurang” an archaeologist from Rattanakosin period, who is possessed in the body of “Karaked”, the female protagonist in the story cooked a variety of current Thai cuisine unknown for Thai period in the Ayutthaya to taste such as Green Mango with Sweet Fish Sauce, Grilled River Prawn with Thai spicy sauce, Korean Barbecue in Thai Style, etc. These circumstances appeared on this TV drama is significantly considered as a stimuli for Thai economy caused by current mega-hit of *Bupphesanniwat* TV drama to grab opportunity to stimulate economy in general. Lots of audiences want to eat many Thai cuisine menu appeared on *Bupphesanniwat* TV drama, Grilled River Prawn restaurant waiters and waitresses, for instance, dressed Thai retro costume to lure customers and Green Mango with Sweet Fish Sauce has become very popular and been selling like hot cakes . In addition, *Bupphesanniwat* TV drama also referred to the person who actually exist according to historical record like “Marie Guimar” or “Thao Thong Geeb Ma” (Lady Thong Geeb Ma) who is reputed as the Queen of Thai traditional desserts.

### 3. Thai Herbs and Traditional Thai Medicine

Thai Herbs and Traditional Thai Medicine are considered as a Thailand’s cultural wisdom. *Bupphesanniwat* TV drama presented Thai folk wisdom as appeared on many scenes such as the scene where the hero and heroine must brush their teeth with a brunch of King Khoi (Siamese Rough Bush), the scene in which the heroine scrubbed her body with turmeric while bathing to make her skin smooth, the scene where the maids used tamarind to scrub the heroine’s skin, the scene in which the heroine used kaffir lime to wash her hair, the scene where the maids and slaves chewing betel nuts in the house of “Okya Horadhibbodi”, the royal augur, the father of hero in the story. The scene in which the hero grinded Phlai or Cassumunar ginger to heal the heroine’s wound caused by being punished by a rattan stick. All scenes that displayed the ways traditional Thai medicine had

been applied have a positive impact on Thai Herbs and Traditional Thai Medicine dissemination and even the Director-General of the Department of Traditional Thai Medicine and Alternative Medicine came to thank you this mega-hit TV drama to spread useful knowledge of Thai Herbs and Traditional Thai Medicine to audiences.

#### 4. Thai tradition and Thai play

Thai traditions in the past has become to be dynamically alive again when *Bupphesanniwat* TV drama put Thai traditions and Thai play on many scenes such as long boat competition between Thai noble men and commoners , the building of sand pagodas, or gor phra chedi sai in Thai (Sand chedi). This tradition apparently started as a way for local people to make merit, play performed by all male initiated in the period of Ayutthaya, was very popular amongst commoners, making merit and the scene of giving food offerings to a Buddhist monk, the scene of commoners listening to sermon in a temple as well as the scene the heroine played “Tang Te”, etc.

Mr. Vira Rojpojchanarat, Minister of Culture referred to this current mega-hit TV drama that it is phenomenon compared equally to Korean hit series “Dae Jang Keum”. It ignites the boom for Thai people to pay atten to their Thai roots and culture and the prime minister assigned the ministry to further to continue its popularity by promoting TV drama, film production concerning Thai historical background. Furthermore, the ministry of culture together with this TV drama production will also participate and exhibit in Hong Kong Filmart 2018.

It is thus observed that Thai culture presentation through TV drama created highly astounding interests to audiences and the audiences are motivated to imitate the way the actors/actresses dress, eat, play ,etc. It is also considered as stimuli for Thai people to come study Thai culture in many aspects considerably and then they are able to appreciate the values of Thai culture as well as attracting tourists to travel to historical sites appeared on this mega-hit TV drama and want to study more on Thai culture.

#### **Culture Tourism**

In the present time, the Thai tourism industry focuses on sustainable tourism or conservation tourism leading to develop into has developed into two new types of tourism: Ecotourism and Culture tourism. Culture tourism is a travelling to cultural sites or traditional and cultural events organized in the local community for their amusement, including tourists are able to study and understand the local’s belief, characteristics of society and culture such as Historical Tourism and Tradition and Art Tourism, etc. The culture mentioned above is thus considered as a selling point in tourism. It is a capital that can bring economic development, making money for people in the community. Cultural capital, as it is called, can be employed to develop economic sector considerably. (Karnarin Jaruwan, 2016: 1-3)

With the popularity of *Bupphesanniwat* TV drama, more tourists, both Thai and foreign tourists, are interested in visiting historical sites , creating lots of incomes for the local in the community. Organizing a tour at historical sited as appeared in the mega-hit

drama doubled tourists, particularly, Wat Chaiwatthanaram, where weekend visitors surged to nearly 20,000.

Wat Chaiwatthanaram is an ancient temple located in Ayutthaya province that was used as a major scene in the early stages of the story, in which Kadsurang and Reungrit paid a visit to collect archaeological data. The scene was rode a boat passing through the temple and saw the graciousness of the temple at night. Furthermore, There are also other temples appeared in *Bupphesanniwat* TV drama such as Wat Phutthaisawan, Wat Phra Sri Sanphet And Wat Choeng Tha. The important historical sites which appear in the story have become talk of the town and attracted thousands of tourists giving good benefits to local economy further developed from the current of the drama.

Tourism is one of the major economic activities of Ayutthaya province owing to it is a city that has a long history significantly reflecting Thai history and culture. Tourists thus flock to travel in the province in a huge number constantly. In the year 2017 the number of tourists to travel in Ayutthaya is about 7.5 million people. Tourism has generated income spread into tourism business accounted for approximately 62.0% from Thai tourists, and foreign tourists accounted for about 38.0% of overall revenue from tourists who come to visit Phra Nakhon Si Ayutthaya province in 2018 influenced and inspired by the mega-hit "Love Destiny" (*Bupphesanniwat* TV drama. It results in floods of tourists in Ayutthaya and Lopburi doubled by 3-4 times and benefiting to local people that would earn income from Thai retro costume for rent, shop and restaurant business at least 2,000-5,000 million baht.

### **Cultural capital and Creative Economy**

"Creative Economy" can be defined in the case of Thailand : the concept of moving forwards economy economic based on the use of knowledge, creative education and the use of intellectual property linked to cultural foundations, the accumulation of knowledge of modern society and technology. The Office of the National Economic and Social Development Board (NESDB) has classified the creative industries into four main categories: 1) Cultural Heritage such as handicrafts culture tourism and biodiversity and Thai traditional medicine as well as Thai cuisine. 2) Art, i.e., performing arts and visual arts. 3) Media such as movies and video, printing, broadcasting and music. 4) Functional Creation such as fashion design, architecture, advertising and software (Piriya Phonpiirun, 2013:9)

Mr. Tanawat Pholvichai, Director of Center for Economic and Business Forecasting, University of the Thai Chamber of Commerce, revealed that many countries nowadays employed drama, series or movies popularity to move forwards their economy dynamically, namely, creative economy, This mega-hit drama has been attracted by foreign TV entrepreneurs such as China, Taiwan and Hong Kong. Doing this may lead to an astounding popularity worldwide not less than 100,000 - 200,000 audiences, generating income to the country approximately of 5 billion baht. If its popularity can be ignited up to 6 months, it will increase the amount of money to be doubled, or about 20,000 to 30,000 million expected by 2018.

*Bupphesaniwat* TV drama demonstrated that Thailand has a cultural capital that can create and increase economic values such as travelling to Phra Nakhon Si Ayutthaya province as referred to scenes in this TV drama, has a positive impact on the people in local community to enable them to sell their unique product sales or cultural show, organizing tours for the Thai and foreign tourists.

Literature is classified as a type of Thai creative industry (NESDB). *Bupphesaniwat* TV drama has attracted many readers. Many fans placed so many orders that the publisher is not able to have them printed on time. It is then a good sign in the Thai publishing industry that there are increasing readers and the higher demand for Thai reading society even though in the period of social media occupied the social space.

### **Discussion and Conclusion**

It is not an overstatement to say that “*Bupphesaniwat* or Love Destiny” TV drama has turned a “sure-fire hit” into a Thai TV phenomenon. It is considered as the most successful TV drama giving huge impact nationwide. It is not quite often that TV drama is able to attract most audiences in the country. It also reflects influences of literature towards economic and social aspects and values of Thai literature. Staring from a historical novel with a few reader to the great success in its ratings and popularity when produced into TV drama and lead to positive impact on economy to stimulate historical tourism and move forwards economy based on culture-based economy by adopting cultural capital to develop the country creatively.

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# STATUS AND ROLE OF HUMAN IN BUDDHISM

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## Abstract

*The paper present the teaching about status and roles of human in society can be called life charter of people in society according to Buddhism because these principles cover living a life of people having status in society. This means relationship between parents-children and husband-wife is in family status. In addition, relationship between employer-employee and within friends is in social status. Further, relationship between teachers-pupil is in educational status, and relationship between priests-residents is in religious status. So, this Buddhist doctrine is good core of living a life or life charter to have people living in unity in different status. If the above mentioned institutions conduct their duties seriously, it will make the institutions be happy. When an individual acts to be treated in accordance with the tenets of this doctrine, it will make a peaceful society.*

**Key words:** Status, Role, Human, Buddhism

## 1. Introduction

The word “society” defines the relationships between people in society, without defining it in other forms, not for economy nor politics etc. because different phenomenon that occurs as a growth or a decline in society are the result of the relationship between the people totally. Being member will determine the functional status of a person in society. One could say that each society has a social relationship i.e. status and role or function. Everyone has a different status in society. The role is rooted in the state. Status refers to the particular rights and obligations of person involved with other people and society making that person different from others. The role means that individual rights and fulfills their duties in their existing positions. The role of people in society depends on its regular position because status and role are inseparable. When we have status, we habitually be in relationship with others and the role for that person.

## 2. Status and Role of Human in Buddhism

Status and role and responsibilities of each person in society are prescribe or rules of each individual along with teaching in Buddhism. The Buddhist doctrine presented here is doctrine of 6 relationships. These are the principle that fixes the status and role of the person who should be treated with a total of 6 pairs including parents - children, husband - wife, teacher - pupil, friend - friends, boss - subordinate, and priest - villagers. Each pair will have to follow the position and the roles that they have faith in it to prevent damage to persons or direction.

In fact, This doctrine presents doing owns' job with sincerity to prevent damage to the direction where one should perform" with specifying the 6 statuses and functions of a person in society and use the term direction as follows:

### **3. Parents and Children**

Parents are first teacher, raiser and do everything for their children before others. So why, it is called Front direction. According to the teachings of Buddhism, it prescribes the roles between parents and children as follows:

Parents should have following roles to their children:

- 1) Cautioning and protecting them from evil.
- 2) Nurturing and training them in goodness.
- 3) Providing them with an education.
- 4) Seeing to it that they obtain suitable spouses.
- 5) Bequeathing the inheritance to them at the proper time.

Parents have a duty to treat the children first. Although parents don't expect anything back from children, they will raise children with love, hope of affecting the mind's growth, and hope for prosperity of their children's life. When above mentioned duties are done, it is known to act completely.

Children are base in supporting mankind. Children in family are children in society. They should be been trained to have self-value which would make advance in the study and to develop their own lives and be a valuable member of society. So, according to teachings in Buddhism, as a son or daughter, one should honor one's parents as follows :

- 1) Having been raised by them, one looks after them in return.
- 2) Helping them in their business and work.
- 3) Continuing the family line.
- 4) Conducting oneself as is proper for an heir.
- 5) After their passing away, one make offering, dedicating the merit to them.

When children grow up, they must achieve a state of their own that they are currently in existence today because of the generosity of the parents. After thinking of this, they must treat 5 kinds as mentioned above completely. If there is defect or refusal to acts, Thai society will not accept that and called an ingrate or ungrateful. This means, person who doesn't know obligation and reprisal is repulsive and undesirable. Meanwhile, children who know gratitude to the person who patronizes before especially parents believe to be a good people. It is considered as an important virtue in society and makes society be a unique and is known as the benefactor of others who have done little despite himself somehow. This is because of the tenets of the religion itself.

### **4. Teachers and students**

In Buddhism, being teachers gets a very high status because it is expected from society as those who create intellectual knowledge to the youth of the nation. Teachers are

important and teaching is a noble profession which gets the respect of people in society. Besides giving knowledge, the duty of teachers is to train ethics for students as well. The moral of the teachers that society expects is merciful kindness for per pupil, which is different from the virtues of the parents. So, the status of teachers in society is important vice from parents as mentioned already. According to the teachings of Buddhism, A teacher supports his students by;

- 1) Teaching and training them to be good.
- 2) Guiding them to thorough understanding.
- 3) Teaching the subject in full.
- 4) Encouraging the students and praising their merits and abilities.

5) Providing a protection for all directions; that is, teaching and training them so that they can actually use their learning to make a living and know how to conduct themselves well, having a guarantee for smoothly leading a good life and attaining happiness and prosperity.

When teachers treat students as mentioned, student must have a code of conduct for the teachers by;

1) Rising to greet the teacher and shows respect to them.

2) Approaching the teacher to attend him, serve him, consult him, query him, receive advice from him.

3) Harkening well so as to cultivate wisdom.

4) Serving the teacher and runs errands for him.

5) Learning the subject respectfully and earnestly, giving the task of learning its due importance.

The relationship between students and teachers brings prosperity only for them. That means, students will obtain decent knowledge and defended by teachers. As for teachers, they will maintain a comfortable lifestyle with no troubles about the well-being or existence. Students in Thailand have greatly respected teacher because teachers are knowledge givers to be self-employed. Therefore, they are not different from parents. Society has tradition to express appreciation to the teachers. So the moral views of society as a disciple is the same with moral piety towards parents. Any student who does not appreciate his teacher, that pupil will be undesirable and unwanted of society because that pupil is unappreciative or ungrateful. Moral sense and feelings are influenced of the teachings of Buddhism.

#### **4. Husband and Wife**

In the past, husband was the head of the family and earned a living and took care of family. As for wife, she looked after the children and didn't household works. According to the tenets of Buddhism, it specified the duties of conduct between husband and wife, as follows. As husband, one should honor and support one's wife by;

- 1) Honoring her in accordance with her status as wife.
- 2) Not looking down on her.
- 3) Not committing adultery.
- 4) Giving her control of household concerns.
- 5) Giving her occasional gifts of ornaments and clothing.

When husband treated wife as already mentioned, wife also has a duty to conduct a husband by;

- 1) Keeping the household tidy.
- 2) Helping the relatives and friends of both sides.
- 3) Not committing adultery.
- 4) Safe guarding any wealthy that has been acquired.
- 5) Being diligent in all her work.

If husband and wife treated each other along with doctrine, it would make the family happy because each partner acts against each other with courtesy. But divorce is more common today's society because neither side defect their duty, especially modern society focus on equality between men and women. Women ought to make a living; side by side with men claiming that working alone is not enough to eat causing women have to work hard both outdoors and indoors. Many married couples face this problem. In youth with children, letting wife takes care of children without working outside the home is better than hiring a nanny in all other cases because mother can take good care of children more than nanny who comes to work for more money. Neglecting duties/responsibilities is creating various family problems.

#### **6. Friend and friend**

Friendship is important and affects the growth and decline of a good life. Fellowship should have quality of being a true friend, not artificial.

If there is sincerity within friends, support one another, and behave very well, the society will be peaceful without squabbles and there will be no taking advantage from one another. But today's world is not like this. There is no complementary. They don't behave very well. Besides these, they destroy mutual benefits and prominent people. This is why present society is in trouble. As a friend, one should conduct oneself toward one's friends by;

- 1) Sharing with them.
- 2) Speaking kindly to them.
- 3) Helping them.
- 4) Being constant through their ups and downs.
- 5) Being faithful and sincere.

When a friend is treated by above duties, one should treat in return as follows:

- 1) Protecting their friend when he is off guard.
- 2) Protecting their friend's property when he is off guard.
- 3) Being a refuge in times of danger.
- 4) Not deserting their friend in times of hardship.
- 5) Respecting their friend's family and relatives.

## **7. Employer and employees**

When employers aid employees, workers or employees will help in different works so that employers can perform well. Besides, employers will feel comfortable when employees work with integrity, diligently. So, duties of both employer and employee are giving mutual support to each other.

According to the teachings of Buddhism, it specified duties of workers and employers or servants as follows:

As an employer, one should support one's servants and employees, who are likened to the lower direction as follows:

- 1) Assigning their work in accordance with their strength, sex, age and abilities.
- 2) Paying them wages commensurate with their work and adequate for their livelihood.
- 3) Granting them fringe benefits by, for example, providing medical care in times of sickness.
- 4) sharing with them a portion of any extra gain.
- 5) Give them appropriate holidays and time to rest.

When workers and employees are treated, they must treat employer by;

- 1) Starting work before employer.
- 2) Stopping work after employer.
- 3) Taking only what is given by his employer.
- 4) Doing his job well and seeking ways to improve on it.
- 5) Spreading a good reputation about his employer and his business.

## **8. Priest and residents**

Religion is necessary for every society because it is the anchor of the soul of people in society. Individuals must have relation to the priests. It is the duty of the priests preaching to people the best advices. Live a life in right and simple way. So, Buddhism specified duties of priest in one direction from 6 directions because religion is important for human life.

Priest means people who hold percepts because the priest practices to be refined from sufferings and to be pure from desires, lust. People who are practicing to be out of lust, and suffering are considered as a noble man. Being a noble man is considered to be superb so why normal people put them upward to pay respect.

According to the tenets of Buddhism, priest should have following duties towards residents by;

- 1) Enjoying them from evil actions.
- 2) Enjoying them in goodness.
- 3) Assisting them with kind intentions.
- 4) Making known to them things not heard before.
- 5) Explaining and clarifying things they have already heard.
- 6) Pointing out the way to heaven, teaching them the way to happiness and prosperity.

Residents also have duties towards priest. The duties are as follows:

- 1) Acting towards them with goodwill.
- 2) Speaking to them with goodwill.
- 3) Thinking of them with goodwill.
- 4) Receiving them willingly.
- 5) Supporting them with food, robes, shelter and medicine.

Residents who perform their duties as mentioned above refer that they take care of a priest to live happily, without affected by four factors. Priest can concentrates on the practice of religious activities. Likewise, when priests have been supported, they have a duty to help residents with the discipline to live the right way. When both priests and residents follow their duties correctly, it will inevitably lead to the happiness of both parties.

### **9. Conclusion**

In present, the society has changed a lot. Awareness about roles along with status in society of people are decreasing, whether it's the teachers, students, parents, employers, employees, friends, priests and worshippers. They are not performing their duties completely. This is due to the changing lifestyle in today's world resulting the changes in the social structure too. It is to be found that the teachings of Buddhism will only exist in scripture. People in society are not taken seriously in any way. Ultimately, it is the ideal that no man put into practice and become obsolete or archaic inevitable. But if people of all social duties are correctly positioned society would not have so many problems as today, certainly. It is like the words admonish that any dharma will be worthy if it is implied, any dharma will be worthless if it is not implied.

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# **METHODS FOR IMPROVEMENT OF GRADUATE STUDY INFORMATION OF THE FACULTY OF HUMANITIES AND SOCIAL SCIENCES, KHON KAEN UNIVERSITY**

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## **Abstract**

*This study aimed to study the state of operation, problems, obstacles and needs of graduate study informational services of the Faculty of Humanities and Social Sciences, Khon Kaen University. The sample was 122 graduate students in the academic year 2016. Data were collected with a 5-point Likert scale questionnaire and analyzed by using frequency, percentage, mean and standard deviation. The findings reveal that the aspects with the highest operating level were: 1) communications and fast and direct delivery of information and clarity of documents; 2) easy and convenient search; 3) useful and effective information; those with the highest problem level were categorization with difficulty to access to the target information, an online introduction to information services to students and the needs in publication of students' thesis studies.*

**Keywords:** Methods, Improvement, Graduate Study, Information

## **1. Background and statement of problem**

According to Internal Quality Assurance in Higher Education, Academic Year B.E. 2557, Element 3 Students specifies 3.1 Student Admissions and 3.2 Student Support and Development to have mechanism in improvement of fundamental knowledge or study preparation for the first year of study in order to enhance students' ability to learn happily in higher education and reduce drop-out during years of study. During studying in university, plenty of knowledge and ability enhancement activities both inside and outside classrooms are provided. There is also an activity promoting well-being citizens, with public consciousness. Moreover, system planning on academic counseling, protecting system or risk management for students, thesis advice controlling and monitoring for graduate students to complete the degree on time, including promoting students' academic works publication and learning opportunity promoting students' potential in research skills leading to knowledge and learning skills in the 21<sup>st</sup> century to meet universal standard are provided. Most people place importance on information, media and technology skills which included information literacy, media literacy and ICT literacy. If the faculty has inclusive information of graduate study and makes it easy for students to access, this will result in Internal Quality Assurance in Higher Education, Element 3.3 Influences on Students which will cause the students readiness for study, with higher rates of persistence and graduation, satisfaction with curriculum and management of students' complaints.

Therefore, the researcher appreciates importance of the study of the state of operation, problems, obstacles and needs for graduate study information services of the faculty which will have an influence on operating achievements of Internal Quality Assurance in Higher Education, Element 3 Students.

## **2. Purposes of the study**

1) To propose methods for the improvement of access to graduate study information of the Faculty of Humanities and Social Sciences, Khon Kaen University

2) To improve information system of graduate section, the Faculty of Humanities and Social Sciences, Khon Kaen University

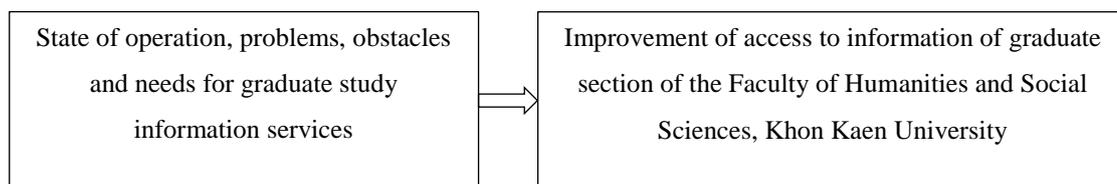
## **3. Significance of the study**

1) The Faculty of Humanities and Social Sciences could develop guidelines on the improvement of access to information of graduate section.

2) Graduate section could obtain data for improving the information system of graduate section, the Faculty of Humanities and Social Sciences, Khon Kaen University.

3) Graduate section could improve the information management system of graduate section to promote ease of access to information among graduate students.

## **4. Conceptual framework**



**Figure 1 shows the conceptual framework of this study**

## **5. Research methodology**

1) This study was survey research.

2) The sample of the present study was graduate students who enrolled in courses and independent study or thesis in academic year 2016; specifically, the sample was 122 students out of 407 students, accounting for 30 percent.

3) The instrument used in this study was a questionnaire about the improvement of graduate study information of the Faculty of Humanities and Social Sciences, Khon Kaen University. It was designed and verified by a qualified expert who is Associate Dean for Research and Academic Services. The questionnaire was piloted with three graduate students so as to check whether any change of language was needed. The pilot showed that no changes were needed. Moreover, the graduate section staff helped check the language use in the questionnaire and provided further information of graduate section. Finally, the questionnaires were created with Google form and QR code with the advice from information technology section. The questionnaires consisted of the following parts.

Part I: General background of the respondents as in genders, ages, education levels, fields of study, jobs, sources of graduate-section information and topics of inquiries

Part II: The state of service delivery and access of graduate study information consisted of five-point likert-scale questions and the suggestion parts concerning the following aspects.

(1) Regarding the support for service delivery of graduate section, Faculty of Humanities and Social Sciences, Khon Kaen University, there were six questions and suggestions.

(2) There were seven questions and suggestions concerning information access.

(3) There were five questions, together with recommendations, in relation to benefits of sources of information.

(4) Moreover, the questionnaire had eight questions and the suggestion part about problems and obstacles to access to graduate study information.

(5) There were four questions and suggestions about any improvement on information access.

(6) Finally, this part consisted of five questions and the suggestion section related to needs for graduate study information services.

Part III: Access to graduate study information; this part used open-ended questions.

4) In relation to the scope of the study, the present study focused on the state of operation, problems, obstacles and needs for graduate study information services of the Faculty of Humanities and Social Sciences, Khon Kaen University.

5) The duration of this study was one year (June 1<sup>st</sup>, 2017 – June 30<sup>th</sup>, 2018). The setting was the Faculty of Humanities and Social Sciences, Khon Kaen University.

6) In collecting the data, an advertising board was designed to seek the participants' collaboration in completing the questionnaires. In addition, graduate section, graduate students and lecturers were encouraged to share news about this survey through different channels, including research ethics workshop, Facebook, Line, phone calls and individual approach.

7) The collected data were analyzed with descriptive statistics, namely frequency, percentage, mean and standard deviation to describe the state of operation, problems, obstacles and needs for the graduate study information services of the Faculty of Humanities and Social Sciences.

For rating-scale questions, there were five levels as follows:

Highest level of operation/problems equals 5 scores

High level of operation/problems equals 4 scores

Moderate level of operation/problems equals 3 scores

Low level of operation/problems equals 2 scores

Lowest level of operation/problems equals 1 score.

Mean scores can be interpreted as follows:

4.50 – 5.00 represents the highest level of problems/urgency/satisfaction

3.50 – 4.49 represents the high level of problems/urgency/satisfaction

2.50 – 3.49 represents the moderate level of problems/urgency/satisfaction

1.50 – 2.49 represents the low level of problems/urgency/satisfaction

1.00 – 1.49 represents the lowest level of problems/urgency/satisfaction.

## **6. Results**

1) In respect of respondents' genders, it was found that most of the respondents, 73 of them accounting for 59.80 percent, were female while 49 of them, 40.20 percent, were male.

2) Based on their ages, the results demonstrated that 40 of the respondents, 32.80 percent, were 22-25 aged while 38 of them, 31.10 percent, were 26-30 aged.

3) When considering their levels of education, it was discovered that 81 of the respondents, constituting 66.40 percent, held a Master's degree while 41 of them, 33.60 percent, obtained a doctoral degree.

4) Based on their fields of study, 26 of the respondents, representing 21.30 percent, were affiliated to Thai Program and 13 of them, 10.70 percent, were to English Program.

5) In looking into their professions, the study found that 76 of the respondents, 62.30 percent, were students while 40 of them, accounting for 32.78 percent, had other jobs, namely one priest, 0.82 percent.

6) In considering sources of information related to graduate section, the study found that 78 of the respondents, constituting 63.93 percent, retrieved information from graduate section's website while 67 of them, 54.92 percent, obtain information directly from graduate-section staff.

7) When looking into topics about which the respondents retrieved information, the study found that 86 of them, accounting for 70.49 percent, inquired about the enrollment periods while 55 of them, 45.08 percent, requested information about further studies. Moreover, only 2 of them, 1.64 percent, asked questions about other aspects.

8) In relation to the state of service delivery and graduate study information access, the study found that considering the graduate section's service delivery, instant communication and information sharing to the target group was on the highest level of operation (Mean = 3.89, S.D. = 0.784, indicating a high level). Clarity of brochures and manuals was also on the high level of operation (Mean = 3.89, S.D. = 0.801), followed by instant service delivery and problem-solving (Mean = 3.85, S.D. = 0.840). Apart from that, other opinions were concerned with their instant online response, needs for faster documentation, needs for constant update of information, limited information, inadequate information, information inaccessibility and needs for more channels of communication such as mobile phones or Line.

9) In terms of data concerning the conditions of service provision and access to graduate study information classified by means of access to information, it was found that

most of the questionnaire respondents were of opinions that the operations with highest levels were easy access to information and convenient (Mean = 3.88, S.D. = 0.829 at a high level), followed by control of access to graduate study information (Mean = 3.88, S.D. = 0.829 at a high level). Further suggestions include regular update, which is already good. Access to information was limited; therefore, more channels of access to information should be made available in case of failure to connect to the internet.

10) In terms of data concerning the conditions of service provision and access to graduate study information classified by benefits of data source, it was found that most of the respondents were of opinions that the operations with highest levels were presentation of useful information which could be applied effectively (Mean = 4.05, S.D. = 0.780 at a high level), followed by correctness, accuracy, clarify and reliability of presentation of information (Mean = 4.02, S.D. = 0.727 at a high level) and the fact that the data source could reduce the amount of paper used (Mean = 4.02, S.D. = 0.828 at a high level).

11) In terms of data concerning the conditions of service provision and access to graduate study information classified by problems and obstacles related to access to graduate study information (website, Facebook, leaflet), it was found that most of the respondents were of opinions that the most serious problems were complicated classification of access to needed information (Mean = 3.30, S.D. = 0.953 at a medium level), followed by unclear explanation which made it hard to understand information (Mean = 3.16, S.D. = 1.004 at a medium level). Further suggestions include the fact that contact channels were limited; therefore, channels of access to information should be made available in case of failure to connect to the internet.

12) In terms of data concerning the conditions of service provision and access to graduate study information classified by what should be improved and developed related to graduate study information, it was found that most of the respondents were of opinions that the most serious issues were the fact that the information service should be suggested on the internet for students (Mean = 4.02, S.D. = 0.833 at a high level), followed by the fact that information should be made more interesting with information needed by students (Mean = 3.96, S.D. = 0.847 at a high level). Further suggestions include the fact that students are required to take the KKU-AELT which students has already passed; therefore, students wish to know their score but have to inquire it at graduate section which is considered as old-fashioned and not modern.

13) In terms of data concerning the conditions of service provision and access to graduate study information classified by demand of use of graduate study information, it was found that most of the respondents were of opinions that the most serious issues were the students' research presentation stage (Mean = 4.27, S.D. = 0.739 at a high level), followed by expansion of academic and research work publication space (Mean = 4.25, S.D. = 0.764 at a high level). Further suggestions include the fact that the form of KKU-AELT test (result) should be in the form that can be used in an international level in the same manner as CU-TEP, TU-GET. Contact with lecturers and staffs was already convenient.

14) Further suggestions/guidelines for improvement/expectations from graduate section of Faculty of Humanities and Social Sciences, Khon Kaen University include

several issues in Level 1, the lowest, which were the fact that new staff did good job, addition of online channels to make it convenient for inquiry, acquisition of knowledge, failure to receive news about academic or research scholarships, lack of variety of academic presentations and academic participation outdoors, demand of one-stop service in a form of library, demand of the KKU-AELT (result) to be the form which can be used in an international level in the same manner as CU-TEP and TU-GET, convenient and timeliness of service provision, notification by phone in case of important information as some students are unable to access the internet, clear; comprehensible and updated information notification because most students keep updated with information through Facebook, improvement of information notification through website to be more effective and optimization of paper.

## **7. Discussion**

1) According to the data concerning the conditions of service provision and access to graduate study information classified by means of service provision of Graduate section of Faculty of Humanities and Social Sciences, Khon Kaen University, it was found that most of the respondents were of opinions that the operations with the highest level were timely publication of information and news to the right target group (Mean = 3.89, S.D. = 0.784 at a high level) and clarify of documents/leaflets/manuals (Mean = 3.89, S.D. = 0.801 at a high level), followed by timely service provision and solution (Mean = 3.85, S.D. = 0.840 at a high level). It is probably due to the fact that there are clear service recipients who are lecturers and graduate students at Graduate section which made the communication specific and made the publication of information and news timely targeting the right group. In addition, Graduate section provides documents and leaflets, especially the graduate section manuals provided to lecturers and graduate students of every academic year. The content in the aforesaid documents contains relevant regulations and notifications which can be used for reference and adhered to properly and in the same manner. Moreover, Graduate section has an operation plan for certain matters and specifies the duration required for each step. Graduate section staff are also well familiarized with relevant regulations and notifications, making the service and solution provision timely.

2) According to the data concerning the conditions of service provision and access to graduate study information classified by means of service provision, it was found that most of the respondents were of opinions that the operations with the highest level were easy and convenient retrieval of information (Mean = 3.88, S.D. = 0.829 at a high level), followed by control of access of graduate section information (Mean = 3.88, S.D. = 0.829 at a high level). It is probably due to the fact that there are several information sources available such as website, Facebook, etc. Therefore, it is easy for service users to search for information. There is also control of access to graduate study information in order to secure users' information.

3) According to the data concerning the conditions of service provision and access to graduate study information classified by information source, it was found that most of

the respondents were of opinions that the operations with the highest level were presentation of useful information which could be applied effectively (Mean = 4.05, S.D. = 0.780 at a high level), followed by correctness, accuracy, clarify and reliability of presentation of information (Mean = 4.02, S.D. = 0.727 at a high level) and the fact that the data source could reduce the amount of paper used (Mean = 4.02, S.D. = 0.828 at a high level). It is probably due to the fact that Graduate section publicizes useful, accurate, precise, clear and reliably information to lecturers and graduate students, so they can apply the information effectively. In addition, Graduate section develops its information source to be online in order to reduce the amount of paper.

4) According to the data concerning the conditions of service provision and access to graduate study information classified by problems and obstacles of access to graduate study information (website, Facebook, leaflet), it was found that most of the respondents were of opinions that the most serious problems were complicated classification of access to needed information (Mean = 3.30, S.D. = 0.953 at a medium level), followed by unclear explanation which made it hard to understand information (Mean = 3.16, S.D. = 1.004 at a medium level). It is due to complicated classification of information on Graduate section's website, making it difficult to access demanded information by service users, and unclear explanation, making it hard to understand information.

5) According to the data concerning the conditions of service provision and access to graduate study information classified by what should be improved and developed related to graduate study information, it was found that most of the respondents were of opinions that the most serious issues were the fact that the information service should be suggested on the internet for students (Mean = 4.02, S.D. = 0.833 at a high level), followed by the fact that information should be made more interesting with information needed by students (Mean = 3.96, S.D. = 0.847 at a high level). It is due to lack of information publication to suggest information services on the internet available to students, and information is not interesting enough. The content is also not in accordance with students' needs.

6) According to the data concerning the conditions of service provision and access to graduate study information classified by demand of use of graduate study information, it was found that most of the respondents were of opinions that the most serious issues were the students' research presentation stage (Mean = 4.27, S.D. = 0.739 at a high level), followed by expansion of academic and research work publication space (Mean = 4.25, S.D. = 0.764 at a high level). It is due to the fact that Graduate section collaborates with the international research and academic service conference organizer only once a year, so there is no other stage for students to take to present their research work. In addition, space for publication of academic and research works is limited.

## **8. Suggestions**

### **1) Suggestions for Improvement and Development**

- The website should be categorized in order to make it easy to access demanded information, and clear and comprehensible explanations should be provided.

- The information service should be advertised on the internet for students, and information and contents should be interesting according students' needs.
- There should be sufficient stages for research presentation for students, and space for publication of academic and research works should be increased.
- Timeliness of document process should be improved.
- Channels of access to information should be added in case of failure to connect to the internet.
- Information should be regularly updated and extensive.
- Announcement of KKU-AELT should be publicized through more online platforms.
- KKU-AELT should be promoted to be used in an international level in the same manner as CU-TEP, TU-GET, etc.
- News and information about academic or research scholarships should be publicized more.
- Academic works presentation and participation in outdoor academic events should be encouraged to be more various.
- Timeliness of service provisions, e.g. notification by phone to students when important information becomes available, should be improved because some students are unable to access the internet.
- Clear, comprehensible and updated information should be publicized.
- Information notification through website should be improved to be more effective.
- Paper should be optimized.

## 2) Suggestions for Future Research

- Access to information of Graduate section of Faculty of Humanities and Social Sciences, Khon Kaen University should be improved.
- Effectiveness and ability to access information on the website of Graduate section of Faculty of Humanities and Social Sciences, Khon Kaen University should be enhanced.
- Inequality of access to information of Graduate section of Faculty of Humanities and Social Sciences, Khon Kaen University should be tackled.
- Expectations and satisfaction of use of information service provided by Graduate section of Faculty of Humanities and Social Sciences, Khon Kaen University.

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**PART 4: EDUCATION AND SOCIAL  
DEVELOPMENT**



# THE DEVELOPMENT OF NON-PUBLIC PRESCHOOL AND GENERAL EDUCATION VIETNAM: THE VIEW FROM LOCAL EDUCATION ADMINISTRATORS

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## **Abstract**

*Over the past 20 years, the system of non-public preschool and general education in Vietnam has been formed and developed, initially meeting the diverse needs of preschool and general education of learners, reduce the pressure on the public education system. Despite the initial encouraging results, the development of the non-public preschool and general education system still has many problems that needs to be solved. The picture of non-public preschool and general education is quite contrasting in terms of class and school size, resources, service quality, geographic distribution, etc. Local education administrators argue that in present the system of non-public preschool and general education is unevenly developed, polarized, under-planned, strongly influenced by short-term incentives of investors. Therefore, it is needed for macro-management measures to promote non-public preschool and general education to develop in the right direction and sustainability.*

**Keywords:** *local educational administrators; non-public education; policy system; preschool and general education;*

## **1. Introduction**

Over the past two decades, the system of non-public preschool and general school in Vietnam has gained certain results, contributing to the increase in access to educational services for many people in school age. Non-public preschool and general educational institutions are established and managed based on the current legal framework for education. In fact, non-public educational institutions were established at all school levels and attracted a certain number of learners. According to statistic from the Ministry of Education and Training, in November 2017, there is only 2,890 of nonpublic preschool and general school compared to the total of 43,672 educational institutions. Currently, about 1.15 million pupils are studying in the non-public educational institutions of approximately 20.0 million pupils. Thus, the rate of non-public schools now stands at 6.7% only but the proportion of students attending non-public preschool and general educational school is only 5.5%. This result is much lower than the target set in the Government's resolutions on the development of non-public education. It can be said that in general, the contribution of non-public preschool and general education school is not much and insignificant. Clearly, there are still some problems in the development of the non-state education system that need to be carefully considered. Evaluating non-public preschool and general school

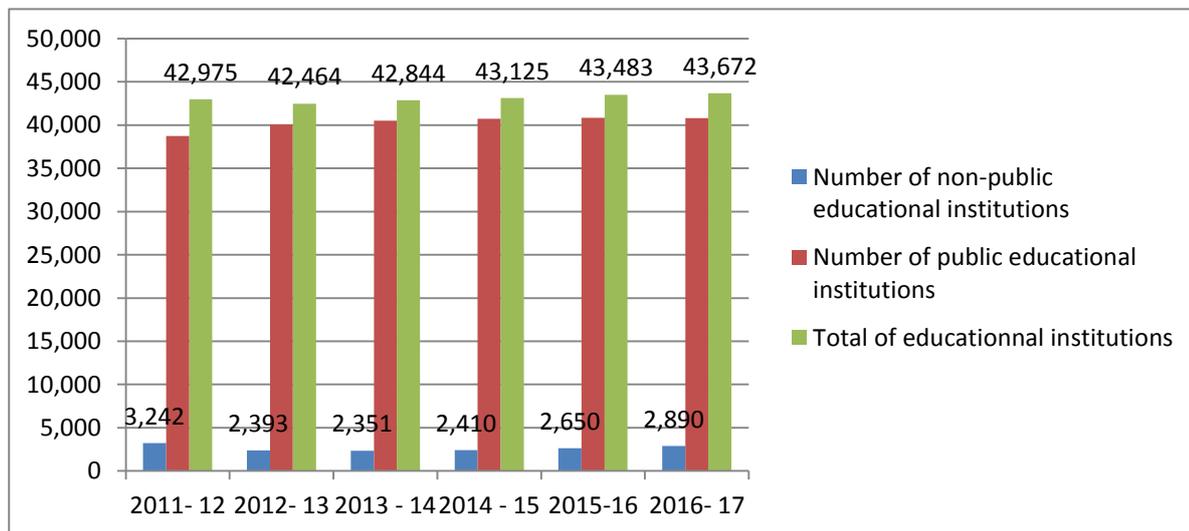
should be considered from different perspectives of stakeholders including local (provincial and district) education administrators. The purpose of this article is to provide an overview of the current state of the non-public preschool and general education institutions (hereinafter referred to as non-public educational institutions), evaluation of local education distractors on the development of non-public educational institutions and recommendation on policies to promote the development of non-public educational institutions Vietnam in the coming time.

The data used in this article are collected from governmental legal documents, reports from the Ministry of Education and Training, provincial Department of Education and Training and District level office of Education and Training in the country in last 5 years. The primary data for the evaluation of provincial and district education managers was collected by qualitative research through in-depth interview with leaders of Department of Education and Training in 30 provinces and 60 districts. The survey was conducted during October & November 2017.

## 2. Overview of real situation of the non-public education system in Vietnam

### *Quantity and structure of non-public educational institutions*

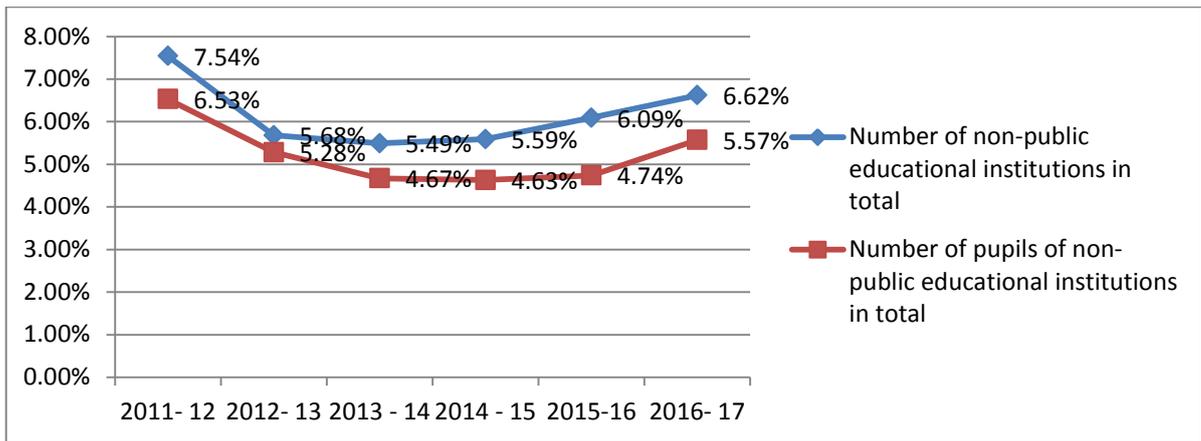
In the period from 2011 to 2017, the number of non-public education institutions has changed unconventional. The number of educational institution across the country has changed but not much although it has decreased in the school year 2012- 2103 compared to the previous year and then tended to increase slightly. However, the overall decline in the number of educational institutions is due to the decline of non-public educational institutions while the number of state educational institutions is on the upward trend.



**Figure 1. The number of educational institutions in period 2011-12 to 2016-17**

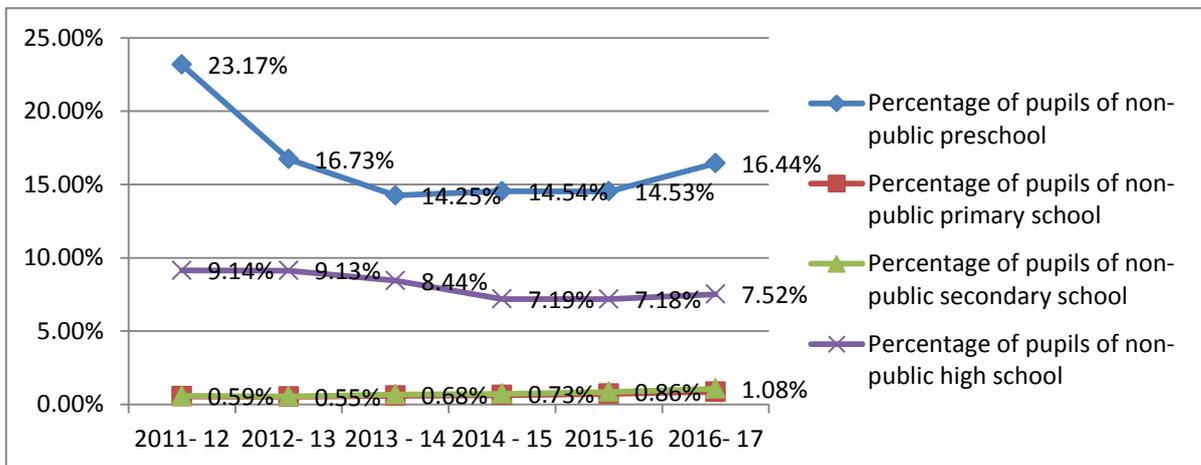
*Source: MOET, 2017*

The contribution rate of non-public educational institutions in providing educational services to learners also change overtime and are always low (see figure 2a and figure 2b below)



Source: calculated based on statistical reports of MOET, 2017

**Figure 2a. Percentage of non-public educational institutions and pupils of non-public educational institution**



Source: calculated based on statistical reports of MOET, 2017

**Figure 2b. Percentage of pupils of non-public educational institutions**

The percentage of non-public educational institutions has declined in the period from 2011 to 2013 and has since tended to increase slowly and only accounted for 6.62% of the total number of institutions in 2017. At the same time, the number of students studying in non-public education establishments has a tendency to change with the number of educational institutions but the proportion of the number of students attending non-public educational institutions is only 5.57% equivalent to 1,147,336 students in such the main part is preschoolers with 836,153 students.

The structure of educational institutions reported by the Department of Education and Training also reflects the concentration of non-public educational institutions at the pre-school level. Up to 96.5% of non-public educational institutions are preschool institutions. The rest, 2.36% are high school, 0.85% is primary school and secondary school is only 0.29%. Over the past few years, the number of non-public preschool institutions has increased much and rapidly, while the number of non-public primary school has risen lightly and slowly. However, the number of educational institutions as well as the number of pupils

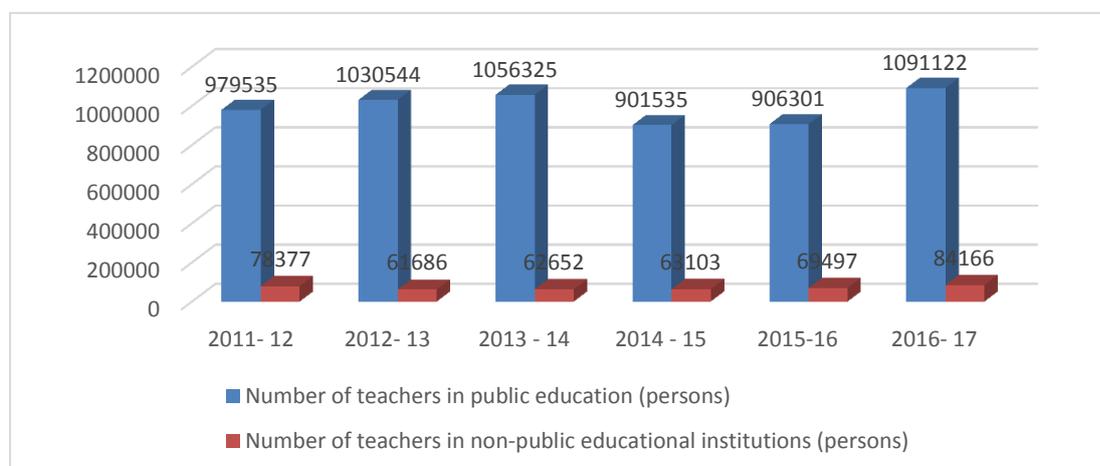
attending non-public educational institutions are concentrated mainly in big cities like Hanoi, Hochiminh and Danang.

The data collected from the reports of 55 provincial department of education and training has also showed consistent results with a slight increase in the number of non-public institutions at all levels. Of these, the number of non-public preschool and secondary school has increased by 1.5 times, while the number of non-public primary and high schools has increased slightly although the number of non-public high school has been established quite recently but many people-founded education institutions have been converted into public ones instead of being converted into private school ones.

By geographical area, non-public educational institutions are concentrated in economically developed regions and high population density such as Red River Delta region and South East. Specifically, the number of non-public educational institutions in the Red River Delta region accounted for 37.73%, the South Central region accounted for 22.71% of the total non-public educational institution while the North West region accounted for only 0.97% and the North Central was 3.34%.

### *Teachers working for non-public educational institutions*

According to statistical reports of the Ministry of Education and Training, the number of teachers in preschool and general education institutions across the country ranged from 1.03 million in 2011 gradually increased 1.12 million in 2014. After that, it has dropped somewhat in 2015 and continued to rise slightly to 1.176 million in 2017. At the same time, the number of teachers working in the non-public education sector has changed but not the same direction. Before slight increasing in 2014, the number of teachers in non-public education sector decreased in the period 2011-2013 and kept an upward trend during the past 3 years (see figure 3). Currently, there are over 84 thousand teachers are working in the non-public educational sector accounting for 7.16% of the total teachers across the country. The rate of students/teacher in non-public education is 13.63 compared to 17.83 of the rate of student number/teacher in public education.



*Source: MOET, 2017*

**Figure 3. Number of teachers working in public and non-public education**

As reported by the Department of Education and Training, along with an increase in the number of non-public educational institutions, the number of teachers working in non-public education sector has increased rapidly over the past six years. Data obtained from reports of provincial Department of Education and Training on the number of teacher has pointed out that the number of non-public preschool teachers has increased faster while the number of teachers working for non-public general school has increased slowly and has a small part. Most of the teachers in non-public educational sector is female teachers. In particular, female teachers account for 90% of teachers in primary and secondary school and 99% in non-public prechool institutions. However, the percentage of female teachers in high school slightly decreased to 68.64%. The propotion of number of full-time teacher in non-public schools is often low as most non-public schools could not recruit enough students.

### **Infrastructure of non-public educational institutions**

In general, the system of facilities of non-public educational institutions is relatively completed. However, there are significant differences between non-public educational institutions in different locations. In the urban areas and economically developed areas, the facilities of non-public preschool and general schools are fully invested such as classrooms, funtion rooms, libraries, gym and so on. On the contrary, in rural areas with the economic situation is not well devloped, the facilities of non-public educational institutions are quite limited and not synchronous especially in independent private children groups. The below table presents the number of classrooms by different quality levels.

**Table 1. Number of classrooms**

	Number of solid classrooms		Number of semi-permanent classrooms		Number of temporary classrooms		Percentage of temporary classrooms	
	Public education	Non-public education	Public education	Non-public education	Public education	Non-public education	Public education	Non-public education
2011-2012	312,646	10,293	96,416	949	15,844	56	3.73%	0.49%
2012-2013	326,669	10,511	90,673	1,791	13,852	41	3.21%	5.68%
2013-2014	341,910	12,017	91,595	2,466	13,263	18	2.97%	0.12%
2014-2015	345,591	11,999	86,481	476	12,216	82	2.75%	0.65%
2015-2016	344,007	10,614	79,638	620	11,605	5	2.67%	0.04%
2016-2017	352,929	12,635	75,740	393	9,830	22	2.24%	0.17%

*Source: MOET, 2017*

### **Organization of management**

At the preschool level, there are some types in organizing educational institutions such us kindergartens, pre-schools, nursery schools, independent child care groups, independent and so on. Non-public general schools now include the type of primary

schools, secondary schools, upper secondary schools and inter-schools including primary and secondary schools, primary, secondary and high schools. Over the past two to three years, the type of inter-schools including all levels from primary school to high school has been established in many provinces and cities.

The structure of organisation of non-public educational institutions has been formed in 2 common forms. First, the owner is individual investor who is also the principal. In some cases, the principals have been hired by owners. Second, for institution owned by companies or social organisations, the organisation structure is comprised Board of Directors/Board of Members or School Council, Board of Trustees, professional sections and management departments.

### ***Financial situation of non-public educational institutions***

Financial revenues of non-public educational institutions are formed from the collections of school fees, fees, state budget support, grants, and other revenues. Of these, tuition fees account for a large proportion of the most of non-public educational institutions. Revenues from tuition fees account for 79.9% of total financial revenues in non-public primary schools in 2016. Similarly, this proportion of non-public inter-school and kindergartens is 74.75% and 74.3% respectively. In terms of financial expenditures, payments of non-public educational institutions include such principal items as expenses for infrastructure construction, recurrent expenditures, salaries, salary allowances, bonuses, insurance, facility repairs, tax obligations, etc. In which regular expenses, expenses for salaries and infrastructure are expenses which account for large proportion.

As reported by non-public educational institutions, financial revenues and expenditures continue to rise in the period between 2011-2017 for all non-public educational institutions. However, the balance of financial revenues and expenditures in school groups by grade level is different. Most of preschool and primary schools are not able to balance while non-public secondary and high schools have made up for the costs and are profitable in the period of time from 2011 to present except 2014.

### **1. Research Method**

To collect necessary data on assessing the development of non-public educational institution from local education administrators, a quality study has been done. Specifically, in-depth interviews were conducted within 30 selected provinces across country including 12 provinces in North, 8 provinces in Central and 10 provinces in South. In each province, 2 districts have been selected. In-depth interviews and focus group discussions were conducted at the offices of the provincial department of education and training.

Firstly, in-depth interviews have been conducted with the director/deputy director of the Department of Education and Training. The issues covered in the in-depth interview included (1) assessment of the context and potential for the development of non-public educational institutions in the locality, (2) assessment of the legal framework for forming and managing non-public educational institutions, (3) evaluating operation and performances of non-public educational institutions and (4) what could be done to promote

the operation and sustainable development of the non-public educational institutions. 29 records of the leaders' opinions have been completed due to the absent of leaders of Haiphong Department of Education and Training. Secondly, in-depth interviews with the director/deputy director of the District Education and Training Officers were conducted. Within the interview, 4 main themes have been covered including (i) assessment of the context and potential for development of the non-public educational institutions, (ii) assessment of the legal framework for forming and managing non-public educational institutions, (iii) evaluate the operation and performance of the non-public educational institutions and (iv) what should be done to promote the operation and sustainable development of the non-public educational institutions. The result is 60 records of discussion. Finally, total of 89 records were edited and analysed with the help of Nvivo 7 software.

## **2. Discussion, Conclusion and Recommendation**

From the perspective of local education administrators, the non-public education system has been established and had made a definite contribution to local education. However, the number of educational institutions and the number of pupils enrolled at all levels of the non-public education system is very low compared to the target. It could be said that there are many shortcoming, disadvantages and inadequacies in the development of the non-public educational institutions in provinces across country in the past 5 years. The following is key findings on the assessment of local education administrators.

### *(1) Non-public educational institutions are formed late and developed unevenly*

In terms of geography, most of non-public educational institutions are concentrated in big cities. In the provinces, the non-public education institutions are distributed mostly in the central area of the province of which high quality -high tuition fee are focused on satisfying demands of high and relative high-income families. In large cities such as Hanoi, Hochiminh, the number of non-public schools are concentrated in the suburbs but not many pupils are studying in those schools due to the low demands and difficulties in access. Especially, in remote and mountainous areas, almost all non-public educational institutions are absent. The size of institutions is uneven most of which are small and medium sized institutions. Many owners of non-public institution want to increase their investment but they have limited land, finance and human resources. Investors are not easy to access capitals from commercial banks. They also are difficult to attract teachers and to find land for construction.

In terms of structure, the number of non-public preschool account for high proportions while there are few primary, secondary and high schools. Nonetheless, non-public kindergarten in residential areas near industrial parks are often overcrowded due to very high demand for child care. In contrast, non-public generation school in rural areas could not enroll enough students for example Hai Duong, Thua Thien Hue, Nam Dinh, etc.

### *(2) The system of non-public educational institutions is strongly polarized*

In one pole, a small number of the nonpublic education institutions is the high-quality schools. These schools are concentrated in central area of the provinces and cities. Students are taught in the best possible conditions about the education program, the

teachers, the facilities and the general education environment. However, tuition fee is several times higher than the average for non-public schools. The demand for high-quality schools to grow rapidly over the last two to three years has promoted investors, most companies are geared toward this segment. This is the brightest part of the non-public education picture.

In the other pole, a large proportion of the non-public educational institutions are medium and low quality educational institutions that meet the learning needs of children of low and medium income families. Most of those schools are distributed in rural areas. The private kindergarten and private independent child care groups are particularly high in this group. In fact, operation of the private independent child care group is experiencing inadequacies leading to misconception about the development of non-public educational institutions.

*(3) The performance of non-public educational institutions is strongly dominated by motivations for high profitability*

Owners of non-public educational institutions are individual who tend to want to recover capital in the short term and make quickly profit. This often leads to violation in the establishment and management of the school. The most common violations are the size of the class that exceed the required numbers of pupils, the shortage of facilities. Whereas owners of non-public general education institutions are enterprises which have advantage of investment capital and managerial organisations, they are not under pressure to make quick profits from education. It is possible to accept low profit to apply the tuition fees that are appropriate to the ability customers' payment. On the other hand, regulations on establishment and management are followed more fully and seriously.

*(4) Basically, the standard education program promulgated by the Ministry of Education and Training has been applied fully in non-public educational institutions.*

Educational programs of high quality institutions are often supplemented and adjusted by reference to programs in developed countries. Modern teaching and learning methods are applied focusing on the skills and foreign languages for students. Based on the standard program, some propriate subjects are added in high quality non-public schools also.

By contract, non-public educational institutions that target to popular customers tend to cut some extra subjects in the programs concentrating to core subjects and main activities in the school. Especially, independent private child groups are most likely to provide care services only without teaching during the children attending in the classroom.

*(5) The staff and teachers of non-public educational institutions are unstable unequally in terms of quantity and quality.*

Most of teachers are young, newly graduated from pedagogical colleges/universities have no experience to teach. Especially, the quality of teachers working in independent private child group is very low which does not meet the requirement of raising children. On the other side, teachers of the high quality non-public schools have been selected carefully and trained continuously during working for schools. They are often under a lot of pressure from teaching and take care children but they are also paid relatively well. In contrast, non-public schools in the lower levels often face to the volatility of their teachers

in terms of quantity. Most of the teachers are lack of experience, low professional capability. They do not want to stick to long-term non-public schools.

*(6) Activities of non-public educational institutions*

In one side, non-public preschools are quite good at enrollment and attract parents and students. They are easy to achieve the target number of students in each school year while the availability of services is limited due to the lack of necessary resources of the non-public preschools. In the other side, most of the non-public general educational institutions are difficult to enroll students in all levels except for a few non-public schools that they are reputable and well-quality that soon assert their position in the education market.

In term of finance, the activities of non-public educational institutions are not good as the institutions expected. The number of non-public educational institutions operating in good financial condition is little. The rest is not easy to balance financial revenue and expenditure. Some schools have financial resources and good financial results while the rest is difficult to get better financial results. Even though, several owners of non-public general schools have looked for other opportunities outside education sector.

*(7) The development of the non-public educational institutions is influenced by number of factors including macro-environment, the sector environment and the internal education system.*

In such, the most important factors that effect to activities of the non-public educational institutions are growth of economy, legal system, perception of learners on non-public education and motivation of investors. According to assessment of the local education leaders, the legal documents regulating the operation of non-public educational institutions are still inadequate. First, the lack of guiding documents, the inconsistency of the document system and the lack of master plan for the development of non-public education are quite serious. Barriers to the development of non-public education are also of concern. Some of the barriers to be covered include: (i) the distinction between public and non-public educational institutions in providing government support; difficulties in accessing capital and land, (ii) procedure of establishing non-public educational institutions is troublesome and not clear; regulation on the organisation of non-public schools is unconstitutional.

Another factor is the misperception of non-public educational institutions that leads to the prejudices of both learners and teachers in non-public educational institutions. In many provinces and cities, people have the notion that only their children can not go to public school so they would choose the non-public schools as a substituted solution. The disparity in the quality of education between public and non-public educational institutions along with higher costs of non-public schools that has made difficulty to change these prejudices.

Building and developing the non-public educational instructions in the national education system is the right policy of the Party and the State. The non-public education is integral part of national education system. Thanks to the development of non-public educational institution, learners have more opportunities to study in schools that suit their needs and abilities. Non-state educational institutions not only reduce the pressure on the public education system but more importantly, create competition among educational

institutions. However, the contribution of non-state educational institutions is very modest compared to the potentials for development and the needs of learners. There are still a lot of problems with the development of non-public educational institutions such as small scale of institutions, unequal distribution in term of geographic, quality of teachers, etc. It could be said that a lot of reasons that cause the above development status. These include: improper perceptions about the non-state educational institutions of learners, teachers and managers; barriers from state policies on development of non-public educational institutions in which barriers from state policies are very significant and adversely effect to development of non-public educational institutions. The following are some recommendations to improve the policy system to promote non-public educational institutions in the coming time.

*Firstly*, it is necessary to formulate a master plan for development of non-public educational institutions in the long-term; set up orientations and priorities for development of non-state educational institutions; fundamentally overcome the disequilibrium of supply and demand of services of non-public education; encourage the establishment of non-public educational institutions in areas where the demands for education services are high such as large cities and economically developed regions.

*Secondly*, eliminate discrimination between public and non-public schools in accessing the resources for development. The non-public educational institutions should be sure to access easily the main resources as land, capital, ... Learners and persons working in the non-public education sector must be treated equally and fairly compared to public education sector.

*Thirdly*, perfect the system of documents guiding the implementation of legal documents adjusted establishing and operating non-public educational institutions to improve the consistency, detail, transparency and clarity. It is also aimed to minimize the arbitrary application from regulatory authorities. Completing guidelines on access to land resources and tax policies for non-public educational institutions could be considered as a priority.

*Fourthly*, to complete the existing legal documents on the administrations of non-state educational institutions in the educational program, the organizational structure for management, the regulation on enrollment, examination and accreditation of quality.

*Fifthly*, to improve regulations on insurance social security, commendation, incentive for people working in non-public education sector.

*Finally*, state investment for education should be determined on the number of students enrolled at all levels regardless of state and non-state educational institutions to ensure equity for learners; allowing non-public educational institutions to be self-reliant in education programs, taking self-responsibility for outputs according to announced commitment; to provide credit, tax and fee preferences for non-public educational institutions.

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# VOCATION EDUCATION QUALITY FROM DEMAND SIDE'S PERSPECTIVE, THE CASE OF TRANSPORT TECHNOLOGY UNIVERSITIES IN THE NORTH OF VIETNAM

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## **Abstract**

*Quality outcomes from vocational education and training (VET) are fundamental to ensuring a skilled workforce and supporting a productive economy. The quality of vocational training from the demand's perspective is defined as meeting the customer specification, needs or requirements. Using the method of Exploratory Factor Analysis – EFA and Multiple Regression Analysis to get the analytical results of 275 respondents as graduates of University of Transport and Communication, University of Transport Technology (the two universities training on transportation in the North of Vietnam). The results show that factors are measured by the observed variables in the study that ensure reliability and relevance. The descriptive statistics result of vocational training quality is 3.28, at a quite low level, while all independent variables are at average level (between 3.1 to 3.48) with the highest value related to the quality of the teacher and the lowest are facilities and training programs and management capacity of university. However, the regression results show that the qualification of the teacher, material facilities and training program, management capacity and job opportunities at the training school do not affect the quality of the training while "Learners - NH" have a great positive effect and the labor market information has a negative effect on the training quality of the school significantly. Base on those data, some policy recommendations have been given out in order to improve the training quality of transport technology universities in the north of Vietnam in particular and the vocational training quality of Vietnam in general.*

## **1. Introduction**

Assuring the quality and relevance of vocational education and training (VET) has become a more important and challenging task as today's labor markets change faster than ever. If learning doesn't lead to satisfactory outcomes, everyone loses: learners, employers and society at large. This is what stirs up the field of quality assurance in VET. Harvey and Green (1993) explore the nature and usage of quality in relation to higher education and point out that quality is a relative concept. Harvey (2006) provides some definitions of quality such as: quality as perfection sees quality as a consistent or flawless outcome; Quality as fitness for purpose sees quality in terms of fulfilling a customer's requirements, needs or desires; Quality as value for money sees quality in terms of return on investment.

Another perspective on the concept is offered by Cheng (2001), in which he proceeds to identify three paradigm shifts in quality improvement in education: (i) internal quality assurance, which ‘makes an effort to improve internal school performance, particularly the methods and processes of teaching and learning’; (ii) interface quality assurance, which emphasizes ‘organizational effectiveness, stakeholders’ satisfaction and market competitiveness and makes an effort to ensure satisfaction and accountability to the internal and external stakeholder; (iii) future quality assurance, which is defined ‘in terms of relevance to the new school functions in the new century as well as relevance to the new paradigm of education concerning contextualized multiple intelligences, globalization, localization and individualization. Although quality assurance (QA) processes in VET and Higher Education are based on similar principles that can be seen from the supply side’s perspective (internal quality insurance or quality as value for money) or demand side’s perspective (quality as fitness for purpose, interface quality assurance). However, there are some differences to be noted. QA in VET is required to provide stronger evidence that product (competent graduate) fits for purpose (needs of the industry) (Marko Savic, 2016). Therefore, training providers are expected to ensure high level of readiness of their graduates for the employment.

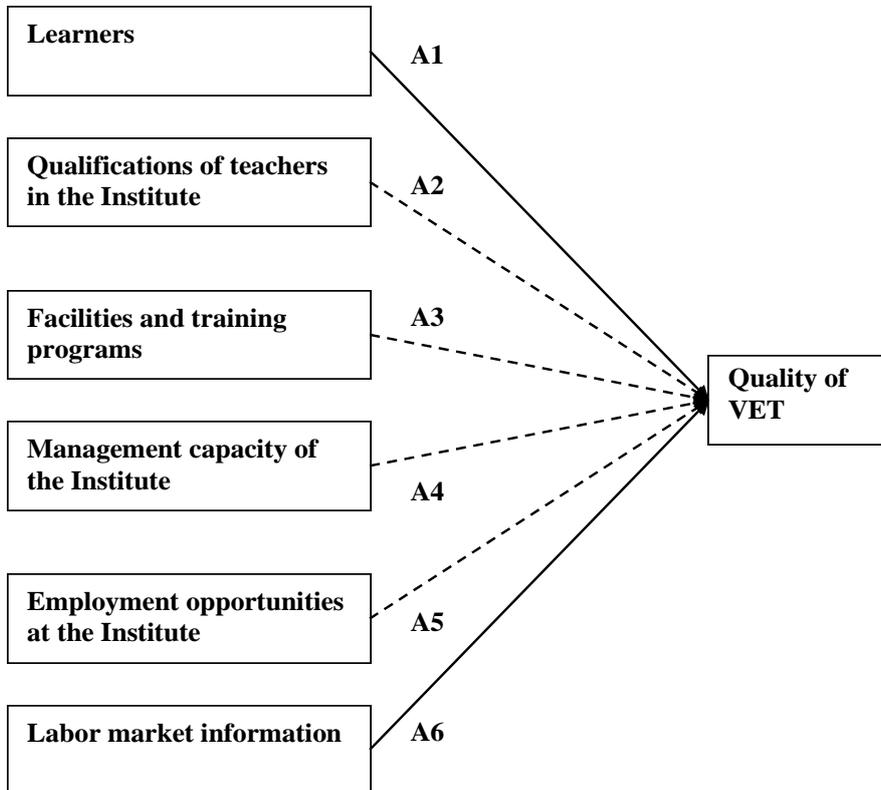
Ministry of Education in Vietnam states the importance of quality human capital as the major pre-requisite for the sustainable development of the country. Thus, improving the quality of training is the first priority of universities in Vietnam. There are many researches on this field in the recent years such as Pham Vu Phi Ho and Nim Ngoc Yen (2017); Son Trinh Van, et.al. (2016), Nguyen Hoang Lan. et.al. (2015), however, most of them focus on the quality of university’s training from the perspective of employers and the case studies were not vocational training. In addition, in 2013, Government has approved the strategy for development of vocational training stage 2011 - 2020, in which nominated Ministry of Labor - Invalid and Social Affairs to submit for government approval of the project “Basically and comprehensive innovation of vocational training” towards 2020 in order to upgrade a skilled workforce to meet the demands for development of industries and contribute to the improvement of nation’s productivity and competitiveness, however, the recent Labor survey results show that when Transport graduates enter the job market, most of them are unaware of the employment reality. They are either shocked or unprepared to adapt to the working environment or find it difficult to cope with their job responsibilities. Thus, improving the quality of vocational training in transport sector is necessary. To date, there are 10 public universities or Public Institutions of Higher Education (PIHE) related to transportation belong to ministry of transport of Vietnam (MOE, 2014a & 2014b), nevertheless, there are no research on quality of vocational training in this field especially research on external assessment of training quality. This paper will conduct the evaluation of quality training in transport sector base on the assessment of graduated students of the two university of transportation in the North of Vietnam as University of Transport and Communication, University of Transport and Technology. The paper is structured into four sections. After this introduction, Section 2 describes the research methodology and data. Section 3 present the results of research. Finally, the Section 4 will be some discussion and conclusions.

## 2. Research Methodology and Data

### 2.1. Research Methodology

In this study, the quality of vocational training is based on definition in Harvey (2006) and Marko Savic (2016) whereas quality is defined as fitness for purpose of a product or service. From the demand's perspective, fitness for purpose defines quality as meeting the customer specification, needs or requirements. Thus, quality of vocational training can be measured as the satisfaction of the learner between the learning outcomes achieved against the original goal; Learning contents are appropriate to the reality; Ability to apply for a job.

After studying the models and overview of factors affecting to quality of vocational education training, the research uses 6 factors such as the learners (characteristics and attitudes); teacher qualification (Knowledge, experience, sympathy with the students of the lecturer); Facilities and training programs; Management capacity of university; Job opportunities at the university; and labor market information quality of service.



**Figure 1. Relationship between the research variables**

Base on the list of factors affecting to quality of vocational training, the survey was designed to collect student assessments of the quality and influencing factors. The main part of the questionnaire consisted of 33 observed variables, of which 30 observed variables were used to measure students' perceptions about the six influencing factors of training quality, the other three measure training quality. Specifically, table 1 presents the list of observed variables which are Likert scale survey questions (1. Do not like; 2. Dislike; 3. Normal; 4. Like; 5. Like so much)

**Table 1: List of observed variables**

Code	Observed variables
<i>Learner</i>	
NH1	Your apply based on your ability and family conditions.
NH2	You always get support from your family.
NH3	You are trying to learn a career to find a job
NH4	Before the course, how much knowledge do you have?
NH5	You are always optimistic about your job opportunities.
<i>Teacher Qualification</i>	
GV1	Do teachers have a good knowledge of the relevant fields?
GV2	Are teachers experienced in practical matters?
GV3	Is the practical skill of the teacher well-versed?
GV4	Is the teacher's communicative ability easy to understand?
GV5	Is the classroom management skill of the teacher good?
GV6	How well is the coordination ability of teachers in management of class activities?
<i>Facilities and training programs</i>	
VC1	Are the presentation facilities (tables, microphones, projectors, equipment) meeting the requirements of the lecture?
VC2	Does the quality of modeling, simulation, and practical equipment meet the requirements of the lecture?
VC3	The quality of the materials (syllabus, lectures, reference materials) prepared for the course is sufficient?
VC4	Are there many situations, such as related facts, that are included in the lecture?
VC5	Is the training mix between theory and practice appropriate?
VC6	Do learning conditions (furniture, lighting etc.) meet the requirements of the learner
<i>Management capacity of the Institute</i>	
QL1	School-based policies that match learners
QL2	Management competence in all aspects of the field is good.
QL3	The School's culture (timetable, uniforms ...) are friendly, positive?
QL4	School security is always good.
QL5	The school has a policy of exempting tuition fees for outstanding students or special circumstances
<i>Job opportunities at the Institute</i>	
VL1	The Institute provides supportive policies for graduates.
VL2	Students who have achieved excellent academic results are kept in a school setting.
VL3	100% of students after graduation get jobs

VL4	The Institute has a close relationship with the business of students after graduation.
<i>Labor's market information</i>	
TT1	The Institute provides timely labor market information.
TT2	School trains depend on market needs
TT3	Learners can easily grasp the recruitment information.
TT4	Students feel satisfactory with information supported by school.
<i>Quality of VET</i>	
CL1	The satisfaction of the learner between the learning outcomes achieved against the original goal.
CL2	Learning contents are appropriate to the reality.
CL3	Ability to apply for a job.

The study uses the method of Exploratory Factor Analysis – EFA and Multiple Regression Analysis, using SPSS 21 to get the analytical results.

## 2.2. Data

By using the EFA method, the sample of the study requires a minimum of 5 observations per variable (Hair.et.al, 1998), thus with the 33 observed variables, the survey needs to collect data of at least 165 respondents. The study has sent randomly 350 questioners to graduates of University of Transport and Communication, University of Transport Technology (the two universities training on transportation in the North of Vietnam) and finally the number of respondents were 275 (satisfies the sample's requirement).

**Table 2. The characteristic of respondents**

<b>Evaluation Criteria</b>	<b>Frequency</b>	<b>Percent, %</b>
<i>Sex</i>		
Male	202	73.5
Female	73	26.5
<i>Age</i>		
From 18 to 25	256	93.1
From 26 to 35	10	3.6
From 36 to 45	6	2.2
Over 45	3	1.1
<i>Study</i>		
Road and Bridge Construction	93	33.8
Automotive Technology	91	33.1
Finance - Banking	57	20.7
Information Technology	34	12.4

*Source: Base of data collection*

The data analysis process included: Descriptive statistics, Evaluate the reliability of the scale over Cronbach's Alpha; Exploratory factor analysis (EFA); Multiple regression analysis

Overall regression function:

$$L_i = \beta_1 + \beta_2NH_i + \beta_3GV_i + \beta_4VC_i + \beta_5QL_i + \beta_6VL_i + \beta_6TT_i \quad (1)$$

### 3. Results of research

The descriptive analysis results of training quality show that the average grade point above average level is 3.28 still low, the standard deviation is relatively small 0.8 show that the level of training quality of the learners is quite similar. In the measured aspects, the learner rated the "Ability to apply for a job" (CL3) as highest aspect with average level 3.39 and the lowest in the "The satisfaction of the learner between the learning outcomes achieved against the original goal" (CL1) of 3.12. There are, however, no significant differences in the assessment scores from learners as seen in Table 3 below.

**Table 3. Evaluation results of VET quality at present**

	N	Range	Minimum	Maximum	Mean	Std. Deviation
CL1	275	4	1	5	3.12	.688
CL2	275	4	1	5	3.31	.808
CL3	275	4	1	5	3.39	.915
General assessment	275	4	1	5	3.28	0.80

*Source: Analysis results by SPSS software*

To the learner factor (removes NH5 due to lack of credibility needed through EFA analysis), the analysis showed that the average score was above the average of 3.45, the standard deviation was relatively small at 0.92. In aspects of the learner-factor survey, the highest rating was "3.93" aspects "You are trying to learn a career to find a job" (NH3), and lowest rating was "Before the course, how much knowledge do you have?" (NH4) with 2.98. This demonstrates the need for a career and understanding of the career still have a gap in the learner's perceptions.

For the teacher qualification, the results of the analysis showed that the average grade point of the 5-points Likert scale is 3.48, the standard deviation is quite small 0.89. This shows that the level of the learner's perception of the teacher's level is quite satisfactory. In terms of teacher evaluations, the highest rating "Are teachers experienced in practical matters" that was rated (GV2) at an average of 3.64 and lowest at "How well is the coordination ability of teachers in management of class activities" (GV6), 3.31.

For the factor of facilities and training programs, the analysis results show that the average rating score perceived is 3.10, the standard deviation is quite small 0.98. This indicates that the level of perceptions of the learners in terms of facilities and training programs is quite good. In aspects of facilities and training programs assessment, the highest rating is "The quality of the materials (syllabus, lectures, reference materials)

prepared for the course is sufficient" (VC3) with average of 3.32 and the lowest in terms of "Do learning conditions (furniture, lighting etc.) meet the requirements of the learner "(VC6), 2.87.

For the factor of management capacity of university, the average rating score perceived on average in the 5-points Likert scale is 3.33, the standard deviation is quite small 0.95. This shows that the level of the learner's perception of the management competence of the school is quite good. In terms of the assessed aspect, the highest is in the aspect of "The school has a policy of exempting tuition fees for outstanding students or special circumstances" (QL5) average of 3.77 and the lowest is "University-based policies that match learners" (QL1) with 3.08.

The average rating score perceived on job opportunities factor is 3.29, the standard deviation is quite small 1.07. This indicates that the level of the learner's perception of the job opportunities at the training school is relatively good. In terms of the assessed aspect, the highest was "Students who have achieved excellent academic results are kept in a university setting" (VL2) with 3.56 and the lowest for "100% of students after graduation get a job "(VL3), 2.92.

The analysis results of labor market information show that the average rating score perceived is 3.18, standard deviation 1.02. This shows that the level of perceptions of learners in the labor market information is quite good. In terms of the assessed aspect, the highest was the "School trains depend on market need" (TT2) with average of 3.26 and the lowest for the "Students feel satisfactory with information supported by university" (TT4) is 3.09.

The analytical results show that the Cronbach Alpha coefficients of both 6 quality influencing factors and training quality are greater than 0.6. Thus, factors are measured by the observed variables in the study that ensure reliability and relevance. Specifically, (i) the Cronbach Alpha coefficient of learner factor is 0.638; (ii) the "teacher qualification" factor's Cronbach Alpha coefficient is 0.897; (iii) the Cronbach Alpha coefficient of "Facility and training programs" factor is 0.837; (iv) The "management capacity of the Institute" test result in Cronbach Alpha is 0.806; (v) the employment opportunities' Cronbach Alpha coefficient is 0.797 (vi) the Cronbach Alpha coefficient of "labor market information" factor is 0.872; and the "quality of the training's Cronbach Alpha coefficient is 0.612.

The results of the exploratory analysis for the variables of affecting factors (independent variables) after the removal of the variables with a small factor loading factor of 0.5 (NH5) by orthogonal rotation showed that the KMO coefficient was greater than 0.5 (0.895), Bartlett's test with a p-value of 0.000 is less than 0.05, the explanatory variance is greater than 50% (66.551%), the factor loading factor of observation variables is greater than 0.5, the observed variables converge to six factors such as theoretical model. This suggests that research data using factor analysis is appropriate. We use the same method for dependent variable (quality of vocational training) so the KMO coefficient is greater than 0.5 (0.638), Bartlett's test has p-value less than 0.05 (0.000), the factor loading factor is greater than 0.5, the observed variables converge on a single factor. This

shows that using factor analysis is appropriate, the dependent variable "Quality of VET" is a one-way scale.

Use the least squares (OLS) to determine the regression coefficient  $\beta_i$  of the equation 1. The result is presented in table 4.

**Table 4. Results of multivariate regression analysis**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.048	.135		.354	.723
NH	1.086	.038	.908	28.479	.000
GV	.010	.034	.010	.296	.767
VC	-.033	.036	-.034	-.913	.362
QL	.060	.037	.060	1.633	.104
VL	.017	.031	.021	.551	.582
TT	-.101	.034	-.124	-2.987	.003

*Source: Authors' calculation*

According to Table 4, Sig. The coefficients  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$  are higher than the 5% significance level; so they are not statistically significant, meaning that the qualification of the teacher, material facilities and training program, management capacity and job opportunities at the training school do not affect the quality of the training. It is not that these factors are not influenced by this, but the learner's assessment of these conditions is to ensure that they have a good learning outcome. This can be explained by the support policy of the Ministry of Transport to improve the output quality in some universities, so the training universities in the transport sector today are quite equal in quality and quantity from training programs to facilities

#### **4. Discussion and conclusions.**

The regression results show that "Learners - NH" have a great positive effect on the training quality of the school. Learners are the key factor determining the quality of training. This is also very accurate, because human beings are always the core of all change. Beside that, the results also show that one of most disadvantage of current vocation training in general and in transportation training in particular in Vietnam is that training in schools is not close to the actual labor market demands, there is no link between training schools and businesses. These facts have been resulted from the vocational training curriculum, program have many contents that are formalistic, not updated, supplemented regularly to be appropriate with the requirements of the labor market. The quality and effectiveness of training of many vocational training institutes are still low and

not in line with the human resources demands of each sector and each locality. The relationship between VET institutes and businesses is loose.

To improve the quality of transportation training, there are some policy recommendations have been suggested.

*Firstly*, is improvement of awareness of learner's role. Students need to negotiate with themselves in the learning process to achieve the set forth target. Many studies of universities transport technology show that students have different needs, motivations, and expectations of a major, a subject, and in the course of learning they frequently adjust their study plan to be appropriate with the objectives of the course. Knowledge is always redefined when students discover more about it, and may be replaced by more appropriate new learning strategies in the future.

*Second*, developing the forecast of human resource and training demands following the sector structure, profession and qualification to be suitable to the requirements of socio-economic development in each period. To renovate the mechanism of receiving and processing information, building database in the field of vocational training. Strengthening the link between training and businesses, to improve regulations so that businesses are subject of vocational training, participating in all stages of training process. Apply technology to build a system linking supply and demand of training in the whole system.

*Thirdly*, enhance awareness of the role and morality of the teacher, so that the teachers need to know their qualification, capacity and then make efforts to improve their knowledge, update new knowledge, take the international standard training program as a measure to learn, develop and improve the quality of the lecture. Encouraging enterprises, productions, business and service establishments to participate in training and fostering of vocational skills for teachers in the form of receiving them to practice at enterprises for updating and improving practical skills, accessing to new technology, etc. Training, fostering and standardizing for formation of a team of managers who have professional working manner.

*Finally*, continue to innovate teaching and learning methods, taking students as the centre of the training process. Basically, renovate forms and methods of examination and test in universities education. To attach the role and responsibility of the businesses, from the determination of the requirements on exam questions related to jobs, self- control and self-responsibility to the knowledge and skills to be included in the examination and test.

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# EDUCATION QUALITY OF NON-PUBLIC KINDER GARDENS IN VIETNAM: A LOOK FROM PARENTS POINT OF VIEW

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## Abstract

*Along with the development of socio-economy, in order to meet the needs for schooling, the non-public education area (NPA) in Vietnam has gradually developed, especially for the kinder garden level. However, the development is not as expected with many scandals causing skepticism. The research investigates more than 1,700 parents - who have children in NPA kinder garden in 42 provinces shows that the NPA kinder gardens meet a decent expectation. The level of satisfaction is corresponding higher in urban areas, which were stand as school or foreign effects related. The level of satisfaction is lower in NPA kinder gardens sites/ classes that serve immigrant residents in industrial zones. However, there are a lot of NPA kinder gardens have not yet developed into a school, with low tuition fees or/and the establishment based on the private group of children and baby sister's/ teachers are not professional trained. This shows that it is necessary to roundup the government's investment in kinder gardens to develop into a proper school, to provide better education services to help children develop well, not to be afraid of going to school. For every child, regardless of class, "each school day is a happy day."*

**Keywords:** service quality, kinder garden units, non-public

## 1. Introduction

Vietnam national education system has been formed and developed for a long time and is relatively comprehensive variety of levels (i) pre-school (kindergarten); (ii) general education with primary, secondary and high schools; (iii) vocational education for elementary, intermediate, college and other vocational training; and (iv) higher education with undergraduate and postgraduate (referred to university education).

For a long time, the educational services are mostly undertaken by the government through public educational units. In 1997, according to Resolution No. 90/1997/NQ-CP, the Government has allowed investors to participate in providing educational services. The NPA education sector has emerged and developed rapidly, met the needs and reduced the pressure on public educational sector. By the year 2017, the number of NPAs in Vietnam accounted for about 6.7% of the total number of the national education system, creating a study for about 6% of pupils and students nationwide (Pham Thi Huyen et al., 2018). This figure is rather modest compared to many countries in the region and in the world. In terms of higher education, the percentage of students in NPA schools and the percentage of NC schools in Vietnam is only 14% and 19%, while those in Korea are 78% and 87%, and those in Japan are 77% and 86%, in the Philippines are 81% and 75%, in Malaysia are 92% and 39%, in Pakistan are 64% and 18% (Dam Quang Minh, Pham Minh Ly, 2014)

Kinder garden education, the first education of every human being, has been receiving the common interest of the whole society. Under the Education Act (2009), kinder garden education carries on the nurture, care and educates children between three months and six years old. The goal is to help children develop physically, emotionally, intellectually and aesthetically, and to form personality, to prepare children for the first grade. Since 1946, after more than 60 years since the Ho Chi Minh's Ordinance No. 146/SL in education published, the number of kinder garden education facilities has so far reached 14,881, meeting the needs of 5,085,635 children, of which there are 2,288 non-public schools, meeting the needs of care and learning of 672,353 children. In the non-public education areas, the number of education units and pupils of pre-school education accounts for the highest proportion. NPA kinder gardens account for 15.37% of kinder gardens; groups of NPA children accounts for 32.24%, while NPA primary school enrollment is 1.1%; secondary school is 0.5% and high school accounts for 14.1% at the same level. At present, non-public kinder garden facilities in Viet Nam are organized in three forms: semi-public, private and public sector, in which private sector takes the biggest proportion due to the inadequacies and privatizations often associated with large facilities, which are licensed to the school.

Due to the increasing demands of parents, many NPA kinder gardens have become more advantageous in terms of facilities, programs and young teachers. However, it is undeniable that there are still a number of private and non-public units that have not yet ensured the quality of facilities and teachers. Hence, child abuse does not only affect the development of the child but also discourages public opinion, causing a lack of sympathy with NPA education in general. Assessment and quality assurance in these units becomes more necessary than ever before.

Based on the survey of the whole non-public facilities in the end of 2017 to assess the quality of NPA education, the paper focuses on analyzing the quality of NPA kinder garden education. The paper includes the following: (i) Overview of the early childhood education services quality; (ii) Research methodology; (iii) Discussions (iv) Conclusions and recommendations.

## **2. Overview of the early childhood education service quality**

Education has become a fundamental element of promoting social development through positive effects on the aspects or processes, creating social development. In general, education is understood as the process of formation and development personality under the influence of activities performed consciously by staff in the school, the family and the society. For example: the impact of knowledge and skill sharing, lifestyle, the sharing of books and magazines... or education, having targeted effects, is a systematic and structured system. It also has specialized system (the school) that the educators create positive effects on the personality development.

In a narrow meaning, education is understood as the process of forming and developing the learner's personality. It is impacted by the school's pedagogical activities, which only concern some aspects: education, physical education and labor education.

According to the WTO (1995) and Decision No. 10/2007/QĐ-TTĐ (2007), education is a form of service in economic sectors; educational services are linked to specific education and training activities, such as providing courses, training programs, learning materials, teaching equipment's consultant and training courses.... (Phung Huu Phu et al., 2016).

The evaluation of service quality in education is generally based on the theory of service quality. Units must also compete with each other and competitiveness depends on the quality, which similar to a company has a competitive advantage when it comes to improve service quality and meeting demand (Parasuraman et al., 1991). Parasuraman et al. (1985) suggest that service quality is the gap between customer expectations and perceptions after using the service. Grönroos (2007) reevaluates the service quality based on a comparison of customer expectations on their previous service. Some studies use customer satisfaction to evaluate service quality. Service quality is then reflected in the ability to satisfy the needs and expectations of customers with that product (Bergman & Klefsjo, 2004). Customer satisfaction can be considered as a result and service quality is the cause of such satisfaction (Cronin and Taylor, 1992; Spreng and MacKoy, 1996). They are therefore closely related (Parasuraman et al., 1988).

Similar to other services, educational services may also be assessed through satisfaction of the beneficiaries or with respect to the provision of it. The quality of education and training services is reflected in the evaluation of learners, trainers, managers and users of training products (Dang Thi Ngoc Ha, 2017). Many schools try to measure parent's satisfaction to assess the quality of their education (Brown, Cheng, Yau, & Ziegler 1992; Hecht, O'Connell, Michael, Klass, Dwyer, 1992. Henderson, 1993; Pederson & Wilk, 1993.) Runtti & Virtanen (2015) evaluates parents' satisfaction on the quality of education and childcare at the Finland International School in Qatar, on the following aspects: (i) the children's treatment and support (creating excitement, individual learning, learning process), (ii) the quality of the teacher (teacher, teaching) and (iii) the cooperation between parents and schools (communication, cooperation) Falbo and his colleagues evaluate the parents' satisfaction on a scale of 10, based on what their children received at school, the level of satisfaction increased. Vu Nhu Vuong (2012) synthesize the research and develop a theoretical model of parent's satisfaction in Ho Chi Minh City pre-school, including factors of reliability, responsiveness, competence, empathy, tangibles, and cost.

In Vietnam, the service quality of the education units is reflected in the government's recognition. The government assesses the ranking of kinder gardens up to national standards. Two levels of national standard schools are levels 1 and level 2, which are specified in the kinder gardens recognition Regulation. It is issued with Circular No. 02/2014/TT-BGDĐT 08 February 2014 by the Minister of Education and Training. Accordingly, kinder gardens are evaluated on (i) organizational and managerial aspects; (ii) teachers and staff; (iii) quality of child care and education; (iv) size, facilities and equipment; and (v) educational socialization. In this paper, (i) teachers and staff; (ii) facilities; (iii) Curriculum, methods and syllabus; (iv) Support service; (v) Tuition fee and other financial contributions are 5 factors will be use for measuring parents' satisfaction to education services at NPA kinder garden units.

### 3. Research methodology

This research approaches the service quality from parents' perspectives who selected facilities for their children to attend as pre-school children are not able to evaluate and share the service quality of units. However, the parents do not experience educational activities in the school so the team conducted in-depth interviews with administrators, investors, some teachers and parents at the NPA kinder garden. The aim is to better understand the needs and to select the criteria of service quality evaluation. Based on that, a questionnaire is designed to collect the necessary information on (i) organization management and operation; (ii) teachers and staff; (iii) facilities; (iv) curriculum, methods and syllabus; (v) support services and tuition fee. The study uses a Likert scale of 5 (degree of agreement is increasing)<sup>1</sup>. Descriptive statistics technique is used to analyze data from the questionnaire with the support of SPSS 20.0 software.

Based on Yamane's formula (1967):  $n = N / (1 + N * e^2)$

Where n is the sample size, N is the sample size, e is the level of precision. The total number of children in NPA kinder gardens following the Ministry of Education and Training report in the 2016-2017 school year is 836,153, the error is 5%, the confidence level is 95%, assuming the number of children and the number of parents is equally, the minimum sample size is 400.

The survey is conducted based on the reliable statistics of target groups. As a result, there are 1731 parents of pre-schools in 42 provinces around Vietnam participated in the survey, with the specific structure as shown in Table 1.1.

**Table 1.1. Sample's demographic characteristics**

No	Criteria	Freq.	Proportion (%)	No	Criteria	Freq.	Proportion (%)
1	<b>Gender</b>			5	<b>Income/month</b>		
	Male	532	33,8		Under 20 million	1142	74,1
	Female	1043	66,2		From 20-30 million	293	19,0
2	<b>Parents' age</b>				From 30-45 million	68	4,4
	Under 25	112	7,1		From 45-60 million	27	1,8
	25-34	913	57,5	Over 60 million	11	0,7	
	35-49	525	33,1	5	<b>Number of kids</b>		
	50-60	32	2,0		1 kid	622	41,4
	Over 60	5	0,3		2 kids	769	51,2
3	<b>Education level</b>				3 kids	100	6,7
	Under high school	432	29,0	Over 3 kids	12	0,8	
	College	363	24,4	7	<b>Source</b>		
	University	588	39,5		Direct	1506	87,0
	Post graduate	106	7,1		Indirect	225	13,0

Source: Summary of NPA kinder gardens' survey, 2017

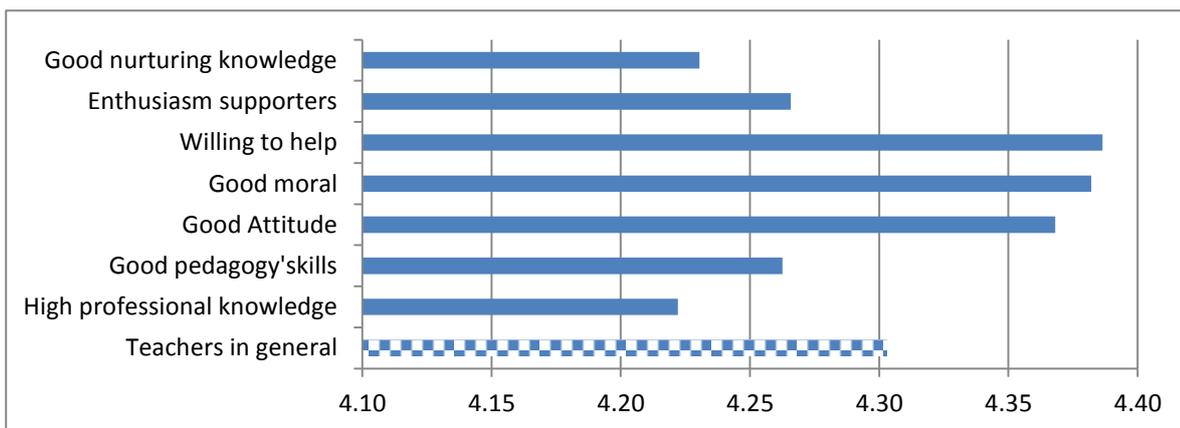
<sup>1</sup> The average score is used to measure satisfaction (Koobgrabe et al., 2008), in particular: 1.00 - 1.80, which means Absolutely unsatisfied; 1.81 - 2.60 means Dissatisfied; 2.61 - 3.40 means Neutral; 3.41 - 4.20 means Satisfied; 4.21 - 5.00 means Really satisfied.

The proportion of female parents participating in the survey is greater. Parents' income is different, but most of them are less than 20 million VND / month. There are parents who earn more, which more than 3% of parents earn over 45 million VND/month. This reflects precisely the different segments of kindergarden education provision. There are many pre-school tuition fees at an average of several hundred thousand dong per month. There are also schools with tuition fees up to 90- over 100 million dong per month. Most of them are young, which more than 65% is under 35 years old. Most families have 1-2 kids. Regarding education level, parents who have children studying in NPA kindergarden are mostly bachelors and above. The diversity of the sample makes it possible to express the opinions of different parent groups as reflected in the results of this study.

#### 4. Results

##### 4.1. Baby sisters/ teachers

The results of parents' assessment on baby sisters/teachers and staffs are generally good and very good, parents are satisfied with the teachers, rating at 4.3. In particular, parents most satisfied with the teacher who always care and help children; very friendly, respect children; have a positive spirit, cooperate with parents. Professional qualifications and knowledge of child care are underestimated but still at a good level.



**Figure 1. The evaluation of teachers and staffs**

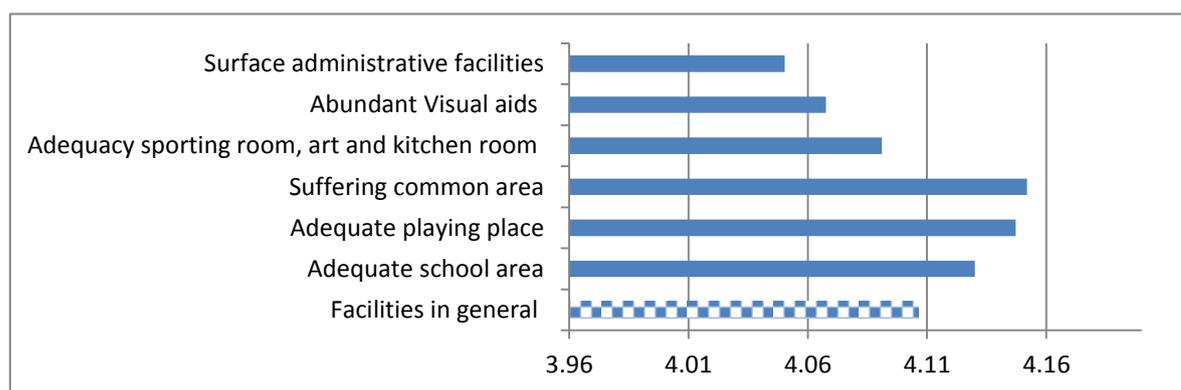
*Source: Summary of NPA kinder gardens' survey, 2017*

Differences in sampling, gender, age, education and income of the parents make the teachers' assessment have little difference. Direct respondents give lower scores (average score 4.28) than those who answer online (4.46). There are no significant differences between male and female parents. There is slightly difference in groups of different ages and income levels. In particular, the elder the parent is, the better the assessment is. Education level is similar, the higher the education level is, the greater level of satisfaction is. Of course, their children, coming from different social level, study in different facilities. When comparing parent groups with different income levels, the lowest rating coming from those with incomes is less than \$ 20 million (4.11), while the parents with the best rating are those with income highest input (4.59).

In fact, the majority of NPA teachers are young, enthusiastic, active but less experienced. However, due to the specific characteristics and Vietnamese culture, they do not stick to the NPA units. Therefore, despite the abundant supply of teachers, the quality is not uniform, staff disturbance affects the psychology of a child as he/she needs to get used to a new teacher. Naturally, this is partly offset by high quality NPA kindergartens, where they have a good salary policy. However, they apply a rigorous recruitment process and a regular review mechanism to pay salary and sign labor contract. Therefore, kindergarten teachers are always under huge pressure. Hence, NPA kindergartens have the advantage of having a lower child-to-teacher ratio than the public sector, which is 15.76 and 17.93 per cent respectively in the 2016-2017 school years at the kindergarten level and 10.43 and 9.91 at the nursery level (Ministry of Education and Training, 2017).

#### 4.2. Facilities

Elements of facilities are assessed including the learning materials and the structure of the basic buildings according to the Regulation of the Pre-School (Decision No. 04 / BHN-BGDDT dated 24 December 2015 by the Ministry of Education and training). Facilities at NPA kindergarten have been evaluated by parents with a good score at the average of 4.11 / 5.



**Figure 2. The evaluation of facilities**

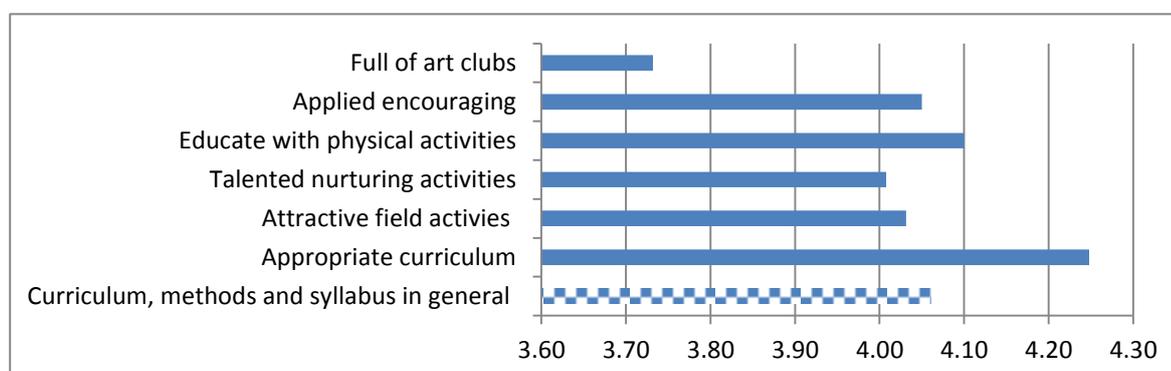
*Source: Summary of NPA kinder gardens' survey, 2017*

In terms of facilities, common living room, bedroom and garden, play area achieved the best rating. The administrative department and the learning materials have lower average scores (4.05 and 4.07 respectively). Kindergarten children, kinder gardeners do not have much contact with administrators, but the problem of learning materials is still a matter of support and concern. Beside the faculties equipped with modern learning materials and systems as diverse as in HCMC. Ho Chi Minh City, Hanoi, Binh Duong, Dong Nai and Bac Ninh, there are also lacking in learning materials, teaching aids, even toys for children like in Lang Son, Dak Lak, Dak Nong.

There is slightly difference between online and direct responses, NPA kinder garden facilities are better with online responses than those who respond directly (4, 26 and 4.08); Similarly, female is more satisfied than men (GPA 4.11 and 4.07). There is not much difference between parent groups in terms of gender, age, education level in NPA kinder gardens' assessments.

### 4.3. Curriculum, methods and syllabus

The curriculum of NPA kinder gardens mainly follows the standard curriculum of the Ministry of Education and Training. However, there are also a number of schools that use other instructional programs or teach other programs such as Montessori, the MOET's only additional program. Assessment of the curriculum, methods and content of teaching is generally good but not equal to the assessment of the teacher, staff and facilities,



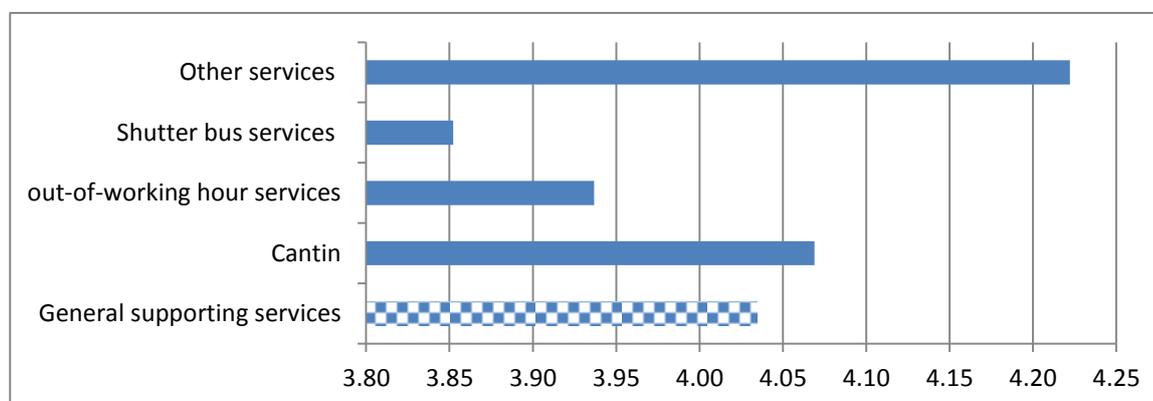
**Figure 3. The evaluation of curriculum, methods and syllabus**

*Source: Summary of NPA kinder gardens' survey, 2017*

The curriculum (4.25) is the best criteria. The curriculum combines knowledge with physical training and skills; encouraging students to apply in real life as well as extracurricular activities are also parents' happy points about the curriculum. More experience can help children to develop comprehensively both physically, intellectually and mentally. Parents expect more at NPA kinder gardens' clubs for children (the lowest rating on the program overall, reaching 3.73 out of 5).

### 4.4. Supporting services

In terms of support services, with in-depth interviews, parents are more interested in these services as most of them are not provided by public kinder gardens. The level of satisfaction for support services is good (4.07), which are lower than other aspects. The best service is canteen and boarding (4.07).

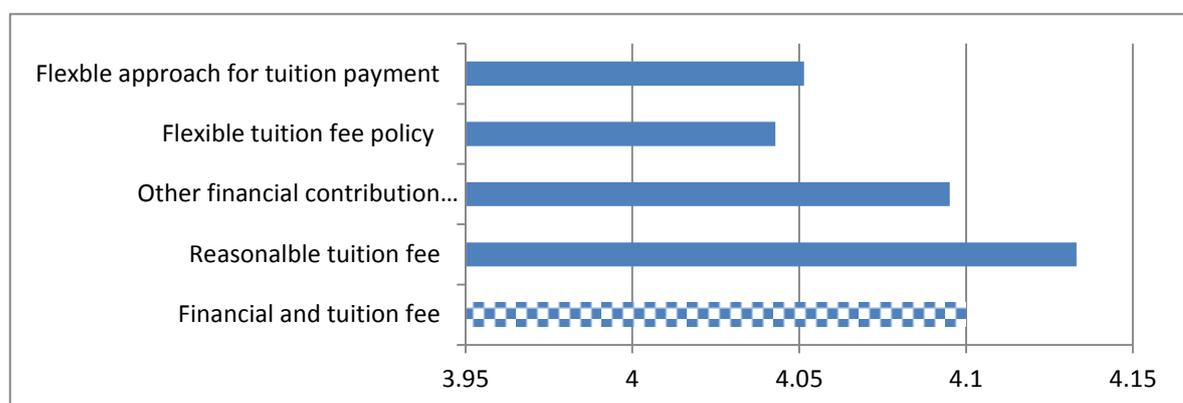


**Figure 4. The evaluation of support service**

*Source: Summary of NPA kinder gardens' survey, 2017*

#### 4.5. Tuition fee and other financial contribution

Regarding tuition fees, parents are relatively happy about tuition and other fees at NPA kindergarten. viewed from an economic perspective, consumers decide to buy the product when they think that the product value is commensurate with the price. Therefore, although there is much information in the public opinion about the unreasonable of NPA tuition fees, many still have demand for their children to study at these facilities.



**Figure 5. Tuition fee in the parents' viewpoint**

*Source: Summary of NPA kinder gardens' survey, 2017*

When comparing parent groups in age different, the level of satisfaction with tuition fee for parents aged 25-34 is the lowest. Parents with incomes around 45-60 million VND and spending around 5-10 million VND on their children are the most satisfied groups.

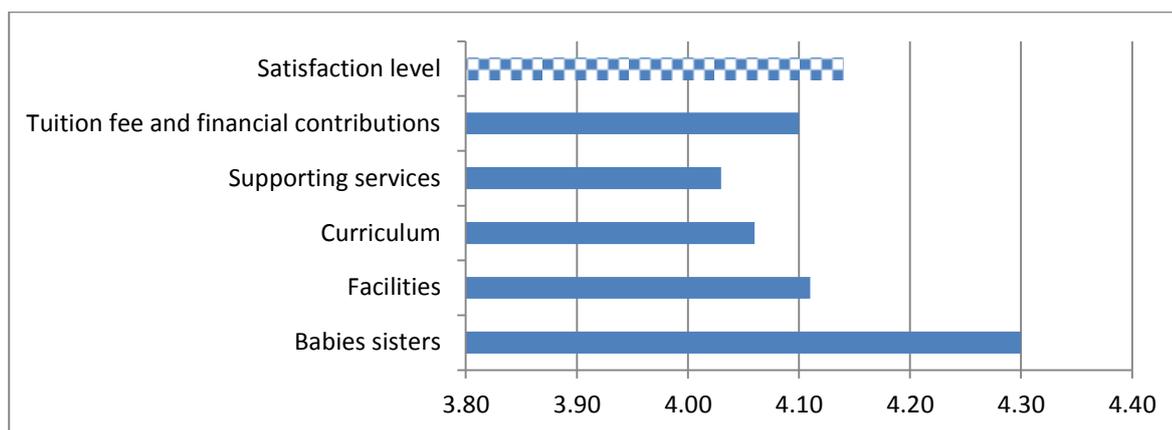
**Table 2. The evaluation of support service and tuition fee**

Groups		Support Service	Finance, tuition fee
Sources	Direct	4,01	4,09
	Online	4,17	4,13
Gender	Male	4,03	4,11
	Female	4,03	4,09
Age	Under 25	3,95	4,14
	25-34	4,02	4,09
	35-49	4,07	4,11
	50-60	4,15	4,11
	Over 60	4,41	4,40
Groups		Support Service	Finance, tuition fee
Education level	Under high school	3,92	4,09
	College	4,01	4,11
	University	4,09	4,09
	Postgraduate	4,21	4,18
Total	Under 20 million	4,00	4,08
	From 20-<30 million	4,10	4,13
	From 30-<45 million	4,09	4,11
	From 45-60 million	4,30	4,27
	Over 60 million	4,32	4,18

*Source: Summary of NPA kinder gardens' survey, 2017*

#### 4.5. Overall satisfaction

Overall satisfaction on NPA kinder garden is assessed at the bottom of the survey. Combined with the results of the assessment of the aspects of the above, we have:



**Figure 6. The overall evaluation of NPA kinder gardens**

*Source: Summary of NPA kinder gardens' survey, 2017*

The overall assessment is in line with the assessment, and parents are generally satisfied with the quality of their current educational services (the overall score is 4.14). Teachers, staff (4.3) are the best factors, at a very good level. Support services (4.03) and teaching programs, methods and content (4.06) have the lowest scores.

Parents who respond online are more satisfied than parents who respond directly. There are no differences between male and female in the overall assessment; the higher the age is, the higher the satisfaction level is (GPA 3.94 to 4.7); the higher the level of education is, the better the evaluation is (4.02 to 4.35); and the higher the income is, the better the evaluation is (average score from 4.11 to 4.39). There are no differences in the ratings of different parent groups across gender.

## 5. Conclusions and recommendations

From the perspective of service recipients, parents are relatively satisfied with the quality of NPA kinder garden education in Vietnam, particularly in terms of teachers and staff; infrastructure; tuition; curriculum, methods and syllabus; and support services. The gender, age, education level and average income of different parents vary somewhat. Gender differences are the least and the difference is most pronounced at age.

Although there are still problems with private facilities, parents are fairly satisfied with the service quality in NPA kinder gardens. Moreover, since the pre-school education sector has not had the government investment, the existence and development of NPA units is a natural tendency. Quality control first belongs to those units in order to attract students. At the same time, government management agencies in education should set standards to ensure the operation of these units, not to co-ordinate NPAs but with communication and information disclosure. It is a great way for parents to choose reputable units and to help parents become fully aware of the quality and standards of kinder gardens.

The government should strictly punish the units who do not meet the minimum requirements or who commit acts of violence, ill-treatment, etc. do not comply with regulations on raising children. At the same time, the communication needs to be oriented to avoid distortions of social comment about the NPA units in general. At the same time,

parents should be proactive in understanding the status of the units, setting up camera requirements to monitor the school's operations and making constructive contributions.

The choice of kinder garden units depends on a number of factors, including income and affordability that will affect the tuition fees, and for each tuition fee, the quality of service will vary. Therefore, the government should have policies for the development of NPA education centers in densely populated areas in order to control quality at the same time, to share the burden with the units and parents.

Local authorities also need to have policies and provide specific, timely and effective support to encourage the development of NPAs in general and kinder garden education in particular, particularly in highly developing areas or having good economic conditions. However, the development of NPA should come from changing, directing the development of the public sector is appropriate, direction, planning and clear roadmap.

Survey results show that, when selecting kinder garden, the parents are most concerned about the program; school reputation; infrastructure; school location; cost and then the introduction of relatives, friends. As a result, the most concerned aspects are the aspects with the lowest score / satisfaction. Therefore, NPA kinder garden children need to continue to promote their strengths and invest in facilities. These are the visual characteristics have the greatest impact on the feelings of parents. At the same time, investments in programs and teacher qualifications must be emphasized. These are factors that many parents are concerned about, which is the factor that can bring the most sustainable reputation for the school.

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# FACTORS THAT INFLUENCE ON STUDENTS' ATTITUDES TOWARDS PLAGIARISM: THE CASE OF VIETNAM

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## **Abstract:**

*Plagiarism is a frequent form of misconduct in academic environment, however the way that students recognize it is quite a new subject in Viet Nam. This research is to examine different factors affecting attitudes of students towards plagiarism in Viet Nam by questioning 845 students. The methodologies of Cronbach's Alpha, Exploratory Factor Analyzing (EFA) and linear multiple regression were used by SPSS program. The results show that there are 4 major factors having significant influence on students' attitudes towards plagiarism, including institution, lack of awareness, personal attitudes and lack of competence. Pressure and internet facilities have no impact on student's attitudes towards plagiarism. From that result, we also suggest that on the long term there must be some solutions to reduce the proclivity towards plagiarism.*

**Key words:** Attitudes, plagiarism, Viet Nam.

## **1. Introduction**

*The rationale of the study*

The education system in every area of the country has been facing a real challenge, which is cheating in academic. In the case of higher education, the time that students have to complete tasks that require innovative thinking more than ever before, plagiarism is a typical form of academic misconduct. McCabe et al. (2001) claimed that student's academic misconduct, such as cheating and plagiarism, has increased in recent decades and is an important concern in higher education. According to an article published on Thanh Nien online (2012), in fact, plagiarism from each other has been taken openly and popularly by not only students but also teachers in academic environment of Viet Nam. Gullifer and Tyson (2010) suggested that theory and research in psychology show that a thorough understanding of an individual's view of an issue or problem is an essential requirement for successful change of that person's attitudes and behaviour.

### *Purpose statement*

The purpose of this research is to explore what factors that have impact on students' attitudes towards plagiarism are. Also studying how to measure each factor influences on this attitudes. Moreover, we generate a model and validate the model of the impact of these factors on students' attitudes towards plagiarism.

### *Research questions*

To better understand factors that affect students' attitudes towards plagiarism, we sought to answer these questions:

1. How does pressure influence students' attitudes towards plagiarism?
2. How does internet facilities influence students' attitudes towards plagiarism?
3. How does institution influence students' attitudes towards plagiarism?
4. How does lack of awareness influence students' attitudes towards plagiarism?
5. How does personal attitudes influence students' attitudes towards plagiarism?
6. How does lack of competence influence students' attitudes towards plagiarism?

## **2. Literature review**

### *Attitudes towards plagiarism*

Plagiarism is a popular problem also is misunderstood by lacking of knowledge and skills. Researchers claimed that many people do not actually comprehend what plagiarism is. According to Smith et al. (2007), plagiarism is using other's words and ideas on purpose without accepting sources clearly. In addition, Smith et el said that plagiarism is a form of dishonest about mind, it is relevant to using other's words without citing and acknowledging fully. The intentional behavior including copy someone's idea and turn it into themselves is also considered a type of plagiarism.

According to Fishbein's literature (1961, p14), "Attitude is viewed as effective or evaluative in nature, and that it is determined by the person's beliefs about the attitude object. Most people hold both positive and negative beliefs about an object, and attitude is viewed as corresponding to the total affect associated with their beliefs". Fishbein and Ajzen (1975) also claimed that attitude towards an object is viewed as related to the person's intentions to perform a variety of behaviours with respect to that object. So we can conclude that attitude towards plagiarism is related to an individual's intention of plagiarizing behavior.

Many different studies have given factors that influence on plagiarism tendency. Harding et al. (2001) divided into three main group: demographic characteristic factors, social - economics factors and circumstance factors. Demographic characteristic factors include: gender, extracurricular activitie joining, age and educational level (graduate and postgraduate). Dordoy (2002) claimed that important factors that have impact on plagiarism are promotion, laziness or untimely management, accessibility to Internet materials, unaware of rules and regulations, and unintentional theft. Love and Simmons

(1998), together with Scanlon and Neumann (2002), proposed six factors contributing to plagiarism: lack of awareness, individual attitudes, availability of resources Internet, lack of capacity, pressure and institutional characteristics.

Base on Smith et al. (2007), our research team decided to investigate six factors which have influence on students' attitudes towards plagiarism. They are: pressure, internet facilities, institution, lack of awareness, personal attitude and lack of competence.

#### *Pressure*

Collins and Morris (2008) said that stress is a phenomenon involving the process of complex interaction between a person and their environment, which is constantly changing. As a result of stress, psychological, behavioral and physical symptoms can occur, increasing dissatisfaction and anxiety, which may produce a variety of illness. In term of academic, pressure of time that students have to complete assignment is the factor that promotes students to choose to plagiarize instead of doing by themselves. Moeck (2002) claimed that some students feel pressure to get better grades and some students struggle academically and feel that cheating is their only path to any kind of success. With tremendous pressure and competition for grades, some will cheat or plagiarize to maintain a high GPA, which can please parents, result in selection to school leadership roles, and impress corporate recruiters.

#### *Internet facilities*

Accoding to Razera (2011) the development of the internet for the past decades made possible the spread of information (any information) worldwide. Thus, almost everything is possible to be found in the internet, from articles and papers presented/published in prestigious conferences, journals to websites with texts written by anonymous persons. Within the ambit of this study, internet facilities were mentioned as the things that enable to disseminate any kind of information by a simple way all over the world. That also means that it is so easy and quick to access and copy available documents via internet. It has been alleged that the widespread availability of access to the Internet, and online academic journals have contributed much to the rising incidence of plagiarism, as they have made it possible for students to find and save large amounts of information from diverse sources with little reading, effort or originality (McKenzie, 1998). In addition, the use of the Internet for assignment completion was found to be strongly positively correlated to plagiarism (Eccles et al., 2006).

#### *Institution*

Smith et al. (2007) said that institution-specific factors can take many forms, including the attitudes of lecturers and administrators to the incidence of plagiarism, and the associated prevention, detection and punishment mechanisms in place. Franklyn-Stokes and Newstead (1995) argued that administrators and academic staff may not be doing enough to identify and implement measures to limit student plagiarism. In addition, Kibler (1994) also said institutional action on student plagiarism is generally of a reactive nature and is not nearly proactive enough in attempting to prevent or reduce it.

### *Lack of awareness*

Lack of awareness is understood here as the case of students do not keep track of things which significantly component plagiarism so they don't consider it as a problem. Although students have a sound understanding of plagiarism's definition, their knowledge of actions forming plagiarism is also diversified. Walker (1998) said that some forms of plagiarism may merely stem from lack of awareness of academic conventions or simple carelessness on the part of the student. Share Walker's views, Harris, R. (2002) claimed that there may be a similar lack of awareness about the significance of the offence and likely penalties. Many other students know what plagiarism is, but don't consider it wrong. The belief that "information wants to be free" and the idea that copying from sources with a few words of one's own is merely "patch writing" a normal way to write, support these students in their beliefs. Dawson and Overfield (2006) determined that students were aware that plagiarism is bad but they were not clear of what constitutes plagiarism and how to avoid it. Students required that teachers should also observe the rules to avoid plagiarism and they should be consistently reminded of awareness about plagiarism to enforce the university resolve to control this academic sin.

### *Personal attitudes*

Most of previous studies had shown that if students don't seriously attempt and be willing to complete assignments, they will choose cheating or plagiarising for certain. Plagiarism rate is directly proportional to the hardness' rate of assignment. They are not compassionate to work or learn, they fear large amount of tasks which are need to do. Thomas and Znaniecki (1918-1920) - the first people using attitude's definition - claimed that "attitude is individually mental state towards a value". There are two forms of personal attitude: positive and negative. According to Ashworth et al (1997) another reason was revealed by students is that lectures' neutral towards plagiarist, they are also aware of plagiarism as a small problem.

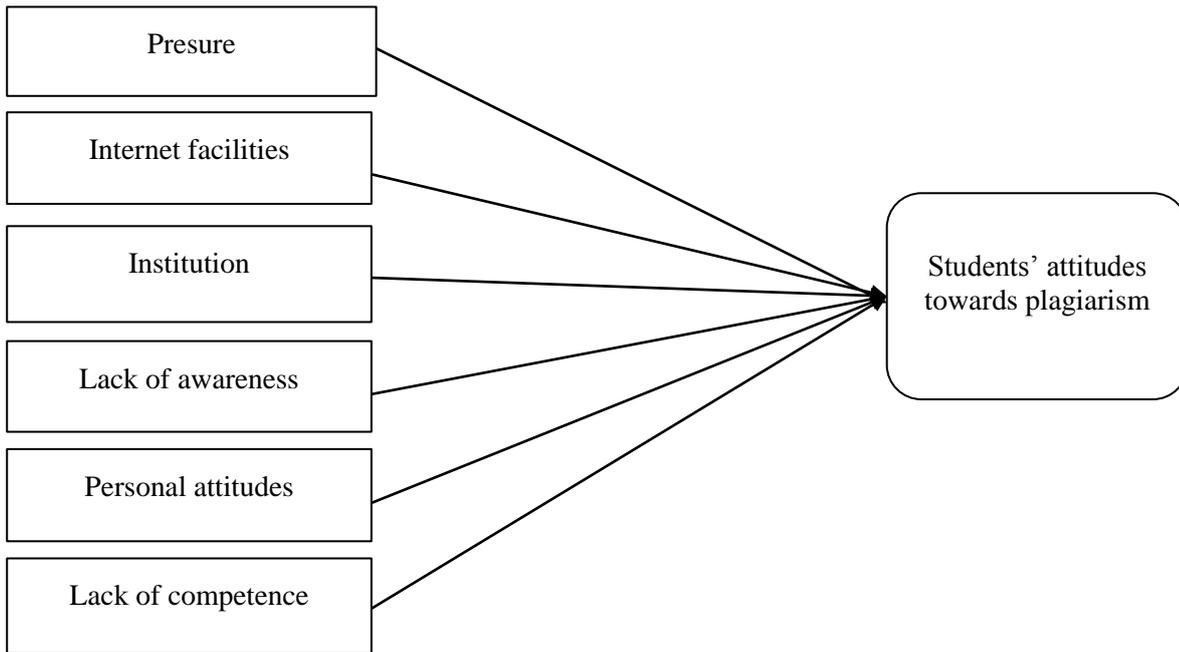
### *Lack of competence*

There are some studies had shown that study and teaching method also have parts in factors that influence on plagiarism. Sterngold (2004) argued that normal teaching methods have suggested and led to plagiarism behaviour. He also claimed that most of students have poor research and writing skills. Nearly all have no idea how to evaluate source's quality and suitability or collect and integrate data from numerous sources but they are unable to use it to write themselves' in a clear and logical way. They also do not know how to support their own ideas by proofs and arguments.

### *Proposed model*

The model as proffered by Smith et al. (2007) explained the impact of six factors which include pressure, internet facilities, institutions, lack of awareness, personal attitudes and lack of competence on the students' attitudes towards plagiarism. We used Smith et al.'s model (2007) as our original model for our study. In addition to proposing the direct impact of six factors on students' attitudes plagiarism. (Figure 1)

**Figure 1: Proposed model**



*Source: Smith et al. (2007)*

### *Hypotheses*

Hypothesis 1 (H1): Pressure has a negative impact on students' attitudes towards plagiarism.

Hypothesis 2 (H2): Internet facilities have a negative impact on students' attitudes towards plagiarism.

Hypothesis 3 (H3): Institution have a negative impact on students' attitudes towards plagiarism.

Hypothesis 4 (H4): Lack of awareness has a negative impact on students' attitudes towards plagiarism.

Hypothesis 5 (H5): Personal attitudes have a negative impact on students' attitudes towards plagiarism.

Hypothesis 6 (H6): Lack of competence has a negative impact on students' attitudes towards plagiarism.

### **3. Method**

#### *Research instruments*

Our study used the Likert scale of 5 points from 1 - “absolutely not agree” to point 5 - “absolutely agree” for both dependent and independent variables based on the scale listed in Table 1.

**Table1: Variables**

<b>Factor</b>	<b>Observed variables</b>	<b>Description</b>	<b>References</b>
1. Pressure	PR1 PR2 PR3 PR4	I have limited time to finish work I feel pressure to complete too many assignments during a given time period I have too many subjects in one particular semester I feel pressure from peers	Applied scale adjustments of Smith et al. (2007) and Husain et al. (2017)
2. Internet facilities	IF1 IF2 IF3	I think that cutting and pasting from the internet and word processing is much easier and faster I find it is easy to download articles from websites I find that there is too much information available in electronic format especially from websites.	Applied scale adjustments of Smith et al. (2007)
3. Institution	IN1 IN2 IN3 IN4	I do not know the legal implication of plagiarism Lectures do not care about plagiarism, they are too busy so usually do not response to develop my writing. Normal lecture method does not make me acquire new knowledge that leads to plagiarism. Universities do not have a clear policy on academic misconduct behaviours.	Applied scale adjustments of Smith et al. (2007); Amiri and Razmjoo (2016) and Husain et al. (2017)
4. Lack of awareness	LA1 LA2 LA3 LA4	I do not understand what constitutes plagiarism I do not see plagiarism as a problem I was not aware of plagiarism when in high school. I was not aware of serious level of plagiarism	Applied scale adjustments of Smith et al. (2007) and Madray (2007)
5. Personal attitudes	PA1 PA2 PA3 PA4	I do not have the desire to work or learn I do not feel the need for knowledge in the future I am not interested in the topic I am lazy and used to delaying work	Applied scale adjustments of Smith et al. (2007)
6. Lack of competence	LC1 LC2 LC3	I do not have the confidence to prepare a good assignment I have poor research skills I have difficulty in studying about subjects	Applied scale adjustments of Smith et al. (2007)
7. Attitudes towards plagiarism	ATP1 ATP2 ATP3	Sometimes I feel tempted to plagiarise I know what plagiarism is. Plagiarism is as bad as stealing an exam.	Applied scale adjustments of Ehrich et al (2015)

Factor	Observed variables	Description	References
	ATP4	Using others' work with their permission is ok	
	ATP5	Plagiarism is ok if the Professor gives you too much work	
	ATP6	Punishment for plagiarism should be light	
	ATP7	Downloaded papers and using as one's own should mean expulsion from university	
	ATP8	Plagiarism is against my ethical values	
	ATP9	Plagiarism involves taking others' words, not property, so it's no big deal	
	ATP10	You can't plagiarise yourself	
	ATP11	If I lend a paper to a student to look at who plagiarises, I should not be punished also	
	ATP12	Plagiarists should receive a special grade for cheating, which would deter them	

#### *Sample and Data collection*

Because our study seeks to explore what factors and how these factors affects students' attitudes towards plagiarism, we use a sample of some universities in Vietnam: National Economics University, Hanoi University of Science and Technology, University of Labor and Social Affairs, Hanoi Medical University, Hanoi University of Industry, Trade Union University, Thuyloi University. These universities' students are highly representative for economic and technological students in Ha Noi. To achieve the objective of the study, we conducted the survey by sending questionnaires to students from the above selected universities in Ha Noi. We received 871 replies and used 845 qualified answers in the analysis. We analyzed the data using SPSS software version 20.0 with the following specific steps:

Firstly: Do statistics describing the observable variables of the scale.

Secondly: Assess the reliability of the scale.

Thirdly: Verify the value of the scale by means of exploratory factor analysis - EFA.

Fourthly: Analyze correlation and multiple regression.

#### **4. Result**

##### *Cronbach's Alpha*

The "Pressure" independent variable has a coefficient of Cronbach's Alpha of 0.614, ranging from 0.6 to 0.8, so that the scales are linked together and it is an usable measurement scale. However, the fourth observation variable was rejected due to inadequate requirements that the total variable correlation coefficient is 0,299 (less than 0.3).

The independent variable "Attitudes towards plagiarism" has a Cronbach's Alpha coefficient greater than 0.6, so the scale can be used relatively well. However, after five times, there are five observation variables have a total correlation coefficient of less than

0.3 are eliminated. They are ATP2, ATP3, ATP7, ATP8, ATP12 with the total variable correlation coefficients in turn are 0.159, 0.211, 0.226, 0.182, 0.283.

Other independent variables all have coefficients of Cronbach's Alpha more than 0.8. So, this is a relatively good scale.

After eliminating inappropriate observational variables, we conducted a test to check reliability again. The values of the Cronbach's Alpha coefficient showed that the scales were good, reasonable and consistent. The results are shown in Table 2.

**Table 2: Reliability**

<b>Variables</b>	<b>Cronbach's alpha</b>	<b>Number of variables</b>
Pressure	0,615	3
Lack of awareness	0,706	4
Internet facilities	0,771	3
Personal attitudes	0,702	4
Lack of competence	0,747	3
Institution	0,736	4
Attitudes towards plagiarism	0, 698	7

Thus, the results of evaluating reliability of the scale by scale by Cronbach's Alpha indicated that the scale is reliable and can be used in future analysis.

*Exploratory factor analysis (EFA)*

To eliminate scales that are not sufficiently reliable, retaining high adhesion scales, can be grouped into factors that accurately reflect the variables measured in the model, we conducted exploratory factor analysis. Factor analysis is conducted once. Scales' reliability is quite high, no observed variables are excluded and independent variable groups, dependent variable groups remain unchanged. Independent variables include pressure, internet facilities, institution, lack of awareness, personal attitudes, lack of competence. Dependent variable is attitudes towards plagiarism.

**Table 3. Exploratory factors analysis - EFA**

<b>KMO</b>		<b>P- value</b>	<b>Average Variance Extracted</b>	<b>Factor Loading</b>	<b>Conclusion</b>
Independent Variables	0.800	.000	59.939	0.800	Qualified
Dependent Variables	0.772	.000	51.958	0.772	Qualified

Table 3 shows that the KMO coefficients are greater than 0.5, indicating that factor analysis is appropriate. Bartlett's test is statistically significant at the 5% significance level, indicating that the observed variables are correlated in magnitude. When analyzing the

EFA factor for independent variables, all the factor load of the observed variables satisfies the condition (factor load > 0.5) and the number of factors created is coincide with the number of factor we had in the beginning. They are "Pressure", "Internet facilities", "Institution", "Lack of awareness", "Personal attitudes", "Lack of competence". Table 3 also shows that the cumulative of variance is 59.939% (greater than 50%), it means there are 59.939% changes in attitudes towards plagiarism explained by the observed variables. When analyzing dependent variables, the factor load of all observed variable satisfies the condition that the factor load is greater than 0.5. To sum up, after using the EFA exploratory factor analysis, the results show all factors have all the same observation variables that load a factor. Therefore, the scales selected for the variables in the model are guaranteed to be required, capable of better interpretation and analysis.

*Correlation analysis*

From the results of Cronbach’s Alpha, the independent variable of model is adjusted.

Y: Attitudes towards plagiarism (disregard ATP2, ATP3, ATP7, ATP8, ATP12)

We used Pearson correlation coefficient to evaluate the correlation between variables in the model (the results of correlation analysis of variables in the model are presented in Table 4). The results showed that the correlation coefficient (r) has a value of  $r > 0$ , indicating that the variables are positively correlated.

**Table 4: Mean, standard deviation and correlation coefficient**

Variables	Mean	SD	ATP	PR	LA	IF	PA	LC	IN
ATP	2.87	0.67	1	0.136	0.371	0.136	0.249	0.254	0.349
PR	3.29	0.69		1	0.159	0.280	0.134	0.174	0.138
LA	2.75	0.73			1	0.179	0.242	0.352	0.326
IF	3.65	0.75				1	0.006	0.222	0.215
PA	2.21	0.71					1	0.285	0.276
LC	3.06	0.72						1	0.256
IN	3.00	0.73							1

The “Attitudes towards plagiarism” variable is strongly correlated with the “Lack of awareness” variable and the “Institution” variable, and the coefficients are 0.371 and 0.349 respectively. The correlation coefficients of the “Pressure” variable and the variable “Internet facilities” was 0.280, respectively, therefore the “Pressure” variable quitey correlated with “Internet facilities”. The correlation between the “Lack of awareness” variable and the two variables “Lack of competence” and “Institution” are 0.352 and 0.326, so these two variables are closely related to “Lack of awareness”. Correlation coefficient between the “Personal attitudes” variable and the “Lack of competence” variable is 0.285, so the two variables have a relatively correlation. Thus, most of the independent variables in each model are quite close correlated.

*Regression analysis and hypothesis testing*

Six factors (pressure, internet facilities, institution, lack of awareness, personal attitudes, lack of competence) influencing on students' attitudes towards plagiarism

**Table 5: Regression between six above factors and students' attitudes towards plagiarism**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1. Constant	1.067	.151		7.084	.000		
Pressure	.035	.032	.036	1.098	.272	.894	1.119
Lack of awareness	.219	.031	.240	7.028	.000	.799	1.252
Internet facilities	.018	.030	.021	.620	.535	.854	1.171
Personal attitudes	.100	.031	.106	3.185	.002	.847	1.180
Lack of competence	.069	.032	.074	2.164	.031	.796	1.256
Institution	.194	.031	.213	6.301	.000	.818	1.223

a. Dependent Variable: Students' attitudes towards plagiarism

According to table 5, the results of the regression analysis showed that there are two factors including "Pressure" and "Internet facilities" have sig values are 0.272 and 0.535 (more than 0.05) so these factors do not influence on students' attitudes towards plagiarism. We can conclude that the hypotheses H1 and H2 were rejected. Statistical results of the regression analysis on the standardized  $\beta$  coefficient resulted that "Lack of awareness", "Personal attitudes", "Lack of competence" and "Insitution" all have sig values less than 0.05. That means these four factors have impact on dependent variable so the hypotheses H3, H4, H5, H6 were improved. Thus, the factor that has the greatest impact on students' attitudes towards plagiarism is the factor "Lack of awareness". Then the second factor's impact is "Insitution". The weaker impact factors is the "Personal attitudes" and the "Lack of competence".

From the above result, there is regression model:

$$TD = 0.24*LA + 0.106*PA + 0.074*PA + 0.213*IN$$

#### 4. Discussion and Conclusion

Misconduct in academic environment, specifically plagiarism behaviour of students is a serious problem which education has to face. To reduce and prevent this behavior, we need to understand students' attitudes towards it and what factors have impact on plagiarism. It is also this study's aim. To find the answer, we carry out by quantitative research.

A number of these variables contributed to the factors previously identified by Smith, Ghazali and Fatimah (2007) (i.e. institution, personal attitudes, lack of awareness). The same point between their result and ours is both found that there is no evidence showed a significant link between students' attitudes towards plagiarism and "pressure" (H1), internet facilities (H2). However, while Smith et al's study indicated "Lack of competence" factor had not impact on dependent variable, our study's result is opposite. Specifically, the results indicate that pressure and internet facilities have no impact on student's attitudes towards plagiarism. There are four factors including institution, lack of awareness, personal attitudes and lack of competence influence on this attitudes.

In conclusion, one of the first steps towards preventing plagiarism lies in raising awareness as to its nature and its significance. The education program should provide promulgate a official plagiarism's definition and concrete examples for making students have full knowledge about plagiarism. Moreover, understanding citation and reference law may be helpful in decreasing plagiarism. Also to improve students' attitudes towards plagiarism there must be measure to tighten the educational institution. There must be clear rules which are relevant to academic misconduct behaviours and deserved punishments. Besides, ameliorating students' competence and personal attitudes is necessary. Courses in dealing with limited competence skills of students such as: analyzing, criticizing, writing and paraphrasing) should be extended.

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# ACCESSING BASIC EDUCATION SERVICE FOR DISADVANTAGED GROUPS: RESEARCH ON THE CHILDREN WITH DISABILITIES IN HANOI

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## **Abstract**

*The education is a social service for human beings and it is seen as a fundamental human right. However, for the disadvantaged groups in society, include children with disabilities, the accessing education services (whether public or private) is a significant challenge. This article addresses the difficulties faced by children with disabilities in accessing basic education services and the satisfaction of children and their caregivers about the educational services they received. The results of this study suggest a number of solutions to promote learning motivation for this children group. The identification of accessibility constraints for children with disabilities and their caregivers is examined by the open-questionnaire (Likert scale) for children that have enrolled in the education system. The results also show that some of the difficulties identified when the children accessing education services are such as: the supports from school (including: the attitudes of manager, teachers and classmates), the costs for education, the curriculum and timetable of the school, the level of awareness of the child with disabilities.*

**Key words:** *Basic Education Service, Children with Disabilities, Hanoi*

## **1. Introduction**

Social services are a range of public services provided by the government, private, and non-profit organizations. These public services aim to create more effective organizations, build stronger communities, and promote equality and opportunity. Social services include the benefits and facilities such as education, food subsidies, health care, police, fire service, job training and subsidized housing, adoption, community management, policy research, and lobbying.

Universal Declaration of Human Rights 1948 of the United Nations in Article 26 states: “Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit”

Although education is a form of social service, the learners are not considered as clients in Vietnam. It is clear that the quality and effectiveness of education services haven't meet the legitimate needs of the people as well as the development requirements of society, specially the education for children with disabilities

According to the Population Information and Data Center in 2010, there are an estimated 5.1 million people with disabilities in Viet Nam, accounting for 6% of the population, including 1.1 million people with severe disabilities (21.5% of the total number of people with disabilities). The incidence of mobility impairments was 29%, mental disability - 17%, visual impairment - 14%, hearing impairment - 9%, language impairment - 7%, intellectual disability - 7% and 17% of other forms of disability. This is a group of population that could become a hindrance to social development if the government doesn't have appropriate social policies, especially educational policies. According to a report by the Ministry of Labor, War Invalids and Social Welfare, Vietnam has about 1.4 million children with special circumstances, including children with disabilities. While progress has been made in policies related to children and disability, the focus is often on adults whose needs differ from those of children. For children with disabilities, some of them have to learn in specialized schools or lives in government social protection centers. A large number of them are enrolled in public schools with normal children (This type is known by another name, inclusive education). Reality, this group of children is tending to increase in the community for a few recently years. Although the Government and Ministry of Education and Training have made significant efforts in promoting policies and programs to support inclusive education for children with disabilities, however, from the perspective of the children themselves to integrate, as well as their family has many obstacles. Specifically, little is known about the educational services these children are receiving. What is the prevalence of children with disabilities? How many attend regular classes and how many attend special education classes? For what kind of conditions do they need special services? What percentages are receiving the educational services they need? What are the perceived barriers to obtaining these services?

Reliable, comprehensive data about children with disabilities and their families are needed to highlight the extent of their needs in order to better understand and support appropriate decisions and actions. In this article, we offer the barriers that the children with disabilities met when they attend inclusive education in public schools.

*Inclusive education* is a contentious term that lacks a tight conceptual focus, which may contribute to some misconception and confused practice. In relation to students with disability, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) first stated in 1994 that inclusive schools were the most effective way to counter discriminatory approaches and attitudes towards students. According to UNESCO (2009) "... an 'inclusive' education system can only be created if ordinary schools become more inclusive – in other words, if they become better at educating all children in their communities (p. 8)". Article 24 of the UN Convention of the Rights of Persons with Disabilities recognises that education should be accessible "... without discrimination and

on the basis of equal opportunity... within an inclusive education system at all levels...". It is widely acknowledged, nonetheless, that children with disability continue to experience different forms of exclusion which vary depending upon their disability, domicile, and the culture or class to which they belong (UNICEF, 2013). Inclusion in education is recognised as a basic human right and the foundation for a more just and equal society (European Agency for Development in Special Needs Education, 2012).

Many research have established the role of inclusive education in the learning outcomes of students with disabilities (Larry G Daniel, Debra A. King, Mark A. Lamport et al; Evins, Allison E). When included in the regular classroom, the children with disabilities who are special needs students have the opportunity to see their peers working habits, and they can model those habits and behaviors to reflect their own. This insight ties into the Freudian theory of identification through observation of learned behavior from the peers around them. Students with special needs can learn not only desired behaviors from their peers through social interaction, they can also learn academically within their learning community. Children can be the best teachers. Cooperative learning involves social interaction amongst the students, and it is the key to educational thinkers such as Piaget and Vygotsky (Slavin, 2009).

The literature also show the factors that influence the effectiveness of inclusive learning. For example, teacher's prepare; Teacher's perspective, the social attitude, the peer students,... (Mark A. Lamport et al, 2012). Wagner, et al. (2006) reported that general educators believe that they are not trained to effectively manage the challenging behaviors of disability students, therefore making them apprehensive about having these students in their classes. Furthermore, Sawka and colleagues research has found that there continues to be high turnover rates for teachers of disability students; therefore leaving the students with disability at greater risk of poor academic outcomes and constantly having to adjust to new teachers Sawka et al. (2002) in their study found that response cost was one intervention to decrease negative behavior and encourage positive behavior in students with disability.

In Vietnam, since the early 1990s, the Government of Vietnam has developed policies to ensure that children with disabilities have access to education. This issue is addressed in the National Plan "Inclusive Education to 2015" with the goal of providing inclusive education for all children with disabilities by 2015. To address international and regional commitments As well as achieving the goal of inclusive education, Vietnam has built a solid legal framework at many levels. Ensuring equal rights and access to education for children with disabilities is reflected in many legal documents of Vietnam such as the first Constitution of the Democratic Republic of Vietnam in 1946; The constitutions of 1959, 1980 and 1992 all regulate the protection of civil rights, prohibiting all discrimination and abuse. In addition, the Laws have separate regulations for each chapter, item or some things reserved for people with disabilities in terms of policies, solutions and help and care. Vietnam also has a legal document system that deals with the rights of children with disabilities and access to education.

In fact, more than 10 years of inclusive education in Vietnam and world-wide educational experiences have proven to be very effective for children with disabilities: Eliminate complex emotions, increase communication, develop independence and learn more (ĐàoThị Vân Anh, 2005). With inclusive education, children with disabilities are learning in a normal environment, the school are near by home. There is no separation from them to their parents, brother or sister in their family. Students with disabilities learn the same program with the age-group others. The curriculum and teaching methods will be adjusted to suit the needs and abilities of the students. It will stimulate the interest in learning and developing the ability of these students. However, Dao Thi Van Anh (2005) shown that the difficulties when practicing inclusive education. Some of them are (1) Some management and teachers are not fully aware of the importance and long-term benefits for children with disabilities when they attend in the inclusive class; (2) Children with disabilities often have differences behavior which are not be understand and share by teachers and classmates; (3) Very few teachers are teaching inclusive class that have been trained in inclusive education.

## **2. Method**

This study used three methodologies: a desk study of the official policy documents on education for children with disabilities; A surveys of the children with disabilities and their caregivers; and An in-depth interviews with the experts on inclusived education. In total, 8 teachers (include specialized teachers and regular ones) and educational managers from the inclusive school (covering three districts in Hanoi: Ha Dong, Thanh Xuan, Hai Ba Trung) have been interviewed, using semi-structured questionnaires. These interviews, combined with a survey with disability children and their caregivers (i.e. father, mother, or grandparents), were conducted from September, 2016 to January, 2017.

To get a further and more quantitative insight into the implementation inclusive education for children with disabilities, a survey were conducted in Ha Dong, Hai Ba Trung and Thanh Xuan districts. This survey covered 15 randomly selected the children and their caregivers in some iclusive schools. The second survey was conducted online. 150 questionnaires were sent via email, and 68 responses have just been received. Finally, 47 responses by online and 15 answerer face to face from the first survey were used to analyze the results of the survey. All the questions are using 5 Scales Likert Type (5= fully agree; 1= fully disagree).

## **3. Results and discussion**

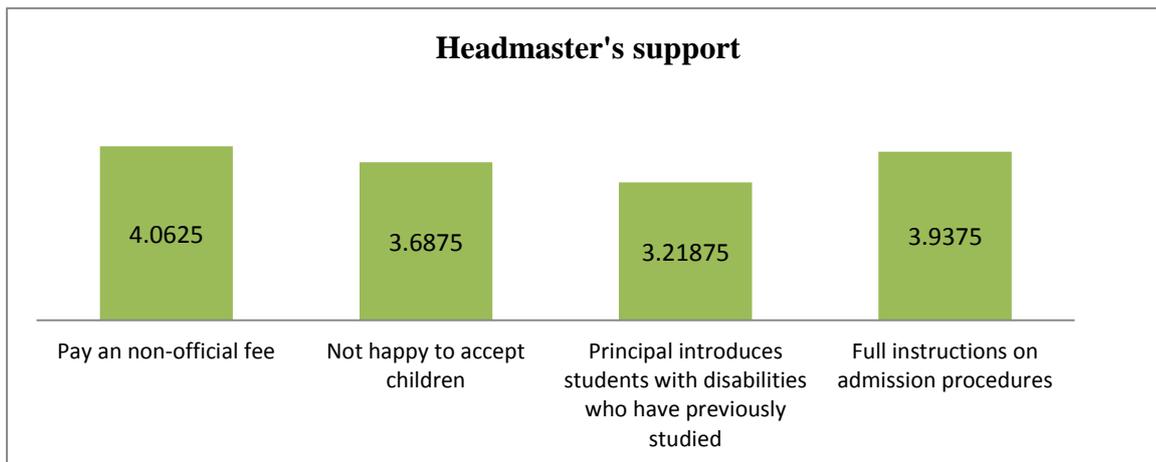
When children with disabilities begin to participate in inclusive education, the inclusive school are the first place that a child and her family will interacts. The support of components from inclusive schools (such as teachers, managers, classmates) will impact school choice and academic success of children with disabilities as they learn with non-disability children. In addition, the material condition of school also affects the integration of children.

### *The headmaster's support*

The support of the principal is the first factor affecting the success of children with disabilities when they attend integration schools. The headmaster have not only a good

awareness about inclusive education but also have a thorough understanding of the implementation process in this field. He have to knows how to incorporate the components of the school into supporting the child with a disability.

Students with special needs must receive regular support in the classroom and from professionals in disabilities. Hence, the inclusive learning of disability children will be successful if the school managers (i.e. principal) have flexible plans, diverse learning styles and rich funding sources. The headmaster must supervise all activities, promote positive attiatude in the school. The principal is the man who organize coordinated activities between teachers and parents, teachers and another ones (Đào Thị Vân Anh, 2005).



**Figure 1. The headmaster’s support for the inclusive learning**

*(Source: 2016 Survey Results)*

Our survey in 2016, found that many families of children with disabilities had to pay an unofficial fee for being admitted to the school. This is an obstacle for children with disabilities to access educational services (The median of this item's responses are quite high).A Unofficial fees increase the cost of studing for children with disabilities in school. In addition, school principals are not happy when they agree to let children with disabilities attend their school. Children with disabilities often have different behaviors, which can sometimes be dangerous for their peers or for themselves. These threat can explain to the afraid attitude of school principal. Through the evidences from previous students, the principals have a warning about the threat that the children with disabilities can meet at school. The admission procedures are full instruction and public.

#### *The teacher’s support*

Oliver and Reschly (2010) provide information on teacher organization and reparation in the classroom. The article states that special education teachers as well as general education teachers are not adequately prepared to manage students with behavior disorders in the classroom. Students with Emotional and Behavioral Disorders (EBD) or Severely Emotional Disorders (SED) have behaviors that inhibit them academically as well as socially. The EBD student oftentimes cannot or does not know how to control these “acting out” behaviors. Moreover, they are frequently too disruptive in the general

education classroom and must be separated from their peers. Conversely, the law states that students with disabilities must be educated in the same classrooms as their nondisabled peers (Circular 39). The teachers were not trained to provide accommodations or modifications to adhere to this mandate. Students were mainstreamed, even though few teachers were adequately trained in an academic setting to provide for the needs of students with disabilities.

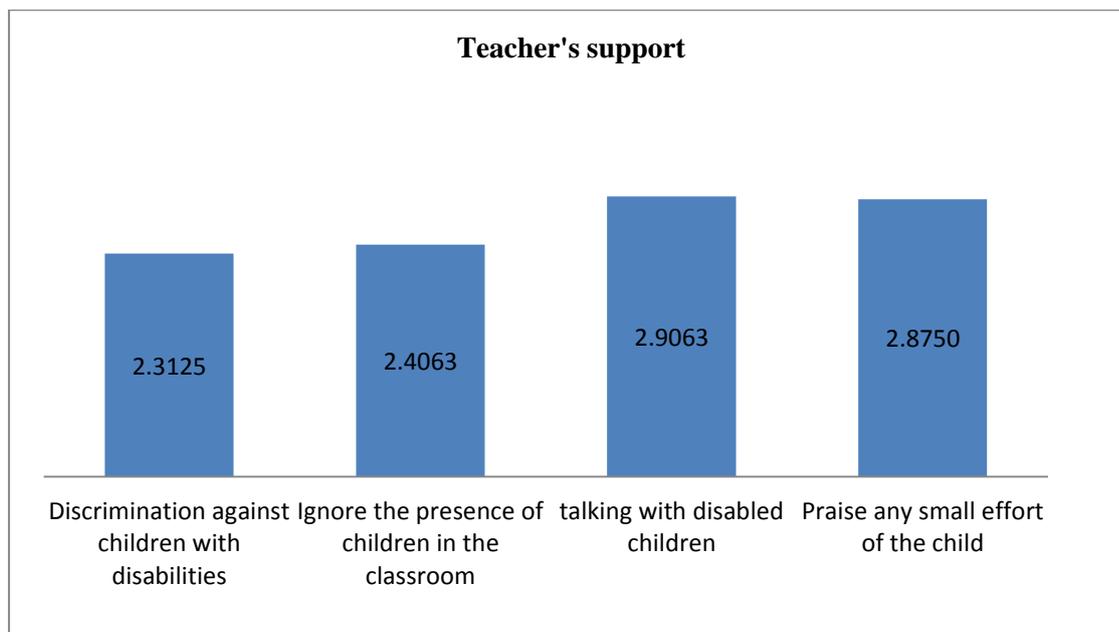
Le Tien Thanh, 2011, shows that on average, nearly 800 teachers are officially trained in inclusive education for children with disabilities at pedagogic schools. Over 20,000 preschool, elementary and junior high school teachers are provided with knowledge and skills to teach children with disabilities. Many researchers, managers, and teachers receive special education in developing countries around the world. It is forecasted that in the coming years, the number of schools and teachers for children with disabilities will increase further as the number of children with developmental disorders is increasing. At the same time, there are more children with developmental disorders in Vietnam today (such as autism spectrum disorders, other mental disorders). According to data from the Department of Rehabilitation (National Hospital for Paediatrics), in 2000 the number of autistic children increased by 122% compared to the previous year and in 2007 the number of children with autism increased to 268%.

**Table 1. Statistics and forecasts for the number of schools, children and special education teachers in preschool schools up to 2020**

No	Year	Schoos	Children		Teacher	
			General	Disability (7.64%)	General	Special teacher (2.91%)
1	2010-2011	12.908	3.599.663	124.908	211.225	38.724
2	2011-2012	13.172	3.873.445	134.409	229.724	39.516
3	2012-2013	13.548	4.148.356	143.948	244.478	40.644
4	2013-2014	13.942	4.465.290	154.946	251.592	43.749
5	2014-2015	14.348	4.806.439	166.783	258.914	47.092
6	2016-2018	15.637	5.994.383	208.005	282.181	58.731
7	2019-2020	16.561	6.945.313	241.002	298.843	68.048

(Source: [3],[4])

The teachers directly manage inclusive teaching, so they clearly understand the needs and abilities of each child with disabilities in order to develop a appropriate educational goal for each child. When tracking the development of each child with disabilities, teachers can adjust their goals, content and teaching methods more appropriately. The teacher is also a person who directly coordinates the families of children with disabilities to community members in order to implement the objective of inclusive education well. In the classroom, teachers design relationships between students with disabilities and their peer by teams and groups pupils in oder to create a friendly environment in which both students are encouraged to develope.



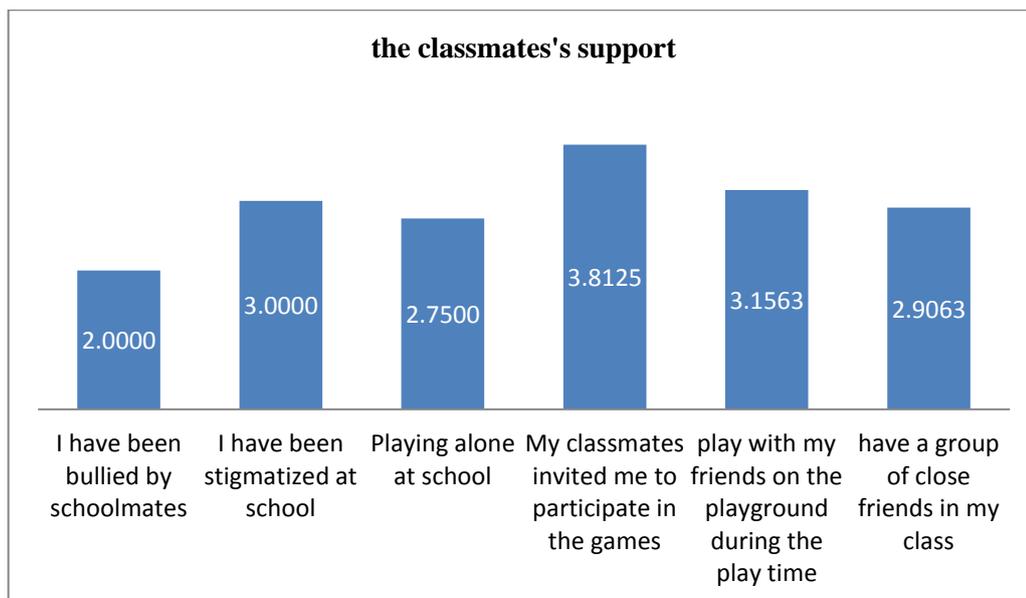
**Figure 1. The teacher's support for the inclusive students**

*(Source: 2016 Survey Results)*

Although survey results show that discrimination isn't significant, but the student with disabilities didn't receive the interest from their teachers. The teacher rarely praise small effort of the child. If the teacher didn't ignore the children's presence in classroom then their learning outcomes had been assessed same as other students without disabilities. Some teachers said that they let the students with disabilities sitting in class in order to comply with the support policy of the State. In fact, the learning of these children was not the teacher's interest. In some case, these children could do anything they want and did not learn anything in class. This situation is not real good for the children with disabilities. These students also didn't improve their abilities when they enrolled the public educational services.

#### *The classmate's support*

The most important goal of inclusive education is to allow children with disabilities go with their peer friendship and integrate with community. Thus, student groups in schools play an important role in supporting students with disabilities. The support of the peer students in classroom or in school is not only reflected by their support of the disability children's awareness, but also be reflected by the eating activities and collective activities in school. Survey results show that just a few children with disabilities have a group of closed friends in the classroom (18.8%). Some children have difficulties in making friendship, especially who with language disorders, autism,... Some of them played alone (15.6%). Many children have been discriminated against by classmates (43.75%). The disability students have many difficulties in language or in communication. Hence, they need the friendly inclusive environment in which the peer students must feel familiar with their differences. Therefore, the classmates will help the student with disabilities better.



**Figure 1.** The classmates' support for the inclusive students (*Source: 2016 Survey Results*)

In recent years, the Vietnam Ministry of Education and government agencies have made a great effort in communicating awareness of supporting for children with disabilities in school. This has effected on the attitude of non - disabilities students in classes where children with disabilities attended. The issues that related to stigma and ridiculing of children with disabilities have decreased significantly. Nowaday, the peer student are more open with disability ones. They could play together in school. However, the children who get disorders have feel difficult to take part the game with their peer. Many of them often play alone in school. Some of them have been stigmatized at school (3,0).

#### *The policy support of government*

The curriculum at public schools is now unified over the country. It is managed by the Ministry of Education and Training. At non-public schools, although the content is a bit different, the curriculum still has to follow the Ministry of Education framework. Studying the same curriculum with peers in the inclusive school is both an opportunity for children with disabilities to ensure their right of education and at the same time puts pressure on them, especially children with mental disorders. A fulltime studying at school also creates great pressure for children with disabilities, especially those with attention deficit hyperactivity disorder (ADHD) and autism. Most of their parents are eager to have a more flexible learning schedule for these children.

The Vietnam Government has made great efforts to reduce the barriers for people with disabilities to integrate into the community. Vietnam has signed the Convention on the Rights of Persons with Disabilities. Viet Nam committed to implement seven priority field in the "Biwako Millennium Action Framework towards an inclusive, non-obstructive society for the rights of persons with disabilities," in the Asia-Pacific region. The National Plan of Action for national education, 2003-2015, made the opportunities for all people to equal access to quality education, especial for all children. The legal systems that deal with people with disabilities include: the Constitution of Vietnam; Ordinance on Persons with

Disabilities 1998; Educational Law 2005; Disability Law 2010,... All of them are completed and publicated.

The Ministry of Education and Training also issued Decision No. 23/2006 / QD-BGDDT on Inclusive Education for People with Disabilities; Circular No. 39/2009/TT-BGDDT on inclusive education for disadvantaged children; Education Plan for Children with Disabilities 2007-2010 and Vision 2015. The State has a policy of policy on social allowance and tuition fee exemption, reduction fee for people with disabilities who haven't dot enough money. There is no discrimination against persons with disabilities in admission to schools just by their disabilities. People with disabilities are provided with the tools and materials to support their learning appropriatly (Nguyen Van Nam, 2015).

*The support from children themselves and their family*

This section adressed the support factors belong to childrend and their families, such as the level of disability; the ability of children with disabilities; the ability to pay for the educational cost of the child's family; Awareness of families on inclusive education for children with disabilities

*The capacity of children with disabilities.* The capacity is specific ability of an entity (person or organization) or resource that meets the requirements of a particular activity. The capacity is the condition for achieving that outcome. Each activity requires a kind of capacity appropriatly and these capacities are closely related. In general, there are 8 types of capacities: Communication / Language, Logic and Mathematical Thinking, Image, Painting, Space, Music, Inner, Interactive, Social, sport, natural sciences. For children with disabilities, the capacity is special abilities, some of them may have some outstanding ability. In inclusive education, researchers focus on the classification of abilities that are needed for a child with a disability to learn well in a typical school. Depending on the level of disability they may exhibit differently, such as language/communication ability, cognitive ability, social relationships. According to our survey, most children with disabilities (from median to severe level) can not enrolled in inclusive education system (either public or private).

*The ability to pay for the educational cost of the child's family.* The ability to pay for costs when children with disabilities participate in social services also affects the success of children. According to our survey, 2016, more than 60% of children are enrolled in public elementary schools while attending classes that supplement cognitive, social and communication skills at special school. This shows that the families of children with disabilities have to pay the same education fees as other children and pay for the costs of learning other skills too in order to keep up with their classmates. These costs have made the total cost of education for each child much higher than for children without disabilities, accounting for 20-30% of total household income.

*Awareness of the children families.* The families' awareness of inclusive education for children with disabilities get an important role in accessing children's educational services. When the child's family aware correctly and gets a positive attitude towards

inclusive education, they will be ready to find any solution for their children's access to educational services. On the other hand, if the families are poorly aware of inclusive education, they may not be able to properly assess the role of inclusive education (which they may consider unnecessary or impossible). Therefore, children do not have access to educational services or children are accepted into the school but do not have the desired results. Most families with disability children now expect their children have access to social services, especially educational services. According to the 2016 survey, this expectation does not depend on the parents' educational background. Even though the parents have low education, they still want their children to have access to educational services like as other children without disabilities.

#### **4. Conclusion**

The previous researchs and our survey results shown that: the barriers to accessing educational services for children with disabilities are not just derived from the disabilities themselves. They are influenced by external factors such as the attitude of educational manager, teachers, and the school community. Although inclusion methods benefit all students, both of principals and teachers are still hesitant to volunteer to teach within this specific method. The study has shown that the children with disabilities have a lot of difficulties to access educational services.

It is necessary that students with severe emotional and behavioral disorders in inclusive classrooms learn to effectively manage negative behaviors so that classrooms are environments of learning for all students. For inclusion to be successful, it is important to provide educators with training, planning time with their co-teacher, and adequate resources to meet the needs of students. It is when teachers are fully prepared that the inclusion model will yield positive results. In inclusive classes, both disabled and non-disabled students view co-teaching in a positive manner and seem to make progress in academic classes. So, the support from the peer students also could effected significant to disability students. These factors, along with supporting policies from the State, could lead to the success of children with disabilities in accessing education services. It is the reason of the effort to reduce the difficulties in their inclusive learning. Beside, some difficulties that come from external environment were identified in this research: the costs for education, the curriculum and timetable of the school, the level of awareness of the child with disabilities.

Nowadays, the number of children with disabilities that participate in the education system is increasing. Future researchs may focus on finding solutions to reduce barriers that have been identified in this study. Another future research direction is to build educational models that have a balance between knowledge and skills. In this new educational model, the researchers should be focus the social skills that to be practiced for students with disabilities. Unless children with disabilities are trained in appropriate skills, they will not be able to become real workers when they are adults. It can even become a heavy burden for society.

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# THE CO-OPERATIVE EDUCATION EFFECTIVENESS IN THAILAND

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## **Abstract**

*The objectives of the research were to 1) investigate the procedures of co-operative education employed in higher education institutions in Thailand, 2) analyze the influential factors affecting the effectiveness of co-operative education of higher education institutions in Thailand. It was qualitative research. Data were collected through documentary research, in-depth interview, and non-participant observation. The total of 40 samples was divided into two groups. The first group of the samples comprised university administrators, co-operative education teachers as supervisors, and students. All were from three universities including Suranaree University of Technology, Walailak University, and Rajamangala University of Technology Thanyaburi. The second group of the samples consisted of administrators from business organizations, and staff acting as supervisors. All of them were from three companies including Western Digital (Thailand) Co. Ltd., Betagro Public Co., Ltd., and Microchip Technology (Thailand) Co. Ltd, (as they were partners joining in the co-operative education with the 3 universities listed above).*

*For the results of the study, the common procedures of co-operative education of the 3 universities was divided into 3 consecutive phases including 1) Pre-Co-operative Education, 2) While- Co-operative Education, 3) Post- Co-operative Education.*

*Regarding the influential factors analysis, the research discovered that the factors affecting the effectiveness of co-operative education consisted of financial factor, institutional factor, and leadership factor, whereas the political factor had no effect towards the effectiveness of the co-operative education.*

**Keywords:** Co-operative Education, Effectiveness, Higher Education Institutions

## **1. Introduction**

At the present time, Thailand is stepping into Thailand 4.0, a new model aimed at driving Thailand to achieve national prosperity, stability, and sustainability. The core concept is the development of Thai people to become “Perfectly Adjusted Human for the 21st century,” together with the transformation to become “Thai People 4.0 in the First World Classification,” which contains the following characteristics: 1) from being unskilled to highly skilled; 2) from being self-minded to being public minded; 3) from holding a Thai-Thai personality to a Global-Thai personality, which can support more

solid steps on the global stage; 4) from being Analog Thai to Digital Thai (Office of the Secretary of the House of Representatives, 2016: 17).

Apparently, education is a process of developing human living quality and condition. Not only does it bring happiness to living but also develops the country following global dynamic changes. According to the Constitution of the Kingdom of Thailand 2007, the essence of education has been defined in Section 49 with the description that every person shall enjoy equal rights to receive at least twelve years of comprehensive and quality education as provided by the state free of charge. Indigent, disabled or handicapped, or destitute persons shall enjoy equal rights under paragraph one and shall be supported by the state to receive education on an equal basis with other persons.

Practically speaking, from the past until the present, even though policy and the law have been enforced, there are still many obstacles in running a co-operative education program, resulting in the failure to accomplish goals. This failure can be seen from the empirical evidence regarding competitive capability ranks. In terms of education from 2012 to 2015, it was found that Thailand was ranked in the 31st place in the world, out of 144 countries, and 3rd place in ASEAN behind Singapore, which was in 2nd place; Malaysia was in the 20th place. When considering the education index in particular, the overall quality of fundamental education in Thailand was ranked in the 7th place in ASEAN (the 6th from the previous year), and the overall quality of the higher education was ranked in 8th place, even though its mathematics index and science index seemed to be a bit higher-in 5th place. When taking the analysis of the GDP rate into account, Thailand as the 3rd wealthiest country in ASEAN (GDP per capita), is still behind other poorer countries in terms of education. (Office of the Education Council, 2016: 69-72). The reasons above were the explicit grounds for inferring that Thailand is confronting a dilemma in terms of the quality of higher education. As a consequence, Thailand is struggling with human resource development, the quality development of graduates, and the cultivation of satisfactory characteristics of graduates that are aligned with the demands of employers.

According to the criticism raised by employers, higher education in Thailand is still unable to produce qualified graduates. To put it another way, the sources of the problems are unskilled laborers, no connection or relationship between business employers and the university, and no collaboration for sharing resources. This implies that the skills required of graduates are their knowledge, ability and professional skills, systematic planning skills, perspective-taking skills, decision-making and problem-solving skills, interpersonal skills, creative thinking skills, discipline skills, morals, ethics, communication skills, presentation skills, leadership skills, etc. Those skills can ultimately be cultivated from actual professional experience in the workforce.

Regarding the development of graduates, the emphasis is usually on integrated study (Work-integrated Learning: WIL). The main purpose of this learning approach is to develop graduates that meet the demands of the labor market and to provide a system for professional development. Since the focus is on professional training to produce skilled labor, the outputs as qualified graduates can be the mechanics to mobilize national economic growth, and to escalate the national development to a larger scale, respectively.

WIL consists of 9 attributes as follows: 1) pre-course experience, 2) sandwich courses, 3) cooperative education, 4) cognitive apprenticeship or job shadowing, 5) joint industry-university courses, 6) new trainee ship or apprenticeships, 7) placement or practicums, 8) fieldwork, and 9) post-course internships (Sumeth Yaemnun, 2004: 23).

Cooperative education is a form of WIL, where the instruction is conducted based on the cooperation between the institutes and business employers. The focus of the programs is on professional training of the workforce (Work Based Learning), where the students can integrate their knowledge from the classroom with their actual experience at the business sites. Professor Dr. Wichit Srisa-An coined the term “Co-operative Education” in Thai from the English translation. It refers to “education constructed under a collaborative partnership between the university and employer for educational development.” Suranaree University of Technology was the first university to establish co-operative education in Thailand. The co-operative education system gives students the opportunity to have full-time professional training in the workforce, and they can be assigned to practice working in the area directly related to their study program. Usually, the students will be given a task as an ad hoc project so that they can finish within 4 months. The employer will assign a mentor or a job supervisor to help in supervising, training and evaluating the students’ performance.

As a result, the students can improve their work skills a great deal in a particular kind of job in response to the employers’ direct demand. Nowadays, a number of education institutes around the world incorporate co-operative education programs in their curricula. The Office of Higher Education Commission has been aware of the paradigm and the importance of developing co-operative education; therefore, a certain policy has been imposed by the office to promote the consistency and long-term running of the program, with the terminal aim to make graduates ready and with satisfactory qualifications to work in accordance with the employers’ demands (Wichit Srisa-An and Alongkot Yawai, 2009: 4-6). The establishment of co-operative education has been the collaboration among the members of the Office of Higher Education Commission, the Thai Association for Co-operative Education, the Network of Development of Higher Education, Higher Educational Institutes, students, business employers, and other relevant parties that deal with co-operative education under the following goals:

- 1) To develop graduates to acquire satisfactory characteristics and abilities that directly meet the demands of employers
- 2) To promote collaboration between higher education institutes and the employers from business organizations in order to consistently evaluate and refine instructional curricula in accordance with the labor market, as well as improve the competitiveness and capability to meet the challenges of international competition
- 3) To enhance and support co-operative education networks to play a role as a mechanic in mobilizing co-operative education policy, as well as networks in sharing educational knowledge and resources (Office of Higher Education Commission, 2013: 11)

Thus, it is interesting to investigate the effectiveness of the co-operative education established in Thailand’s higher education, including details of its aspects, including

processes, and all of the relevant factors that can contribute to the effectiveness of the national education development of Thailand. In so doing, the study of the casual factors that have an impact on the efficiency of the co-operative education implementation in Thailand higher education is rather substantial. Although a model of co-operative education has been designed by the Office of the Higher Education Commission, the single policy and goal setting on a large scale cannot reflect all of the dimensions of the demands and restrictions of diverse cases or situations that really exist in the country.

This study attempts to investigate them in greater detail in terms of the actual needs of particular groups and then to propose the causal factors influencing the effectiveness of co-operative education. The proposed factors may shed light on practical guidelines for management panels in order to maximize their capability regarding co-operative education administration that best fits the current Thailand circumstances. In summary, it is necessary for universities that take account to follow the government policy on the establishment of co-operative education programs in order to construct a solid basis for students, to have practical guidelines and effective models to bring policy into practice, and to accomplish its end goals that contribute the best benefits to students in return. Since the world paradigm has become highly competitive, only good management of budget, time, and students' potential can promote the vigorous growth of Thailand.

## **2. Objectives of the Study**

1. What are the procedures of the co-operative education conducted in Thai higher education?
2. What are the key potential factors that influence the effectiveness of co-operative education in Thai higher education?

## **3. Method**

A qualitative descriptive design was used to describe the effectiveness in implementing co-operative education. Three Thai public universities (1. Suranaree University of Technology, 2. Walailak University, and 3. Rajamangala University of Technology Thanyaburi) out of 28 Thai public universities participating in co-operative education programs were chosen for the case study.

The researcher specifically targeted the three Thai public universities. They were chosen from leading co-operative education institutions in regional networks based on the expertise of each co-operative education implementation within the network. The three Thai public universities were selected under the criteria that they had participated in co-operative education in engineering for over 10 years.

Data Collection, in-depth interviews. Those data sources included semi-structured key informant interviews with multiple participants in each case, representing multiple groups of actors (e.g., administrators, program teachers, students, entrepreneurs, and mentors), and document reviews. Upon meeting the participants for the first interview, each was asked to provide demographic information so that the researcher could gather initial information from the participant. The informed consent was also discussed and signed at the beginning of the first interview. The interview guides were developed to help

the researcher gain insight into the past co-operative education experience of each participant and to understand their perceptions of cooperative education effectiveness. The questions in the interview guides were developed using the implementation of the co-operative education program. Those guides were finally presented.

Respondent-specific interview tools were developed beforehand in order to help guide the semi-structured interviews for each actor group, to ensure consistency of the data being collected across the cases. The administrators' interviews were not less than 180 minutes in length. Other participant interviews (program teachers, students, entrepreneurs, and mentors) were not less than 120 minutes in length. All of the respondents agreed to allow the interview to be audio-recorded.

The researcher conducted all of the interviews to ensure consistency. The participants were asked to respond to closed and open-ended questions about their perceptions related to co-operative education, activities, historical events, organizational infrastructure, and organizational changes. The researcher recorded all of the key informants' interviews using a digital recorder, and subsequently transcribed all of them.

The documents collected during the systematic document review included organizational charts, grant applications, co-operative education plans, progress or data surveillance reports, co-operative education meeting minutes, co-operative education reports, and so on.

Data Analysis : the data analysis process comprises 3 key components: 1) data organization, 2) data display and results presentation, and 3) discussion and conclusion.

#### **4. Results**

##### ***4.1. The procedures of Co-Operative Education Employed in Higher Education Institutions in Thailand***

In this study, the investigation of the procedures of co-operative education employed in higher education institutions in Thailand refer to the study of the procedures used in operating co-operative education in those three universities through the perspectives of the university administrators and co-operative supervisors. The results revealed that the similarities of those three universities were the 3 stages of co-operative education operation: 1) the pre-co-operative education stage, 2) the stage during the co-operative, and 3) the post co-operative education stage. In each stage, the activities can be described as follows, During the pre-stage, the focus was that the students were required to register for the pre-co-operative education course and also to pass the course. After that, the qualifications of the students would be filtered by the universities. Those qualifications were defined as follows. First, the GPA of an eligible co-operative student had to be not less than 2.00, cumulative up to the last semester of the coursework study; 2) they had to have passed pass the basic criteria set by their faculties; and 3) they needed to submit the co-operative education requisition confirmation form with the ranking of 3 expected entrepreneurs; and 4) they had to have attended an examination and interviews with the entrepreneurs. The universities would announce the list of successful candidates and those students in the list had to enroll in co-operative education accordingly. Second was the

stage during the students' cooperative education, and here they received the documents necessary for registering to enter the co-operative education in the workplace and then strictly followed the instructions for registration according to the plan. After that the supervisors from the universities would supervise the students at least once during their co-operative education. Third was the post-stage, when after the students had completed their co-operative education, they were required to have an interview with the supervisors from their departments in order to discuss their problems during the co-operative education. The supervisors would provide suggestions for the students to solve those problems or to improve themselves. After correction of the papers, the students would finally submit them to the supervisors and finally present the projects and share their co-operative experience at a seminar when they returned to the university.

#### ***4.2. The Influential Factors Affecting the Effectiveness of The Co-Operative Education of Higher Education Institutions in Thailand***

There were 4 influential factors affecting the effectiveness of the co-operative education of higher education institutions in Thailand: 1) political factors, 2) financial factors, 3) institutional factors, and 4) leadership factors. Those factors were elicited from the analysis of the interview data conducted with the university administrators, the co-operative supervisors, and the co-operative students from Suranaree University of Technology, Walailak University, and Rajamagala University of Technology Thayaburi. Additional data were also collected from the interview conducted with the company management and co-operative staff mentors from Western Digital Thailand Company, Betagro Public Company, and Microchip Technology Thailand Company (the universities' partner companies in the co-operative education networks). The results revealed the following.

The political factors had no influence on the effectiveness of the co-operative education operation. The findings strongly supported this as Suranaree University of Technology and Walailak University had conducted co-operative education operation for quite a long time already, at the same time as the universities were established, and that was considered long before the Office of Higher Education Commission began to work on it. Therefore, those two pioneer universities later became Thai model universities on co-operative education. For Rajamagala University of Technology Thayaburi, the political factors relatively affected its effectiveness of co-operative education operation at the beginning only when it had received government budget support from the Office of Higher Education Commission at approximately 10,000 THB per student. However, after the government support was abolished, the university still ran the co-operative education on its own. This later stage showed that no more political factors affected the effectiveness of its co-operative education operation.

Regarding the investigation of the financial factors' effect on the co-operative education operation of Suranaree University of Technology, Walailak University, and Rajamagala University of Technology Thayaburi, it was found that the universities conducted co-operative education since they started the business. At that time they

received the government budget through the Block Grant system, under the management of the university Co-operative Education and Professional Development Center, as a single stop service for co-operative education affairs. The center helped run the co-operative financial system effectively.

Disbursement of the budget could be done in the form of a budget requisition proposal as well as a written financial report each quarter of the year. If the budget was insufficient, the universities would cover that missing amount by themselves. Slightly difference of the effect of financial factors towards the effectiveness of co-operative education operation found from Rajamagala University of Technology Thayaburi. Rajamagala University began its co-operative education pilot project in the Faculty of Engineering. Therefore, the faculty set up an internal organization to take responsibility for co-operative education-related affairs. After the success of the co-operative education operation in the pilot study with the Faculty of Engineering, the university had a policy to roll out co-operative education to all curricula (100%).

In terms of institutional factors, the universities defined their own visions, objectives, missions, and goals for co-operative education operation, which involved co-operative students' preparation and development, and an opportunity provided for both public and private sectors to take part in the co-operative education operation and curriculum and professional development in accordance with local and international labor market demands. In planning for the co-operative education operation, the universities set up co-operative education as a compulsory course embedded in all of the curricula of all the bachelor degree programs. The Co-operative Education and Professional Development centers were the organizations responsible for developing the university strategic plans. They were designed in a series of short-term, medium-term, and long-term running programs consistent with the main plan of the university and consisted of two types: an annual plan and a 5-year plan. All business related to co-operative education affairs would be under the working scope of the centers. Regarding the roles and responsibilities of the co-operative supervisors of those 3 universities, they were assigned to provide consultancy to students in selecting their positions in the co-operative education, as well as to provide an co-operative education orientation before the co-operative education, on-site supervision during the co-operative education, and evaluation of the students' performance after the co-operative education.

Regarding the information that the co-operative students received from the entrepreneurs, the entrepreneurs would arrange appointments with the co-operative students for registering to begin the work. They were provided information about the time, date, and locations of the registration, including the benefits given to them by the company, so that the students could have some time to prepare themselves in advance. Regarding the assignments and positions of the co-operative students, the entrepreneurs provided all of these for them as a project, and assignments based on the consideration of the direct connection with their fields of study. Regarding their engineering knowledge and understanding, the students still had doubts about the content knowledge of engineering that they had learned from the university before their co-operative education, but after the

co-operative education, the students gained a much deeper understanding of that content knowledge through their firsthand experience in the workplace.

Regarding the institutional factors in terms of visions, objectives, missions, and goals for co-operative education operation, the results revealed that the entrepreneurs placed their focus on offering an opportunity to co-operative students for them to have firsthand professional experience and to promote research collaboration on professional skill development through the projects that they assigned to the students. The projects were basically designed for solving the existing problems found in the companies. Additionally, the entrepreneurs emphasized the development of staff mentors with the belief that all of the staff members trained would have a career path ahead to become a good leader. In planning for the co-operative education operation, the entrepreneurs assigned the HR department to be in charge of the co-operative student care. The department had developed a strategic plan for recruiting co-operative students. In defining the scope and responsibilities of the staff mentors, the staff mentors were assigned to submit a proposal for the project work before the students' co-operative education and to present it to the university students after their co-operative education. The staff mentors were responsible for supervising and giving consultancy and support to students, and helping them to solve the problems that they confronted.

In terms of leadership factors, the universities focused on the clarity of the policy defined for the co-operative education. It was a top-down process. The instructors were supposed to be clearly informed about the co-operative education operation when the university accepted them to join the team. It was necessary to explain to them that the co-operative education was a part of the curriculum so that they could absorb it over time. One major characteristic of good leadership was flexibility. The leaders not only had to give commands to subordinates but they also had to provide support and facilities to all of them so as to achieve the goals. The process of the leadership work then was more likely to become bottom-up rather than top-down.

## **5. Discussion and Conclusion**

### ***5.1. The Influential Factors Affecting the Effectiveness of Co-Operative Education of Higher Education Institutions in Thailand***

There were four factors discovered as the influential factors affecting the effectiveness of co-operative education of higher education institutions in Thailand. They consisted of 1) political factors, 2) financial factors, 3) institutional factors, and 4) leadership factors. Details are described as follows:

The political factors had no influence on the effectiveness of the co-operative education operation. The findings strongly supported this as Suranaree University of Technology and Walailak University had conducted co-operative education operation for quite a long time already, at the same time as the universities were established, and that was considered long before the Office of Higher Education Commission began to work on it. Therefore, those two pioneer universities later became Thai model universities on co-operative education. For Rajamagala University of Technology Thayaburi, the political factors relatively affected its effectiveness of co-operative education operation at the

beginning only when it had received government budget support from the Office of Higher Education Commission at approximately 10,000 THB per student. However, after the government support was abolished, the university still ran the co-operative education on its own. This later stage showed that no more political factors affected the effectiveness of its co-operative education operation.

In terms of financial factors, both Suranaree University of Technology and Walailak University had received the government budget in the form of Block grant system, under the management of the Co-operative Education and Professional Development Center. The center was organized to provide service for all co-operative education-related affairs. Thus, the financial management was effectively operated. The allocation of the budget would be done through the proposal made in requesting a budget from the government. A quarterly report would also be presented. If the budget was not enough, the universities would cover that amount. This result agreed with that of Sombat Thamrong-Thanyawong (2011), as he stated that resources were an important factor in the success of pushing the policy into practice, i.e., if any plans or projects had almost all of the factors except resources, those plans and projects would never be accomplished. The failure began since they had not started yet. Brever and DeLeon (1983) stated that the resources needed for putting policy into practice included money for investment, time, human resources, and technological tools. On the other hand, Rajamagala University of Technology Thanyaburi. Rajamagala University started its co-operative education pilot project in the Faculty of Engineering. Therefore, the faculty set up an internal organization to take responsibility for co-operative education-related affairs. After the success of the co-operative education operation from the pilot study with the Faculty of Engineering, the university had a policy to roll out co-operative education to all curricula (100%).

Institutional factors had an effect on the effectiveness of co-operative education operations. Since the universities had to define their visions, objectives, missions, and goals, all factors had to be included such as co-operative education preparation, the development of co-operative students, and an opportunity provided for collaborative work between public and private sectors in implementing an effective co-operative education network. The development of the curriculum and professional experience were constantly conducted through the teamwork in accordance with the requirements of international and local labor markets. In planning for the co-operative education, the universities had embedded the co-operative education into all curricula of the bachelors' degree programs. This result is congruent with the operation of co-operative education at the University of Water Loo (2005) the co-operative education had been operated for a long time already in the university and a clear policy of the operation had also been developed. The university began its co-operative education in 1957 and its policy had been constantly developed over time. Its number of co-operative education students was the highest in the world. Then the Co-operative Education and Professional Development Center was organized in order to take responsibility for developing a strategic plan for co-operative education operations. The plans consisted of both short-term plans and long-term plans, consistent with the university 5-year plan. All related co-operative affairs would be operated by the Co-operative Education and Professional Development Center. In terms of roles and responsibilities of the

co-operative coordinators and supervisors of those three sample universities, the supervisors would be the ones responsible for providing consultancy in selecting the entrepreneurs and positions for the co-operative students before their co-operative education. They had to visit the co-operative students in order to provide supervision as well as to evaluate the co-operative students' performance. The benefit of a clear policy agrees with the ideas of Berman (1978), who mentioned that the clarity of a policy is the root of the goals of a policy. If the policy was designed together with clear goals and objectives, putting the policy into practice was possible, and it also led to the achievement of the objective called "Turning the Policy into Practice; in other words called "programmed implementation."

In terms of the entrepreneurs, in defining their visions, objectives, missions, goals, and philosophy of co-operative education, the entrepreneurs would focus on the wide-open opportunity for the co-operative students to have real life experience in working, as well as research collaboration. The entrepreneurs also emphasized the skill development of its human resources. For the assignment of the co-operative students, they would be given project work that could develop or improve the business organization. The development of staff mentors was conducted in a way that could enable them to be ready for promotion as leaders in the future. For planning on co-operative education operation, the entrepreneurs would assign the HR department to be in charge of recruiting co-operative students in accordance with the defined strategic plan of the co-operative operation. In terms of the roles and responsibilities of staff mentors, they needed to submit a project proposal to the entrepreneurs and then present it to students from other universities. The staff mentors were also in charge of supervising the co-operative students and helped them to solve problems. This is consistent with the previous study of Brever and DeLeon (1983), who talked about the factors that influenced the process of putting policy into practice. The success would depend on the policy clarity and the source of the policy, the support of the policy, the complexity of the management, the motivation of practitioners, and the allocation of resources to support putting the policy into practice.

Regarding the leadership factors, they had a direct influence on the effectiveness of the co-operative education operation of the university. It focused on leadership in terms of the leaders that played an important role in developing an explicit policy for co-operative education so that the operation could be run accordingly and effectively. The process of the co-operative operation was in the form of a top-down process, consistent with the studies conducted by Younis and Davidson (1990), as they noted that the policy taken to be a guideline for practice was a top-down approach. The focus was placed on the policymakers. In other words, it was an approach where the policy was on the top and then was broken down into action. The operational staff would then put it into practice. In terms of instructors, the university should keep them informed about the university co-operative education operation when they were accepted to work at the organization. They needed to understand that co-operative education was a part of each curriculum. Over time, those instructors could gradually get into it. Regarding the characteristics of a good leader, he/she needed to be a person that is flexible and should not always give commands but instead help his/her subordinates. The subordinates should be allowed to have an

opportunity to make decisions on what they were responsible for. For example, the supervisors had the authority to decide whether the students that had obtained GPAs that were lower than 2.00 could participate in co-operative education or not. If the students got above C grades in all core courses of the curriculum, they were possibly permitted to join co-operative education, based on the supervisors' consideration. The supervisors could make a decision by themselves without the approval of the dean, etc. This process rather reflected the bottom-up approach more than the top-down approach, which agreed with the results of the related studies conducted by Younis and Davidson (1990) as they addressed the process of putting policy into practice by using the bottom-up approach, which seemed to be a radical change since it allowed operational staff to make decisions. Therefore, it was an approach that contrasted the traditional approach. This concept paid more attention to the results of the policy from the actions made by the operational staff.

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# **PROJECT ON THE SUSTAINABLE AND EFFECTIVE APPROACH FOR THE LABORS-SKILL DEVELOPMENT AND TRAINING BEFORE OVERSEAS WORKING.**

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## **Abstract**

*This study aimed to formulate learning process which become a sustainable and effective approach for the labors' skill development and training before going overseas as well as to be used as a master best practice for the others academic extended services by means of Quality Research Method and problems based learning analysis from the case study of the Project on Upgrading Skills Development for I-san Labors before Overseas Working. The data analysis units were the labors and their families that used to be trained in the Project on Upgrading Skills Development for I-san Labors before Overseas Working and the Government Officials and the Local Authority personnel which involved in the development of learning process of the local labors. The data were gathered and collected via group processing from the 20 labors and families from Ban Hin Heub, Tambon Phra yeun, Amphur Phra Yeun, Khon Kaen Province and Ban Nong Bua, Tambon Nong Bua, Amphur Kosumpisai, Mahasarakham Province.*

*The study revealed that learning process for the sustainable and effective approach for the labors' skill development and training before going overseas should be composed of the following order: Labors Registration and Screening, Introduction, Project Description, Multimedia Projection, Group Discussion, Group Presentation, Meeting with Expertise's and Senior Lecturers, Idea Expression and Exchange, Conclusion, Project Evaluation and Report Writing. In addition, the essential key success factor that play a great role on the outcome of the project is the close and intensive cooperation among the local and central labors officers, Labor Department, the expertise from the Consular, local Government Officials of the Ministry of Interior such as the Sheriff, community leader(s) and the Academic Network. The activities should begin with the detailed study and clear cut on situation, problems as well as background information of the labors and the needs of the communities before cooperated with the lecturers as well as the expertise and the related Department.*

## **1. Introduction**

Overseas working is quite common and has been popular from the past. This tendency is increasing more and more in the future. However, the cheating patterns that cheated to the labors are also happened. The fact is that the labors' families are

expected to earn much more money from their family's member(s) that working in overseas and the overseas money can upgrade their quality of life. Thus, the overseas working become popular in the rural area and constrain that forced the families' member(s) to work overseas.

Apart from the fact that there are a lot of the overseas money that was sent back to their families and this sum of money also play a great role not only on the quality of life of the families' members but also the rural or community's economics particularly when the country is under the economics' crisis. Thus, the overseas working is one of the Labor Department policy which will be continue for last long. However, there are two main critical problems that come together with the labors that working overseas. The first one is the cheating problems. The labors are cheated by the private companies and others, in terms of types of works, rented and advanced money, working time etc. the other problem is the behavior of the labors themselves when they are staying overseas which were badly effected to their success in working overseas. For example: they spent a large amount of money that earned from their working for the gambling, alcoholic drinking which leading to the unproper behaviors flighting sex harassment etc. These sorts of behavior affected them to be sent back to their home town with a large amount of money that have been borrowed in advance from the private employer company to use in the cost of expenses for the preparation, such as special technical training, working fee, clothes etc. before going overseas. However, this problem seems to be individual problem but in reality it is a lot of effected not only to his or her own but also to their families' members in terms of both quality of life and social acceptance.

Consequently, the labors preparation before working overseas are essential and needed to be taken into comprehensively study and planned in order to cope with every concerned items and set up the appropriate and effective training the labors, not only in technical skill, but also social skill and living skill before going overseas.

Consular Ministry of Foreign Affair realizes the essential and role of the labors policy and requested for the cooperation from Faculty of Humanity and Social Science, Khon Kaen University to set up the Skill Training Project for I-san labors before going overseas.

The I-san labors are trained to understand and protect their rights and know how to behave themselves in the working overseas country including the Thai Government assistance-providing system, how to ask for help from the Thai embassy, especially on the laws that involved with labors and related laws in order to protect the Trafficking.

Faculty of Humanity and Social, Khon Kaen University has realized on its roles in learning process and practical training in order to cope with all of the concerned problems in such a sustainable way. Thus, the Project on skills development for I-san labors before overseas working was used as a case study and analized in order to set up the effective approach for the labors' skill development and training as well as to be a master best practice for the others academic extended services both within and outside the University.

## **2. Objective**

The objective of this research is to study and analyzed the Project on skills development for I-san labors before overseas working before set up the sustainable and effective approach for the labors' skill development and training as well as to be a master best practice for the others academic- extended services.

## **3. Methodology**

The quality research method, in-depth interview, was used as a major tool for data collection and gathering form the target group which were Labors' families that were trained in the Project on skills development for I-san labors before overseas working and the Government Officials and Sub-district Administration Organization that involved in the learning processes. There were 30 families from Hin Heub Village, Tambon Phra yeun, Amphur Phra yeun, Khon Kaen Province as well as 30 families from Tambon Nong Bua, Amphur Kosompsai, Mahasarakham Province and the local experienced leaders were interviewed via Group Discussion Guideline. The target group was classified into 3 subgroups. The first subgroup was the labors' families that used to work overseas. The second subgroup was the labors' families that were working overseas. The third subgroup was the labors' families that planned to go overseas and the interested local persons.

## **4. Results of Study**

The results of study revealed that the effective learning process of the skills development of the labors should be composed of the following Orders:

### **1. Labors Registration and Screening**

The labors should be registered and screened according to specific subgroup and took the color label for each specific subgroup. For Example: the first subgroup had got a yellow label whereas the second subgroup had got a red label and the third subgroup had got a white label.

### **2. Introduction**

The project leader has to introduce the project responsibility, lecturers, members' committee to the trainees.

### **3. Project Description**

The details of the project must be clearly described especially the introduction or background information and the objective of the project

### **4. Multimedia Projection**

The multimedia concerning about the activities, status, income, expenses, way of living, work condition, problems etc. of the overseas labors, both pro and con, should be shown to the trainees as introductory background.

### **5. Group Discussion**

The trainees should participate in the specific subgroup or the color label which were screened since registered. Ice breaking process was recommended before group discussion. This activity will help the understanding between the lecturers and the trainees.

Then, the labor crisis and problems in overseas should be thoroughly discussed. This group discussion should take time for approximately 40 minutes.

#### 6. Group Presentation

The lecturer or the representative of each subgroup has to present the results of group discussion including questions concerned.

Questions from the first subgroup were: How to go overseas? What are the technical skills that are needed in overseas? Type of VISA, working permit or tourist visa? Going overseas by the Labor Department or private companies, working and travelling expenses, source of money, how to send money back?, overseas accommodation?, co-worker and boss relationship? The needs, assistance and expectation from the Labor Department and Ministry of Foreign Affairs?

Questions from the second subgroup are more or less the same as the first one, except the question about how to go back home if the worker is still overseas with expired visa or illegal entering.

Lastly, the questions from the third subgroup are also more or less as the first one.

After the group presentation is finished. All the questions will be answered in details by the Government Officials from Labor Department, Ministry of Labor and Security and Consulate Department, Ministry of Foreign Affairs.

#### 7. Meeting with Expertise's and Senior Lecturers

This is the time for the labor's expertise's and /or senior lecturers, from the Consulate Department, Ministry of Foreign Affairs, to tell all the concerned knowledge about the labor's law, assistance and their rights to use the facilities that provided by the Government, particularly on how to prepare themselves before going overseas and how to ask for help when facing with the problem(s) while working in overseas.

#### 8. Idea Expression and Exchange

The participants have a chance to express their idea as well as suggestion and ask all of the concerned problems that they would like to know.

#### 9. Conclusion

The project leader should conclude all of the training activities including the problems from each subgroup and their solution.

#### 10. Project Evaluation.

The project activities should be evaluated by the participants via interview and/or questionnaire.

#### 11. Report Writing

### **5. Conclusion and Discussion**

The sustainable and effective approach for the labor's skill development and training before going overseas as well as to be used as a master best practice for the others academic extended services, that was set up after the analysis

and exercise practices based on the skill development for I-san labors before overseas working Project could be concluded that learning process for the sustainable and affective approach for the labors' skill development and training as well as to be used as a master best practice for the others academic extended services should be composed of the Labors Registration and Screening, Introduction, Project Description, Multimedia Projection, Group Discussion, Group Presentation, Meeting with Expertise's and Senior Lecturers, Idea Expression and Exchange, Conclusion, Project Evaluation and Report Writing.

The sustainable and affective approach for the labors' skill

development and training as well as to be used as a master best practice for the others academic extended services are concentrated directly on

1. Labor, himself or herself. The labor's laws as well as regulations and

right are understood and also known how to approach to the government's assistances and can be well prepare himself or herself to survive under new or different society and culture including how to perform his or her behaviors in proper manner. Moreover, the labors know how to directly apply for the overseas jobs via the Labor Department and go to work in overseas by the Government services such as by Government to Government with the Employment Permit System for Foreign Workers (EPS). In addition, knowledge that has been gained can be forwarded to the members of his or her family, relatives, friends etc. In terms of right, the labor will know the type and scope of right that he or she can ask for such as if the labors that worked in Israel from 2003-2005, they can ask for tax refund within 6 years. That means the labors that worked in Israel in 2003 can have their right for tax refund within 2009 whereas the labors that worked in Israel in 2004 can have their right for tax refund within 2010 while the labors that worked in Israel in 2005 can have their right for tax refund within 2010 respectively.

2. Families. It is easier for the family's members to make decision on

the working overseas of the labor(s) after the family's members have got the knowledge from the training as well as the types and scope of labor right and the risks and also know how to approach to the governments' assistance.

3. Local Society or Community. After training, the knowledge will be

widely distributed among the people not only in the families but also in the community by the words of mouth. The local authority officer(s) such as Kumnun or Phuyai Ban which has been acted as a leader of the community will become as the knowledge source center and office of the overseas working and closely connected to the local Government Officials in terms of community needs, interested data, information and collaboration.

Consequently, the key success factor of this project consists of the close and intensive cooperation among the local and central labors officers, Labor Department, the expertise from the Consular, local Government Officials of the Ministry of Interior, such as the Sheriff and/or the community leader(s), and the Academic Network. The activities

should begin with the detailed study and clear cut on situation, problems as well as background information of the labors and the needs of the communities before cooperated with the lecturers as well as the expertise and the related Department.

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### **In-depth Interview**

(17 March 2014) Ban Hin Hueb, Tamboon Phra Yeun, Ampher Phra Yeun, Khon Kaen Province.

Boonrieng Chasa-nguan. Wanchai Boriboon.

Sa-ngob Chanayotha. Surapon Keawkerd.

Su-pham Ubpanisai. Pranee Meesuk.

Montri Jamsai. Sumroeng Nakratok

(18 March 2014) Ban Nong, BuaTambon Nong Bua, Ampher Kosompisai, Mahasarakham Province

Aim Orn Sukprasert. Sudjai Srithep.

Malee Jaimun. Thawon Kummuang

Nang Noy Chokdee. Jumpee Kosummee

Wichien Jaisumreon. Jumnong Suksawan

**RELATIONSHIPS BETWEEN PERSONAL FACTORS AND  
GRADUATION OF UNDERGRADUATE STUDENTS OF KHON KAEN  
UNIVERSITY IN ACADEMIC YEARS 2003-2012**

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**Abstract**

*Student graduation is an important indicator of an achievement of academic curriculum management of higher education institutes. Delayed graduation will affect the academic budget, time and planning. Therefore, the relationships between admission systems and graduation of undergraduate students of Khon Kaen University (KKU), during academic years 2003-2012, was studied. The purpose is to study the relationship between personal factors and graduation of undergraduate students enrolled in 2003-2012 academic years at the KKU. Secondary academic data set of 53,277 full-time students, retrieved from the student enrolment system, was analysed by using simple statistics and Chi-Square test.*

*The study found that 78.9% of the students graduated, however, 66.8% of them was completed within a planned schedule. It was found that female students graduated at a higher rate than males. While students from the Northeast of Thailand, where the university located, finished only 66.4%. Moreover, only one third of students, enrolled in non-regular program, graduated. Students of science and technology programs and Nongkhai Campus graduated at the lower rate 56.6% and 59.8%, respectively. Analysis of the relationship between student personal factors and graduation, such as gender, home region, high school grade point average, admission system, study program, and studied faculty, all related statistically to the graduation at the 0.01 level of significance.*

**Key words:** Graduation Analysis, Khon Kaen University, Personal Factors, Relationship

## 1. Introduction

Higher education is important for the country to develop graduates ready to work in all fields. Those graduates must be qualified and potential and meet the needs of both regional and international societies and in line with the National Economic and Social Development Plan in order to develop the country sustainability.

One of the major problems in the production of graduates of higher education institutions is the educational waste by dropping out of the students due to the resignation and due to the fact that students cannot graduate caused by poor grades and it also takes more time to complete the course. This is a waste of time, money and planning for higher education institutions.

There are a number of undergraduate students at Khon Kaen University who do not graduate each year. This is a waste of education in no small amount, in both budget, time and management which may not meet the projected target. The problem is urgent for the university to tackle in order to drive the university's development strategy to achieve its goals effectively. Therefore, the study of the correlations between the personal factors and the graduation of undergraduate students was conducted.

The research objective was to study the relationships between personal factors and graduation of undergraduate students, enrolled in 2003-2012 academic years, at the KKU.

## 2. Method

This research was based on secondary data set of the student enrolment database of the KKU. The population was 53,277 undergraduate students enrolled in the academic years 2003-2012 at the KKU. A unit used to analyze is an individual student. The conceptual framework was defined and there are 7 independent variables: gender, home region, high school GPA, admissions system, study program, program groups and faculty. The dependent variable is nominal scale graduation: 1) on time graduation, 2) delayed graduation and 3) failed to graduate. Statistical analyses, descriptive statistics, Crosstabulation and Chi-Square test, were carried out with IBM SPSS Statistics.

## 3. Results

### *3.1 Characteristics of undergraduate students enrolled in the academic years 2003-2012 at the KKU.*

Most of the students are female (59.3%) and are frequently from the Northeast (91.1%). The KKU has a policy of recruiting students in the Northeast which approximately 50-70% of the total number of students enrolled each year. Other students entering via additional admission systems such as the Central Admission. However most of them are students from the Northeast. Based on our data, it is noticeable that the greatest amount of the students is with the high school GPA of 3.01-3.50 (35.5%), followed by those with the high school GPA of 3.51-4.00%, (31.2%). This might be resulted from the policy of Khon Kaen University quota admission system conducted prior to other admission systems therefore potential students were selected. Most of them studied in the regular program (76.3%) and in the field of health sciences (38.0%). The majority of the students studied in the Faculty of Engineering (15.2%) followed the Faculty of Science (11.7%) (Table 1.)

**Table 1. Characteristics of undergraduate students enrolled in the academic years 2003-2012 at the KKU.**

<b>Characteristics</b>	<b>% (N)</b>
<b>Gender</b>	
Male	40.7
Female	59.3
<b>Total</b>	<b>100.0 (53,277)</b>
<b>Region</b>	
Central	4.4
Eastern	0.9
Northeastern	91.1
Northern	1.7
Western	0.7
Southern	1.2
<b>Total</b>	<b>100.0 (53,277)</b>
<b>High School GPA</b>	
2.00 and lower	2.3
2.01-2.59	0
2.51-3.00	21.9
3.01-3.50	35.5
3.51-4.00	31.2
<b>Total</b>	<b>100.0 (53,277)</b>
<b>Admission System</b>	
Northeast Quota system	37.3
Central Admission	29.4
Special Entrances	20.8
Other	12.1
<b>Total</b>	<b>100.0 (53,277)</b>
<b>Study Program</b>	
Regular	76.3
International	1.2
None-Regular	22.5
<b>Total</b>	<b>100.0 (53,277)</b>
<b>Program Groups</b>	
Sciences and Technologies	35.5
Health Sciences	38.0
Humanities and Social Sciences	17.8
Nongkai Campus	8.9
<b>Total</b>	<b>100.0 (53,277)</b>

**Table 2. Characteristics of undergraduate students enrolled in the academic years 2003-2012 at the KKU (Continued).**

<b>Characteristics</b>	<b>% (N)</b>
<b>Faculties</b>	
Science	11.7
Agriculture	6.6
Engineering	15.2
Education	5.4
Nursing	2.8
Medicine	4.2
Humanities and Social Sciences	11.2
Associated Medical Sciences	2.8
Public Health	3.2
Dentistry	1.0
Pharmaceutical Sciences	2.3
Technology	2.2
Veterinary Medicine	1.4
Architecture	2.3
Fine and Applied Arts	1.6
Nongkhai Campus	8.9
Law	3.1
College of Local Administration	0.9
International College	0.2
Management Sciences	12.6
<b>Total</b>	<b>100.0 (53,277)</b>

**3.2. Graduation of undergraduate students, enrolled in the academic years 2003-2012.**

The study found that most of the students graduated (78.9%). Although the graduation rate is relatively high, however, only 66.8% of them were graduated on time and 21.2% of them failed to finish, as shown in Table 2.

**Table 3. Percentage of graduation patterns of undergraduate students, enrolled in the academic year 2003-2012.**

<b>Graduation</b>	<b>%</b>
On time	66.8
Delayed	12.1
Failed	21.2
<b>Total</b>	<b>100.0 (53,277)</b>

### ***3.3. The graduation of undergraduate students, enrolled in the academic years 2003-2012 at the KKU, classified by student characteristics.***

Based on student characteristics, it was found that female students graduated at a higher percentage in comparison with male while 29.3% of male was unsuccessful. The students from the Northeast completed only 66.4%, which is in a second place of the lowest rank except that of the Eastern region. Although most of the students studied at the KKU were from the Northeast but the percentage of graduates is relatively low and the percentage of ungraduated students is up to 21.4%. This may be due to the fact that most of the students are from the Northeast (91.1%) where the KKU situated or they chose the wrong course unmatched their academic capability.

Students enrolled by the special admission graduated on time only 51.1% and failed to finish up to 32.5%. It is worth to stress that this phenomenon occurs due to the special entrance is the last choice for students who failed the first two admissions, Northeast Quota and Central Admission. Even more, not all faculties recruit students thru the special admission, the program they inevitably selected/accepted might not academically fit them well and consequently affected their performance.

The students enrolled in the study program of non-regular curriculum managed to graduate at a lower rate (49.4%) and dropped out up to 34.0%. They might not qualify for the enrolled program or their academic knowledge might not meet the studied program. Students with a lower proportion of graduation are those who enrolled in the faculties of sciences and technologies group (56.6%) and faculties of Nongkai Campus (59.8%) (Table.3). At the KKU, there are students enrolled in the non-regular programs in Faculty of Engineering and Faculty of Science. Both non-regular programs and regular programs use the same curriculum and standard. Moreover the curricula of engineering program contains such subject as mathematics and physics, which influence the number of graduates. At Nongkai Campus, graduation rate is less than 60% since most of the students at Nongkai Campus did not pass the main campus selection. They are more likely that their academic performance is less if compared to students enrolled in the regular programs at the main campus.

The students with a high school GPA range between 3.01 and 3.50 and range between 3.51 and 4.00 graduated with the higher rate, 69.7% and 80.6% respectively. Higher school GPA means that these students are skillful and be able to graduate obviously.

Students' graduation is associated with the faculty they studied at the KKU. The number of students enrolled in the health faculties such as Faculty of Nursing, Faculty of Medicine, Faculty of Dentistry, Faculty of Associated Medical Sciences, Faculty of Pharmaceutical Sciences and Faculty of Veterinary Medicine graduated with high percentage ( $\geq 80\%$ ). The main motives for enrolling in this government-funded faculties group are a lucrative job market. In the faculties group of humanities and social sciences, students of College of Local Administration completed the program at a higher rate (90.6%). The college provides funds for students and its educational administration is semi-private-run hence the advisors supervise their students closely resulting the higher

rate of graduation. On the other hand, International College, the Faculty of Humanities and Social Sciences and Faculty of Law, the graduation failure rate is relatively high, 37.3%, 26.5% and 20.0% respectively. These faculties require specific academic expertise to complete the curriculum.

**Table 4. The graduation of undergraduate students, enrolled in the academic years 2003-2012 in the KKU, classified by personal student characteristics.**

Variables		Graduation Patterns			Total (%)	Chi-square test
		On Time	Delayed	Failed		
<b>Gender</b>	Male	55.4	15.4	29.3	100.0 (21,655)	0.00
	Female	74.7	9.9	15.4	100.0 (31,582)	
<b>Region</b>	Central	72.8	9.1	18.1	100.0 (2,357)	0.00
	Eastern	66.2	13.0	20.9	100.0 (455)	
	Northeastern	66.4	12.3	21.4	100.0 (48,558)	
	Northern	68.5	13.5	18.0	100.0 (890)	
	Western	76.1	10.2	13.7	100.0 (372)	
	Southern	71.2	10.9	18.0	100.0 (645)	
<b>High School GPA</b>	<=2.00	30.3	15.5	54.2	100.0 (1)	0.00
	2.01-2.50	43.5	17.5	39.0	100.0 (4)	
	2.51-3.00	56.4	15.6	28.0	100.0 (11)	
	3.01-3.50	69.7	12.2	18.2	100.0 (18)	
	3.51-4.00	80.6	7.4	12.0	100.0 (16)	
<b>Admission Systems</b>	Northeast Quota	72.4	10.8	16.8	100.0 (20,103)	0.00
	Central Admissions	70.6	10.7	18.7	100.0 (15,661)	
	Special Entrances	49.4	16.6	34.0	100.0 (11,077)	
	Others	70.0	12.2	17.8	100.0 (6,436)	
<b>Study Programs</b>	Regular	71.3	10.9	17.8	100.0 (40,644)	0.00
	International	74.0	9.3	16.7	100.0 (622)	
	None-regular	51.1	16.5	32.4	100.0 (12,011)	
<b>Program Groups</b>	Science and Technology	56.6	13.6	29.8	100.0 (20,240)	0.00
	Health Sciences	79.9	12.2	7.9	100.0 (9,496)	
	Humanities and Social Sciences	72.9	10.1	17.0	100.0 (18,808)	
	Nongkai Campus	59.8	13.8	26.5	100.0 (4,733)	

**Table 4. The graduation of undergraduate students, enrolled in the academic years 2003-2012 in the KKU, classified by personal student characteristics (continued).**

Variables		Graduation Patterns			Total (%)	Chi-square test
		On Time	Delayed	Failed		
<b>Faculties</b>	Science	64.4	9.7	25.9	100.0 (6,226)	0.00
	Agriculture	69.6	13.2	177.2	100.0 (3,491)	
	Engineering	41.5	17.3	41.2	100.0 (8,115)	
	Education	79.6	7.0	13.4	100.0 (3,043)	
	Nursing	90.8	2.8	6.5	100.0 (1,516)	
	Medicine	86.0	12.1	1.9	100.0 (2,230)	
	Humanities and Social Sciences	69.9	10.1	20.0	100.0 (5,962)	
	Associated Medical Sciences	83.6	4.8	11.6	100.0 (1,501)	
	Public Health	51.1	36.1	8.8	100.0 (1,711)	
	Dentistry	84.9	7.5	7.5	100.0 (558)	
	Pharmaceutical Sciences	82.4	5.1	12.6	100.0 (1,241)	
	Technology	67.3	12.7	20.0	100.0 (1,181)	
	Veterinary Medicine	81.7	6.5	11.8	100.0 (739)	
	Architecture	69.9	11.6	18.5	100.0 (1,227)	
	Fine and Applied Arts	50.3	27.2	22.5	100.0 (863)	
	Nongkhai Campus	59.8	13.8	26.5	100.0 (4,733)	
	Law	66.6	16.8	16.6	100.0 (1,629)	
	College of Local Administration	90.6	4.2	5.2	100.0 (501)	
	International College	56.6	6.0	37.3	100.0 (83)	
	Management Sciences	75.9	8.1	16.0	100.0 (6,727)	

#### 4. Conclusion

Even the study shows that students enrolled in academic years 2003-2012 at the KKU graduated at the higher rate (78.90%), but only 66.8% of them was completed within the planned schedule. In regard to the personal characteristics, it was found that female students graduated at the higher rate than males. While students from the Northeast of Thailand, where the university located, completed less in comparison with students from other regions. Moreover, students enrolled in non-regular program, graduated at the lowest rate. Students of sciences and technology programs and Nongkhai Campus graduated at the lowest rate at 56.6% and 59.8%, respectively. Students' graduation is associated with the faculty they studied at the KKU. The number of students enrolled in the health faculties

such as Faculty of Nursing, Faculty of Medicine, Faculty of Dentistry, Faculty of Associated Medical Sciences, Faculty of Pharmaceutical Sciences and Faculty of Veterinary Medicine graduated with high percentages. In the faculties group of humanities and social sciences, students of College of Local Administration completed the program at a higher rate. On the other hand, International College, the Faculty of Humanities and Social Sciences and Faculty of Law, the graduation failure rate is relatively high, 37.3%, 26.5% and 20.0% respectively. All independent factors, such as gender, home region, high school grade point average, admission system, study program, and studied faculty, related statistically to the graduation at the 0.01 level of significance.

Some limitations were found along with the study. We suggest a further qualitative study on the unsuccessful students and it would be worth it to analyze the academic achievement by schools.

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# RESEARCH PROBLEMS AND BARRIERS OF FACULTY MEMBERS FACULTY OF HUMANITIES AND SOCIAL SCIENCE, KHON KAEN UNIVERSITY

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## **Abstract**

*This article focuses on the research problems and barriers of faculty members in the Faculty of Humanities and Social Sciences, Khon Kaen University. The population in the study is faculty members in Faculty of Humanities and Social Sciences, Khon Kaen University, academic year 2557. The data is collected using questionnaire and interview. Section 1 is to analyze the general information of population; Section 2 is to analyze 1) aspect of research management of faculty, 2) researcher, 3) research fund, and 4) research environment.*

*The results of research revealed that 1) aspect of research management of faculty: proceeding and experts' consideration encourage the faculty members more in doing research. However, there is still lack of research mentors and consultant in transferring research knowledge, advising, and enhancing researchers' ability; 2) aspect of researcher: researchers have less amount of intention and commitment because of work load (teaching) which is not conducive to research and doing research is stressful and overtired. Therefore, it is considered as a problem and obstacle in doing research; 3) aspect of research fund: research funding is limited. Some projects require more research funding than limited funding source. Applying for fund and disbursement of research are complicated. Therefore, it is considered as problem and obstacle in doing research; 4) aspect of research environment: doing research lacks lack place encouraging in doing research within the faculty and there is no research facilities in doing internal research as well as opportunity in exchaing knowledge between researchers; there is no contact with other research agencies creating problems in doing research of the faculty members.*

**Keywords:** *Research Barriers; Research; Faculty of Humanities and Social Science*

## **1. Introduction**

Research is a fundamental activity in developing learning society especially in constantly changing situation. Research is a process of learning that can create new knowledge and the knowledge that is the result of systematic analysis can be applied confidently (Pa-thai Yenchitsomanus, 2552). Teachers are key factor in quality education management. In thailand, students are cultivated a culture of learning focused on listening to lecture rather than self study. Hence, in addition to teach and educate students, teachers are also like library or learning resource. Therefore, quality of teacher has great impact on the quality education of students. Improving quality of teachers through various forms and

processes is crucial in progressing academic talents of teachers in conducting research and presenting academic papers in both national and international stages. Teachers are consistent with roles and responsibilities of higher education institutions that have set up 4 main missions i.e., graduate, research, academic services, and art and culture preservation. Besides, the research is a major task of higher education institutes and an important factor in the development of the economy and society, but also both quantitative and qualitative research are also an indicator of the quality of education of higher education institutions in external assessment manual and the Office for National Education Standards and Quality Assessment (Public Organization) (Office of the Higher Education Commission, Ministry of Education, 2007). Faculty of Humanities and Social Sciences has been providing fund to faculty members since fiscal year 2007 - present so that faculty members come up with quality research which can be applied in the developing teaching and learning as well as policies, academic, and increase awareness of the importance of publishing research and other various knowledge of Faculty of Humanities and Social Science, Khon Kaen University because research is another important obligation of university professors. However, the number of faculty members applying for fund is less because doing academic research is not elementary. This is because the educational institutes play a vital role in teaching which might create problems and barriers in carrying out research project. For this reason, research is interested in studying the problems and barriers in applying for research fund of lecturers, Faculty of Humanities and Social Sciences, Khon Kaen University.

Additionally, the result is an indicator of component 4: research issue 4.2: system and mechanism of knowledge management or creative work. The results of the research also led to the provision of information to the research and academic service department for recommendations on the policy formulation of research groups and the allocation of research funding to the faculty members. In addition, the information is also clear enough to encourage lecturers in self-development endlessly. One way for self-development is doing research. Researcher being supporting staff of research and academic service department of faculty, is interested in studying problems and barriers in applying for research fund of lecturers, Faculty of Humanities and Social Sciences, Khaon Kaen University. The results of the research will be presented to the executives as a guideline in promoting and supporting the research of lecturers in future.

## **2. Objectives**

1. To perceive problems and barriers in doing research of lecturers, Faculty of Humanities and Social Sciences, Khon Kaen University
2. To be a guideline in solving problems in doing research of lecturers, Faculty of Humanities and Social Sciences, Khon Kaen University

## **3. Methodology**

This is a Quantitative Research. The population used in this research is faculty members from Faculty of Humanities and Social Sciences, Khon Kaen University in academic year 2557. The tool used in this research is questionnaire. Descriptive statistics are used to analyze collected data; percentage, mean, and standard deviation.

#### **4. Results**

The results of the research along with objectives are as follows:

##### **Section 1 General Information**

1. Male 10 and Female 14
2. Education: M.A. 10 and Ph.D. 14
3. Academic Rank: Lecturer 14 and Assistant Professor 10
4. Working experience: 1-5 years (9 persons), 6-10 years (7 persons), 11-15 years (5 persons), and more than 16 years (3 persons)
5. 19 faculty members ever received research fund and 5 faculty members never received research fund
6. 18 faculty members had experience of being head of research project and remaining 6 members were co-researchers

##### **Section 2 Analyzing opinion on problems and barriers in doing research in 4 aspects:**

###### **1. Aspect of Research Management of Faculty**

Opinion on problems in doing research of faculty members are as follows: proceeding has highest level of suitability (83.3%), followed by experts' consideration and systematic research management (79.2%). In the aspect of publishing research, the suitability was in highest level (79.1%). In aspect of publicizing research fund of faculty, considering fund and process of submitting complete research, it also has highest suitability level (70.9). As for time in publicizing research grant/submitting research project, suitability is in highest level (54.2).

###### **2. Aspect of Researcher**

Opinion in the aspect of the researcher, the results are as follows: researchers have limited intention and commitment because of teaching work load; not conducive in doing research. The level of suitability is highest (58.3%). Doing research increase stress and fatigue. The level of suitability is highest (33.3%). Problem and barrier in doing personal activities and motivation. The level of suitability is highest (29.2%). Researchers lack experience and skills in conducting research. The level of suitability is highest (25.0%). This is lack of research advisor (20.8%). Lack of knowledge in the process of doing research (16.7) and be unaware about research field (12.5%).

###### **3. Aspect of Research Fund**

Opinion in the aspect of research fund: research fund sources are limited (79.2%). Researchers have no knowledge of research fund sources and claiming expenses is sophisticated (37.5%).

###### **4. Aspect of Environment in doing Research**

Opinion in the aspect of environment in doing research: lack of endorsing facilities in faculty (75.0%); lack of information searching facilities in the faculty (62.5%); favorable circumstances in exchanging knowledge (50.0%); and information technology system is not conducive in doing research (45.9%).

## 5. Discussion

Studying problems and barriers in doing research of faculty members, Faculty of Humanities and Social Science found that opinion of faculty members in problems and barriers are work load of teaching and other duties in institutional development. These are time-consuming in completing the research on time and institutional factor includes research funding, academic atmosphere, and institutional executives are external factors in research productivity. The research result of Athitaya Changsisang (2545) titled Factors affecting research productivity of faculty members in Nursing College under the Ministry of Defence and Royal Thai Police found that factors in research funding sources, equipments, and facilities in doing research, support form the agencies, executives, and colleagues, research time, work load facilitating research, and compensation from doing research have no affect on the productivity of the research. However, researcher analyzed key factors supporting research as follows: 1) aspect of research management of faculty: in proceeding and having experts' consideration encourage the faculty members to participate in doing more research. Nonetheless, there are no research mentors and consultant in transferring research knowledge and enhancing researchers' potential; 2) aspect of researcher: researchers have little intention and commitment because of work load of teaching which is not conducive in doing research. Moreover, doing research increase stress and fatigue. Therefore, it is considered as a problem and barrier in doing research; 3) aspect of research fund: research funding is limited. Some projects require more research funding than limited funding sources and applying for research funding and disbursement of research funding is complicated. This is why it is considered as a problem and barrier in doing research; 4) aspect of environment in doing research: lack of atmosphere in doing research in faculty and lack of place in searching for information including chances in exchanging knowledge of researchers and lack of researchers network with other instituten create problems in doing research of faculty members.

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# **A GUIDELINE FOR HUMAN TRAFFICKING PREVENTION AND SUPPRESSION IN A POLICE STATION LEVEL: CASE STUDY OF SAMUT SAKHON POLICE STATION**

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## **Abstract**

*Human trafficking is one of the most important issues around the world which is an international crime and a new threat to national security. Thai government too does not hesitate to eradicate human trafficking issue. Law enforcers 'Police officers' play a vital part in human trafficking prevention, suppression, controlling and bringing the case to judicial procedure. In order to enforce involving laws to the maximum effectiveness, law enforcers, who are working on human trafficking prevention and suppression, have to be empowered by the government supports. The police officers in provincial police station are the main target of aforementioned empowerment since they are the closest to the community as well as the problem.*

**Keywords:** Guideline, Prevention and Suppression, Human Trafficking, Police Station

## **1. Introduction**

### **Rationale and Background**

Human trafficking remains one of the biggest problems in Thailand and the world. Because human trafficking violates the being of human right which is the major concern of the community around the world. Moreover, the human trafficking is a new form of national security threat. Therefore, this human trafficking is the major issue which countries including Thailand have to raise more awareness and cooperate to eliminate the problem. Thailand government has declared that solving the "Human Trafficking" to be Thailand's national agenda on August 6, 2004 aiming to eradicate human trafficking problem. After that, on April 3, 2015, the Prime Minister announced the "Human trafficking" to be national agenda which required all of the relating department to integratedly work together under the concept of "Pracha-Rat Ruam Jai Tarn Pai Karn Ka Manud (Public-Private works together to solve human trafficking problem)". Then, the strategic policy and measure to prevent and suppress human trafficking has been determined (2011 - 2016). The strategy and measure were created to be the tools for steering the process of the 20 years national's roadmap strategy (2017 - 2036) in the terms of Human Security.

Although Thailand has been putting the effort to execute the human trafficking prevention and suppression policies including Human Trafficking prevention and Suppression Act 2008 and important law mechanism, the outcome of the effort did not

meet the lowest requirement in Trafficking in Persons Report (TIP Report) yielding the negative report toward human trafficking prevention and suppression situation.

Thai Royal Police is one of the departments that take a major role in human trafficking prevention and suppression. Apart from setting special Crime Suppression Division to counter this problem particularly, Thai Royal Police also applies management measure to prohibit police officers to get involved to human trafficking as well as develops and improves human trafficking cases database to be up-to-date which connected to related organizations. Other than that, the department also develops Thai Royal Police 20 years strategic plan phase 1 (2017 - 2036) focusing on human trafficking missions consisting of preventing and suppressing human trafficking crimes as well as enhancing human trafficking preventability and suppression capacity.

However, in order to fully enforce the law against human trafficking, despite of the clear terms and definition of the lawsuit itself, legal punishment has to be appropriate to the severity of the crime. There has to be the composition of procedural supporting factors whether in prevention work or in suppression work for police officers who take part in this human trafficking prevention and suppression in the level of police station which is the root of all related works.

From the study of Wanna Changjanya (2014) which is the study of human trafficking prevention and suppression of Thai Royal Police 2nd Sub Division The Anti-Trafficking in Persons Division, Thai Royal Police. It was found that there are four obstacles in anti-trafficking works, those are: 1) In planning aspect; It was found that budget and resource are not adequate to the plan rendering the officers cannot follow the plan. 2) In managing aspect; It was found that staff number is insufficient and lack of cooperation among other organization. 3) In leadership and line of command; It was found that the orders do not cover as well as the hierarchy of command makes the order blurred. 4) In controlling aspect; It was found that controlling power does not cover all of the staffs.

The government determined Samutsakorn province to be one of seven human trafficking risk provinces including Samutsakorn, Chon Buri, Chachoengsao, Rayong, Nakhon Si Thammarat, Songkhla, and Sa Kaeo because those provinces are the place that have a lot of influx alien labors. The labors are Burmese 200,001 people (93.87%), Cambodian 10,323 people (4.85%) and Laotians 2,692 people (1.26%). The Burmese labors living in Samutsakorn mostly are Mon scattering around the province, Amphoe Krathum Baen, and Amphoe Ban Phaeo, especially in Amphoe Muang Samutsakorn there are 73 communities defined to be high-dense residential area (Alien labor hiring situation of Samutsakorn province, 2017)

It is recognizable for the researcher that studying current situation of human trafficking prevention and suppression of the officers, who take a major part in strengthen the counter measure of this issue, in the level of police station is a vital. The officers have to control the area allowing the police officers work more effectively. The officers, the main pillar of human trafficking prevention and suppression, have to be agile in taking and execution received orders and be able to work with other organization harmoniously. The

research is the case study of involving officers who take part in human trafficking prevention and suppression task in Samutsakorn police station level. In addition, the study also probes the cooperation guideline among related organizations yielding integrated cooperation from all related departments to counter trafficking problem leading to executable practices for other organization according to the government and National Council for Peace and Order (NCPO) policy.

### **Related Theory**

#### **Iceberg Model**

David McClelland has given the implication of competency in the book “The Competency Foundation” which described human characteristic to be as same as iceberg Tip of the iceberg, the ‘visible’ part:

1) Skill means the things that man knows and has capability to do them well such as reading skill, listening skill, driving skill, etc.

2) Knowledge means the things that man knows and understands to its particular concept or idea; for example having knowledge about accounting, having knowledge about marketing or politics, etc.

Body of the iceberg, the ‘hidden’ part:

3) Social Role means the things that individual needs to let other people know how he contributes to the social e.g. He likes to help other people etc.

4) Self image means the reflection of how one sees himself e.g. leadership, expertise, or artist, etc.

5) Traits means the habits which would be permanent behavior e.g. clam, humble and sportsman.

6) Motives mean the drive within one’s self affecting one’s action e.g. the need for success then all the actions leads to success all the time.

#### **Participation Theory**

Having Working or giving opinion participation is essential and important for human resource nowadays yielding directly and positively increasing in subordinates’ performance which is good for executive’s commands. The executives have to listen to staffs opinion and to build staffs’ relationship. Staffs are going to feel they belong to the organization which ultimately leads to unlock their potential and invest their blood, sweat, and tears to the organization’s mission granting the outstanding outcome and excellent performance.

#### **Law Enforcement Theory**

Sir Robert Peel, namely “The father of modern police” founded London Metropolitan Police Department on 1859, emphasized the staffs to realize that preventing crime is more important than anything. Investigation, arresting, and punishment, in Peel’s

opinion, became the foundation of the concept of the using of law enforcement for prevent crimes. The main police's strategy to prevent crimes according to the law enforcement theory is patrolling which is the backbone of police task. The essence of this theory is the appearance of the officers has crime suppression effect because criminal will afraid of being caught. Therefore, patrol officers have to wear uniform, and the vehicle has to be easily spotted in order to intimidate those potential criminals. Other than that, regularly patrolling in such area makes community members feel like polices are everywhere. For this reason, according to law enforcement theory, the appearance of police officers and patrolling can prevent crimes, since they minimize the opportunity to commit crimes. In addition, patrolling could be routine job or special task. In terms of routine job, responsible areas are assigned to the patrol officers to prevent and suppress within their shift. In terms of special task, all of patrol officers in the area are standby and immediately present in the area after receive the order from headquarter.

### **Crime Triangle**

The Crime Triangle Theory can describe the cause or the factors of crime including:

- 1) Offender / Criminal means a person who has desire to commit crime.
- 2) Victim means person, place, or object on which is the target the criminal has the desire to take the action.
- 3) Opportunity means time and location which is suitable for committing a crime.

When the triangle is completed the crime occurs. The theory has presented the concept of crime solving or crime prevention by attempting to intercept the cycle before it completes or eliminating a side of the triangle.

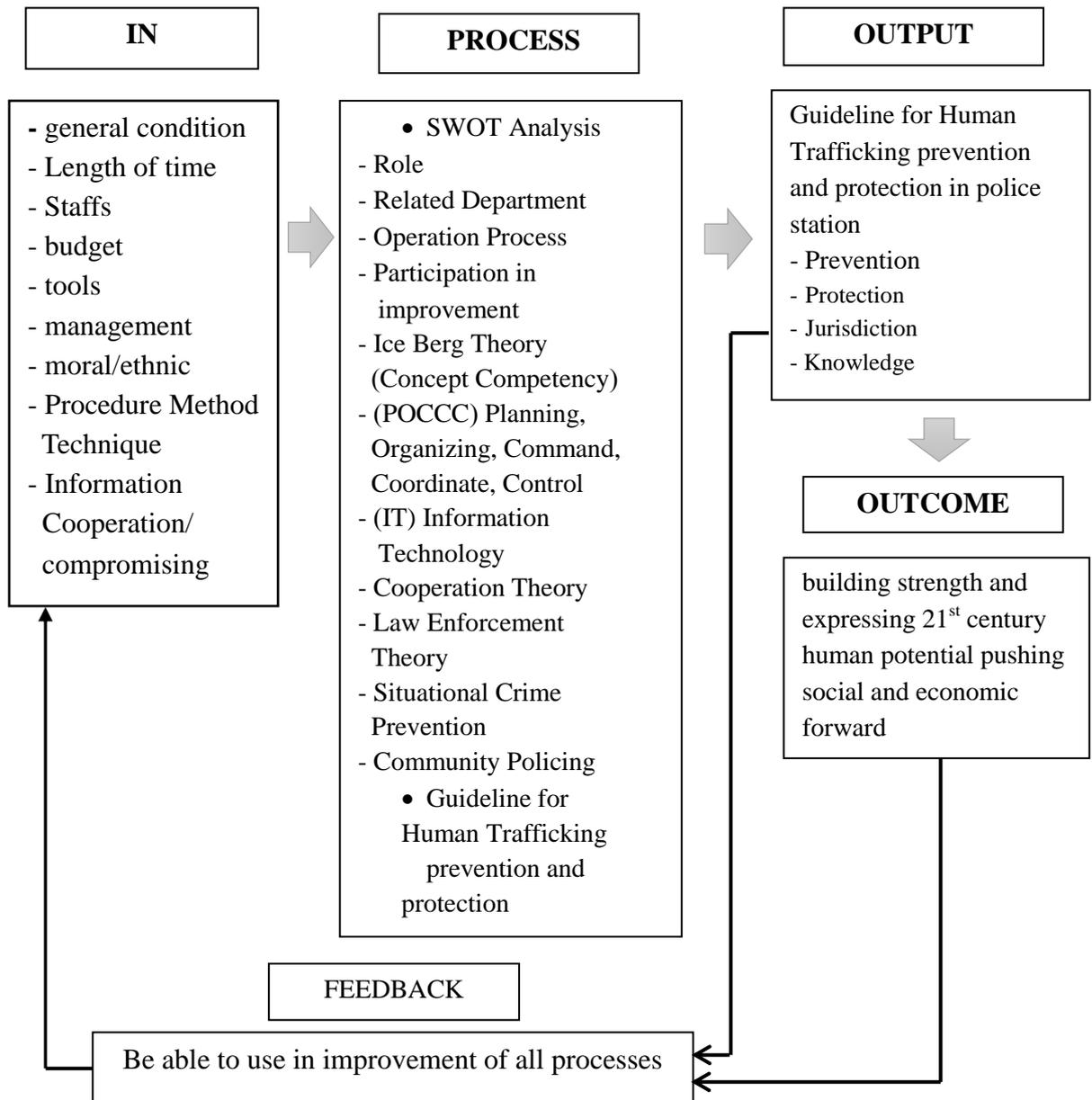
### **Situational Crime Prevention**

While Crime Triangle helps prevent cause or factors of crimes, Situational Crime Prevention can prevent crime according to these five concepts those are: 1) raising difficulty to commit crime to the criminal 2) raising the chance of the crime being detected 3) reducing reward for criminal 4) eliminating the excuses for committing crime 5) avoiding or reducing the motive

### **Community Policing**

Community policing is the new concept of the crime prevention. It believes that creative cooperation between police and community can solve crime related problems, feeling of fear, criminal threat, as well as social disorganization and social degradation. In order to achieve that, policing unit have to develop a good relationship with good men living in such community; and, let them have a chance to express their opinion, suggestion, and problems prioritization as well as improve the quality of the community in which they live. In the other words, the principle of community policing is the principle of the policing mission which promotes and supports the 'strike to the root of evil' in order to reduce the problem of criminals and community disorganization which require cooperation between police and community. The priority of problem will be selected by people living in the community.

## Research Framework



## Image Research Framework

### Literature reviews

### Human trafficking situation in Thailand

Thailand, according to Trafficking in Persons Report 2014, was ranked to be Tier 3 of the ranking which means Thailand did not fully follow the minimum requirement and has no attempt to follow the requirement. In the other words, Thailand is in the worst situation of human trafficking after has consecutively struggled in Tier 2 watch list for 4 years. From that cause, in June 2016, Thailand still ranked in Tier 3 country which is the group of the worst situation in human trafficking.

### The impact of human trafficking in Thailand

The downgrading in human trafficking situation from tier 2 to tier 3 has impacts on Thailand in 3 aspects, those are:

Firstly, the overall trading image between Thailand and US, especially on fishery products e.g. shrimps and tunas, ranking in tier 3 means US could use this as a loophole to boycott Thailand's products. The United State would consider to boycott Thailand within 90 days counting from the demoting date. If Thailand was boycotted, the result would highly affect frozen food industry and shrimp industry because US is the main target of shrimp export (40%) and tuna export (20%). Moreover, it would have psychological impact which competitors countries may exploit to discredit Thailand's trading industry.

Secondly, staying in bad situation in human trafficking will destroy Thailand's image on the world's stage which may negatively affect investment trending in Thailand as well as ceasing in helping on various aspects. Although the United States did not declare the boycott to tier 3 countries, the message has been spread and had negative impact on Thailand's image. Some foreign companies may now reconsider their investing policy in trafficking related industries in Thailand e.g. fishery industry. Other than that, Thailand may lose some other non-trading and non-humanity related helping from US as well as may be refused from other international organization e.g. IMF and World Bank, etc.

Lastly, It impacts national security and social problems. Thailand might be labeled as human trafficking country from other countries especially the United State; because, Thailand has three status of human trafficking including 1) the gateway country of trafficking 2) the channel of trafficking and 3) the trafficking site. In addition, human trafficking cartels mostly are criminals and have illegal work which are hard for police officers to suppress and control.

### **Human trafficking problem in Samutsakorn province**

From the alien labor hiring in Samutsakorn reported in January 2017, it was found that there are 291,731 workers who have work permit; mostly they are Myanmar 255,933 people (Samutsakorn Department of Employment, 2017) comparing to the data from June 30, 2016, there were 262,237 alien labors. From the speculation, it was found that there are legit labors more that illegal labors i.e. 144,590 legit labors (55.14%), and 117,647 illegal labors (44.68%). For Laos, Burmeses, and Cambodians, according to the parliament, 213,016 of them (200,001 Burmeses, 10,323 Cambodians, and 2,692 Laos; 93.87%, 4.85%, and 1.26% respectively) were temporarily allowed to work in Thailand.

### **Research Objectives**

1) To study the condition of the problem in human trafficking prevention and suppression tasks for provincial crime prevention and suppression officers in Samutsakorn and related public and private organizations.

2) To study supporting factors to enhance performance in human trafficking prevention and suppression for the officers in Samutsakorn metropolitan police station.

3) To find the guideline for counter human trafficking problems for prevention and suppression officers in Samutsakorn metropolitan police station.

### **Anticipated Benefits**

- 1) Thai Royal Police department acknowledges the problems of human trafficking prevention and suppression tasks of the officers in working with private organizations and police officers in the police station
- 2) Thai Royal Police department acknowledges the guideline for improving the effectiveness of human trafficking prevention and suppression tasks of the officers involved.
- 3) Police station has the guideline for executing human trafficking prevention and suppression tasks and its benefit could also expand to the other field.
- 4) Police station has the guideline for cooperation with related organizations.

### **2. Method**

Criteria for data givers are:

- 1) the officers who currently work in human trafficking prevention and suppression and/or
- 2) working in human trafficking prevention and suppression task for at least 5 years and
- 3) having experience in human trafficking prevention and suppression at least 5 years

The participants are consisted of Samutsakorn provincial and district officers (15 people), private organization staffs (3 people), and Samutsakorn police officers (30 people)

**Research Tool** is in-depth interviewing about:

- 1) The condition of problem of the Samutsakorn provincial and district police officers who work in the operation of human trafficking prevention and suppression and related private organization. The interview includes role/duty, operating process, related organizations, operation participation, the length of the operation, the cooperation of police officers, police officer's needs, and organization SWOT.
- 2) Samutsakorn metropolitan police officers' performance enhancing factors in operation of human trafficking prevention and suppression i.e. the readiness of 8M management, budget, tools, management, moral/ethnic, procedure, method, technic, information, cooperation/compromisation.
- 3) Guideline for human trafficking prevention and suppression operation for responsible officers i.e. staff empowerment, working cooperation, staffs management in the station, utilizing information technology (IT), crime prevention and suppression management (Law Enforcement Theory and Crime Triangle)

### **Data Collection**

- 1) Secondary Data is the collection of paper works which the researcher studies and collects from documents, academic books, official letter, journals, academic papers, thesis and research reports, related statistics, printed materials, and internet based resources.
- 2) Primary Data is the collection of fieldwork using person-to-person interviewing technique to related staffs. The researcher has sent letter for courtesy asking for their help, and made an appointment for interview giving them time for preparation.

### **Data Analysis**

The data analysis is from data collected from documents and interview following method, process, and objectives of the research. Utilizing literature review in chapter 2 also gives the meaningful analysis as well as grants rich and depth details of the phenomenon for us.

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# GUIDELINES FOR THE PROMOTION OF JOURNAL PUBLISHING OF LECTURERS OF FACULTY OF HUMANITIES AND SOCIAL SCIENCES, KHON KAEN UNIVERSITY

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## **Abstract**

*This study aims at analyzing the problems of journal publishing of lecturers and to analyze the needs of promotion of journal publishing of lecturers of Faculty of Humanities and Social Sciences in which samples of the study is the lecturers of Faculty of Humanities and Social Sciences. Research tools are data collection analyzing basic data by rating scale questionnaires; data analyzing by percentage, mean, and standard deviation. Research results are overall analyzing result of the problems of journal publishing is in average. ( $\bar{X} = 3.11$ ,  $S.D. = (0.97)$  Overall analyzing result of the needs of promotion of journal publishing is in high. ( $\bar{X} = 4.14$ ,  $S.D. = (0.89)$ )*

*In order to create the inspiration of working is to create the inspiration of working by meeting the needs of individuals appropriately; using positive and negative reinforcement to inspire individuals by setting goals with fairness and to involve and to be responsible for all activities.*

**Keywords:** *guidelines for the promotion, journal publishing, the problems of journal publishing*

## **1. Introduction**

Research and Community Services, Faculty of Humanities and Social Sciences have promoted the researchers to publish journals in many forms; for example, presenting journals in national and international academic conferences, publishing in verified national and international academic journals by concrete funding the publishing.

In the year 2014 - 2015, lecturers of Faculty of Humanities and Social Sciences have journals published and publicized a lot reflecting the interests of publishing of lecturers of Faculty of Humanities and Social Sciences. The research "Guidelines for the Promotion of Journal Publishing of Lecturers of Faculty of Humanities and Social Sciences, Khon Kaen University" will analyze the problems of publishing journals of lecturers to analyze the needs of promotion of journal publishing of lecturers of Faculty of Humanities and Social Sciences by data collection using questionnaires gathering from lecturers from each department.

Research results will be useful as information for enhancing the potential of journal publishing and to promote research studies of lecturers in Faculty of Humanities and Social Sciences and to promote publication of the journals.

## **2. Method**

This research uses survey research method.

### **2.1 Population and Samples**

Study samples are lecturers from Faculty of Humanities and Social Sciences, Khon Kaen University, academic year 2015 from 10 departments in total 94 persons.

### **2.2 Research tools**

Tools used for data collection are questionnaires including

Part 1 personal information including gender, age, degrees of education, academic position, research experiences, types of research project, journal publishing experiences, getting trained about writing articles to be published in national and international journals

Part 2 problems in publishing articles in journals

Part 3 needs of promotion of articles publishing in journals

Part 2,3 questionnaires using rating scale, mean interpretation using mean interpreting method as follows;

4.51 – 5.00	mean	very high
3.51 – 4.50	mean	high
2.51 – 3.50	mean	average
1.51 – 2.50	mean	low
1.00 – 1.50	mean	very low

### **2.3 Data Collection**

Documenting request forms for participation was sent to lecturers by specifying sent for 94 sheets in a period of December 2015- January 2016 and collected 1 more time in May 2016. When data collection completed, researchers analyzed data.

### **2.4 Data Analysis**

Using frequency, percentage, mean, standard deviation sets the order and groups the data to analyze and synthesize information.

## **3. Results**

Questionnaire answerers are mostly females 17 persons 54.85%, secondly are males 14 persons 45.15%. They are mostly at the age of 41-45 years old for 10 persons 32.26%, secondly are 36-40 years old for 9 persons 29.03%, thirdly 51 years old above for 5 persons 16.13%, fourthly 25-30 years old for 4 persons 12.90%, fifthly 31-35 years old for 3 persons 9.68%. They have the doctoral degree for 23 persons 74.19%, secondly is master degree for 6 persons 19.36%, and bachelor degree for 2 persons 6.45%.

Research experiences 1-5 articles is 64.52%, 6-10 articles 12.90%, 16 articles above 6.45%, 11-15 articles 3.23%, and have no research experience 12.90%. Types of research project mostly are for development 54.84%, secondly is research for evaluation 6.45%, thirdly is experimental research 3.23% and other aspects such as Humanities and Social Sciences knowledge survey, basic research for creating knowledge, languages and cultures, teaching and learning, information sciences and communication 35.48%.

They mostly never get trained for publication in national and international journal for 61.29% and get trained for 38.71% in which those who get trained in Khon Kaen University and from outsiders know the rules of promotions of journal publishing under faculty or university for 93.55% and don't know the rule for 6.45%.

Analyzing results of problems of journal publishing overall is in average. ( $\bar{X}$  = 3.11, S.D. = 0.97) found that;

**1. Personnel**, found that overall is high; teaching burden ( $\bar{X}$  = 4.16, S.D. = 0.78) average problem is lack of knowledge skills of foreign languages ( $\bar{X}$  = 3.39, S.D. = 0.92) limited factors of producing articles about journal publishing ( $\bar{X}$  = 3.13, S.D. = 0.96) lack of motivation in publishing ( $\bar{X}$  = 2.97, S.D. = 1.20) lack of advisors for writing research projects that have specific knowledge and efficiency ( $\bar{X}$  = 2.84, S.D. = 1.10) lack of information about source for journal publishing ( $\bar{X}$  = 2.77, S.D. = 1.02) lack of experiences in journal publishing ( $\bar{X}$  = 2.65, S.D. = 0.95) lack of knowledge and understanding of writing research project ( $\bar{X}$  = 2.58, S.D. = 0.85) and low level is don't know the steps and good practice in journal publication ( $\bar{X}$  = 2.45, S.D. = 1.03)

**2. Funding**, found that overall is high; lack of payment in abstract translation and translating journal into foreign language to publish in international journal ( $\bar{X}$  = 3.81, S.D. = 1.11) average level is university and faculty research fund is quite limited ( $\bar{X}$  = 3.48, S.D. = 1.06) Research investment is quite limited ( $\bar{X}$  = 3.39, S.D. = 0.99) and lack of knowledge in finding outside research fund ( $\bar{X}$  = 3.29, S.D. = 0.94)

**3. Publishing sources**, found that, overall is average; lack of public relations of publishing sources of each major to acknowledge lecturers ( $\bar{X}$  = 3.23, S.D. = 0.88) lack of knowledge of finding publishing sources in national and international database ( $\bar{X}$  = 2.94, S.D. = 0.89) and lack of knowledge in retrieving data for finding journal publishing source ( $\bar{X}$  = 2.74, S.D. = 1.18)

**4. Journals**, found that, overall is high; lack of skillful advisors in checking journal in English for lecturers in need of ( $\bar{X}$  = 3.61, S.D. = 0.95) average level is lack of atmosphere of exchanging, learning and improving research articles such as clinic for developing journals to publicize in international database ( $\bar{X}$  = 3.35, S.D. = 0.95) Some research articles can't be published in journals ( $\bar{X}$  = 2.74, S.D. = 0.89) Journals aren't interesting to the consideration for publishing from the sources ( $\bar{X}$  = 2.58, S.D. = 0.81)

Analyzing results of the needs of promotion for the publication of the articles in the journals, overall is high ( $\bar{X}$  = 4.14, S.D. = 0.89) found that

**1. Personnel**, found that overall is high, firstly is they are in need of translation services for manuscript before journal publishing ( $\bar{X}$ = 4.42, S.D. = 0.76). Secondly is that faculty should provide advisors for writing foreign language articles ( $\bar{X}$ = 4.10, S.D. = 0.91). Faculty should provide beginning advice for writing journal. ( $\bar{X}$ = 3.81, S.D. = 1.01) In addition, faculty should have committee to consider and evaluate articles to be sent for publishing in journals. ( $\bar{X}$ = 3.65, S.D. = 1.11)

**2. Funding**, found that overall is high. Firstly, they need sponsor fund for journal publishing (publication fee). ( $\bar{X}$ = 4.39, S.D. = 0.72) Secondly, there should not have limit or exceed for publication fee (exact amount spent) ( $\bar{X}$ = 4.32, S.D. = 0.94) and they are in need of money sponsorship in journal publishing (since start writing) ( $\bar{X}$ = 4.29, S.D. = 0.78)

**3. Publishing sources**, found that overall is high. Firstly, faculty should have public relations about publishing sources to lecturers in each department to know. ( $\bar{X}$ = 4.10, S.D. = 0.83) Secondly, they are in need to know techniques and how to search for journal publishing sources ( $\bar{X}$ = 3.90, S.D. = 1.04) and faculty should provide the training about finding publishing sources ( $\bar{X}$ = 3.87, S.D. = 0.92)

**4. Journals**, found that overall is high. Firstly, faculty should provide specialist advisors to check journals in English for those lecturers in need. ( $\bar{X}$ = 4.42, S.D. = 0.81) Secondly, faculty should have database and forms of writing of journals. ( $\bar{X}$ = 4.29, S.D. = 0.82) and faculty should create atmosphere of exchanging, learning and editing research articles such as clinic for improving journals to international database ( $\bar{X}$ = 4.23, S.D. = 0.88)

#### **4. Discussion and Conclusion**

Guidelines for the promotion of journal publishing of lecturers of Faculty of Humanities and Social Sciences, Khon Kaen University found that opinions on problems of journal publishing in 4 aspects which are **1) Personnel** is having teaching burden, not only teaching burden, but also directing board burden and a lot more. Therefore, they have fewer times to produce research. **2) Funding**, they lack of payment for abstract and articles translation into foreign language to be published in international journals because they have low language skills and assigned workload is a lot, thus they don't have time to produce academic articles. **3) Publishing sources**, they lack of knowledge in searching for publishing sources in national and international database, and there is no public relations about publishing sources of each department to the lecturers. Moreover, they lack of knowledge in retrieving data for finding publishing sources. **4) Journals**, they lack of specialist advisors to check articles in English for the lecturers in need. From the summary of research, it is found that the main problem is lacking good inspiration in academic production including atmosphere, rewards, the ratio of research and other jobs such as teaching, directing board, academic job. Moreover, it is found that there are opinions on the needs of promotion of journal publishing or journal publication in 4 aspects which are **1) Personnel**, they are in need of translation services for manuscript before sending to journal publishing. Faculty should provide advisors for foreign language journal writing. There should have beginning advice services for journal writing and should have

committee to consider and evaluate articles to be sent published in journals. There should provide names of the journals in database TCI, ISI, SCOPUS **2) Funding**, they are in need of money sponsorship for journal publishing (since the beginning of writing journal), fund for journal publishing (publication fee), there shouldn't have limit or exceeding for publication fee (exact amount paid), there should provide payment for abstract or articles translation to foreign language to promote international journal publishing; thus, there should be system for supporting publication, and there should support before publication not after getting published in which if there is a fee (publication fee) and if there is advance money, there should be able to disburse. **3) Publishing sources**, faculty should have public relations for sources to lecturers in each department, they want to know techniques and how to search for the publishing sources, and faculty should provide the training for searching for publishing sources, some publishing sources have complicated rules for publishing and there is a fee for publication in verified database. There should have information about journals in TCI database so that lecturers can choose the right source to publish according to quality indicators. **4) Journals**, faculty should provide specialist advisors to check articles in English for the lecturers in need. Faculty should also have database and forms of writing of journals, and faculty should create atmosphere of exchanging, learning and editing research articles such as clinic for improving journals to international database, there should be a grouping of researchers to create atmosphere of exchanging, learning and editing articles to serve the international standards of writing journals, there should be an authority for checking English journal for lecturers and researchers in need in order to produce international standard writing quality; there should provide advisors in faculty for lecturers to consult in which it is related to Motivation for Work: Theory and Application of Orapin Choochom (2012) stated that effective motivation for staff is art and science that managers can apply the theory of motivation to appropriately suit with persons and situations in department. Individuals have different motivation; needs of money and securities are important for works. Therefore, managers can raise money issues to motivate this group of staff. Meanwhile, the executive manager raises issues of success and compliments as motivation to keep staff work hard. Motivation can keep individuals and organizations active in practicing satisfying action. There are many types of motivation to be applied with individuals, situations, and chances; for example, to create motivation to serve the needs of individuals, positive or negative motivation for individuals, setting the goals and share the fairness, to be responsible for activities.

## **Recommendations**

### **1. Recommendations from the research**

- 1) Promote efficiency of journal publishing by training in action for researchers by providing advisors and coaches simultaneously.
- 2) Promote fund for publication, not just paid after getting published but should be sponsored and changing in system for the flow of disburse.
- 3) Provide motivation creator for produce and publish journals.

4) Promote language specialist either in Thai or foreign language to help correct language use in research articles.

5) Adjust the ratio of research job balancing with other kinds of jobs such as teaching, directing board, community service.

## **2. Further recommendations**

1) There should be a study of factors of success in journal publishing of Faculty of Humanities and Social Sciences, Khon Kaen University.

2) There should be a study of comparison of international journal publishing in a period of 5 years to investigate the tendency of publishing which are prominent and verified publishing sources.

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# COMMUNITY-BASED ECOTOURISM AT KADILANGU MANGROVE CONSERVATION: THE SOCIO-ECONOMIC DEVELOPMENT PERSPECTIVES

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## **Abstract**

*The conservation efforts by Kadilangu community have produced the enhancement of mangrove forest areas, however the utilization of mangrove forest by people around was limited. The conservation effort was analyzed descriptively based on Indonesia Government Rule Number 5 in 1990 and Number 32 in 2004. To make the conservation effort sustainable, it needs to develop community-based ecotourism (CBET) at Kadilangu mangrove forest, so as they can utilize mangrove forest benefits. Mangrove forests protect coastline by preventing abrasion, enrich coastal waters, support coastal fisheries, give additional benefits for biodiversity, and improve ecotourism industry. This research intended to study the conservation and ecotourism effort in Kadilangu Village and the community perception of both conservation and ecotourism toward sustainable socio-economic development. The data collection was undertaken through field visits and interviews using simple random sampling. In addition, to investigate the ecotourism potential at Kadilangu mangrove forest this research using components obtained from key informants interview which are divided into four parameters. In addition, to estimate of potential economic value of Kadilangu ecotourism mangrove forest with Travel Cost Method (TCM). The Six-Pack Training Pilot Project is a recommendation to solve the problem of CBET in Kadilangu. The results are supposed to give strategies on how running the efficient training to maintain sustainable management of CBET therefore conservation efforts as well as community's welfare improved significantly.*

**Keywords:** *community-based ecotourism (CBET), mangrove conservation, socio-economic, sustainable development* **JEL Classifications:** *Z32, F64, O20, Q01*

## **1. Introduction**

Ecotourism is one of the important industrial sectors and has great potential and opportunities to be improved. The government of Indonesia continues to develop the ecotourism as a part of tourism sector that will become the new engine in supporting national growth and sustainable development. Not only because this sector became one of the sources of income, but also World Tourism Organization data of 1994 said that, in the 21<sup>st</sup> century, tourism become one of the most important socio-economic activities and

become one of the largest export industries in the world. The growth of Indonesian tourism is very significant, the Ministry of Tourism and Indonesian Agency for Creative Economy (BEKRAF) stated that, tourism growth is higher than the overall growth of the Indonesian economy. The development of tourism in Indonesia is also increasing as the government of Indonesia is targeting the visit of 20 million tourists in 2020. To realize the target, the government is currently intensively promoting tourism in various countries, one of them in New Delhi, India in the World Festival (WCF) (Ministry of Tourism, 2017).

### ***1.1 Background***

The fundamental purpose of ecotourism is to conserve the environment, at the same time, to support poverty alleviation of the local people in line with the issue in Sustainable Development Goals (SDGs) namely “Green Economy”. Sustainable development has been the overall goal of the international community since 1992 in the UN Conference on Environment and Development (UNCED). The conference invited governments to develop national strategies for sustainable development, incorporating policy measures outlined in the Rio Declaration and Agenda 21. Despite the efforts of many governments around the world to implement such strategies as well as international cooperation to support national governments, there are continuing concerns over global economic and environmental developments in many countries addressing some issues related to global energy, food and financial crises, and is underlined by further warnings from global scientists that communities are in danger of breaking ecological limits. Thus, one of chapters in the guidebook to the green economy<sup>1</sup> is coherent with ecotourism in Indonesia, one of issue in guidebook entitled, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication* which is written by United Nations Environment Program (UNEP). The *green economy* is defined by UNEP as one that results in improvement of human *well-being* and *social equity*, while significantly reducing *environmental risks* and *ecological scarcities*.

### ***1.2 Objectives***

Based on green economy concept of SDGs, it is important to conduct the research that aim to enhance ecotourism in Indonesia to comply with the United Nation program. The first hypothesis is, although Kadilangu Sand Beach has produced the enhancement of mangrove forest areas, however, the utilization of mangrove forests is still limited. Therefore, it needs to develop community-based ecotourism (CBET) at Kadilangu mangrove forest, in order to obtain the benefit of mangrove forests optimally. Mangrove forests are not only useful because they produce wood, but also as a buffer for marine and terrestrial ecosystems (Davis and Johnson, 1987). One of the benefits of mangrove forest is to provide some food and nutrients for some marine animal species including those that

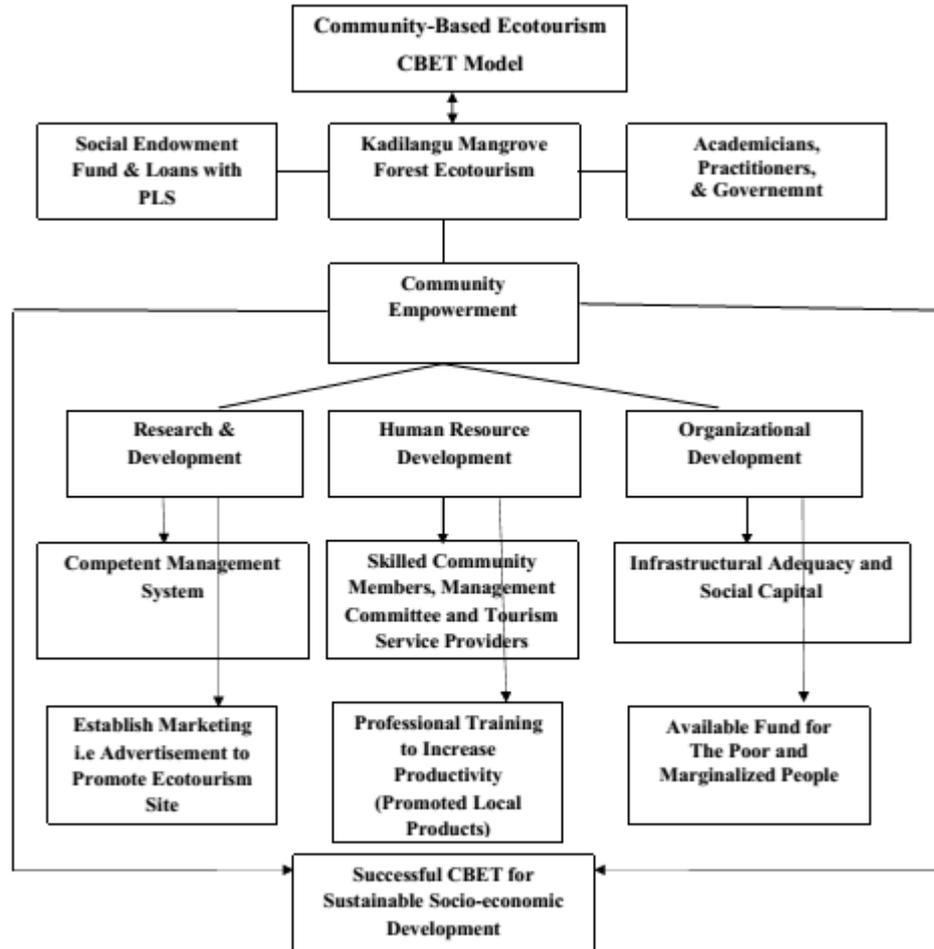
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<sup>1</sup> The term green economy was first coined in a pioneering 1989 report for the Government of the United Kingdom by a group of leading environmental economists, entitled *Blueprint for a Green Economy* (Pearce, Markandya and Barbier, 1989). The report was commissioned to advise the UK Government if there was a consensus definition to the term “sustainable development” and the implications of sustainable development for the measurement of economic progress and the appraisal of projects and policies

have important ecosystem meaning (Blackwell, 2007). Nutrient elements and large amounts of organic matter in these mangrove forests are mostly derived from the leaves of mangroves and organisms that have died and broken down by microorganisms (Bengen, 2001). The second hypothesis is, the managerial problem of CBET due to low skill of community.

### 1.3 Framework Analysis

Figure 1.1 Model of Community-Based Ecotourism (CBET) Kadilangu Mangrove Forest



Source: Author Estimation

### 1.4 Literature Review

#### 1.4.1 Community-Based Ecotourism (CBET)

Empowerment is the language, from the Indonesian derived from the word "power" which means strength, which means the effort to build a power possessed the poor by encouraging, motivating, and raise awareness about their potential and try to develop (Esack 2000). *Six Pack-Training (Product, Price, Place, Promotion, People and Process)* initiative is a pilot project that will be implemented in ecotourism sites by empowering local people. The project aims to build the capacities of local authorities and community members, to enable them to manage community-based ecotourism become more self-sufficient and sustainable.

There are activities during the first few months revolved around community mobilization and capacity-building for members of local ecotourism authorities and ecotourism service providers. This research aims to investigate some potential of CBET at Kadilangu to set up an ecotourism training program. Thus, from the result, ecotourism training able to address the need of CBET at Kadilangu, so that the training program may contributed to the improvement of quality service toward visitors both foreigner and domestic, enhancement of conservation effort as well as community's welfare by increasing trading activities surrounding mangrove forest to achieve sustainable socio-economic development in the mangrove forest area (Fadhilah, 2015).

#### *1.4.2 Tourism Elements*

According to Spillane (1987) there are five elements of tourism such as attraction, facilities, infrastructure, transportations and hospitality. According to Mathieson and Wall (1982), tourism demand is the total number of people who travel to use tourism facilities and services in a place far from where they live and where they work. The demand for tourism affects all sectors economy, including: individual (individual), Small Business Medium Enterprises, Private Companies, and Government Sectors (Sinclair and Stabler, 1997). The demand for tourism is also based on the budget shopping that people have, this is the core of demand tourism. Someone will consider to reduce the budget people have for a holiday interest.

## **2. Method**

### *2.1 Object of the Research*

The object of this study is visitors of mangrove forest tour at Kadilangu Beach located in Yogyakarta. The study is conducted at Kadilangu since this tourism site is quite new and potential to be developed. Besides this research is important since to investigate sustainable management in mangrove conservation.

### *2.2 Data*

The research is using quantitative method, where the data that is obtained is a number, then further analyzed in a data analysis. Data used in this research is primary data which is obtained directly from the source, they are, visitors of Kadilangu ecotourism and Kadilangu Community. In addition, this research also apply qualitative method to get details and further information to investigate on how substantial CBET contribution to mangrove forest ecotourism as well as conservation effort built in the ecotourism program by doing field observations and interviews to the key informant.

### *2.3 Sampling Technique*

The simple random sampling method is the sampling method is a sampling method that gives the same opportunity or opportunity for elements or members of the population to be selected to be randomly sampled. The method used by accidental sampling is technique sampling based on anyone who happens to meet with researchers and willing to be respondents in Kadilangu mangrove forest. Advantages of this sampling method is an easy sample selection procedure, moreover, misclassification can be avoided.

The minimum number of visits to Kadilangu mangrove forest during these 5 months is 1 times and a maximum number is 6 times. The lowest number of visits, 1-2 times at amount 87 respondents or 72.5% and the highest number of visits, 6 times at about 6 respondent or equal to 5%. Description of number of visits can be seen in the following table:

**Table 2.1 Number of Visits at Kadilangu Mangrove Forest**

<b>Number of Visits (Times)</b>	<b>Number of Respondents (People)</b>	<b>Percentage (%)</b>
1-2	87	72.5
3-4	27	22.5
5-6	6	0.5
Total	120	100%

The number of samples in this study using *Slovin formula* with the following calculation:

$$n = \frac{N}{1 + Nd^2}$$

Where,

n = Sample

N = Population

d = Standard deviation

Therefore, the amount of sample size, if d = 10% for visitors mangrove forest estimated as follow,

$$n = \frac{120}{1 + 120 (0.10)^2} = 54.54 \text{ or } 55 \text{ visitors}$$

Then, sample size is 55 visitors.

#### **2.4 Data Collection Technique**

The data collection techniques is using in this research differentiated into two techniques, they are as follow,

##### **2.4.1 Key Informant Interview**

It is a technique of data collection conducted by holding a verbal question and answer. The task was to identify potential community based ecotourism (CBET) sites in Sanden that might have been missed in the initial short listing. In the absence of relevant data, stakeholders were relied on as both key informants and key players in the implementation of ecotourism development activities. Key informant interviews, meetings and discussions with relevant stakeholders were a vital part of the study since there was insufficient or no publicly available information about community-based ecotourism in the ecotourism site. Each stakeholder was provided with the list of the components and parameters and asked to provide insights and give the score. The main objective of these discussions was to use the expertise of the team members to identify the sites with most potential and arrive at a number that would meet the project's financial and time constraints. Thereafter, the following list was finalized to conduct field visits.

#### 2.4.2 Field Visit

This research using open-ended observation, and then focusing on a particular behavior or group or event once they have a particular question, topic, or hypothesis. This method allows us to discover rather than simply test, thereby reasoning by induction rather than deduction. In addition, to provide a means for triangulation by testing data from observation against published research and what people say in interviews. Field visits may possible to observe interesting tours related to wildlife, biodiversity, bird watching, and more are gaining popularity in Kadilangu mangrove forest. Since in that area is host to several species of orchids and flowering plants, this niche segment is a potential target group if promoted effectively.

#### 2.4.3 Questionnaire

Data collection technique done by way provide some written questions that should be answered by the community (key players) as respondents. Questionnaire used in data collection is a questionnaire that includes profiles of respondents, respondents' responses to the questions posed related to each indicator of the research variable.

### 2.5 Operational Definition of Variables

Based on the findings of the pilot study in ecotourism site using key informants interview, a set of parameters was developed, then become the basis of the preliminary research for field visits. The parameters were divided into four major components, namely the program's objective, primary facilitators, secondary facilitators, and people,

#### 2.5.1 Objectives

The main objective of this project is to reduce threats to biodiversity, create alternative means of livelihood, and improve gender and social inclusion. Ecotourism is seen as just one of the ways to do it. Tourism is one of the fastest growing industries and can be a sustainable alternative to economic activities that would be damaging to biodiversity. Therefore, three major parameters were evaluated under this goal: biodiversity, livelihood, and gender and social inclusion. *The highest weight of 4 was given to this component as it determines where the project is most suitable and in line with the objective of the program.*

1. *Biodiversity*: The factors that were measured to score biodiversity were based on the availability of attractive, well-protected areas, wetland sites, important bird areas, the occurrence of endemic and rare charismatic species, and attractive geomorphic formations. If ecotourism site rich in biodiversity then it would be scoring high, because conservation is key to protecting the sites from potential threats. Tourists are also attracted by natural landscapes that harbor significant biodiversity.

2. *Livelihood*: The landscapes of ecotourism site were evaluated on the basis of various sources of livelihood, for example, agriculture, trade and industry, and dairy farming. Ecotourism site with no alternative means of livelihood were given a higher score as the project is aimed at venturing into areas without alternative sources of income. Ecotourism can be a key source of income and employment for local communities, which in turn provides strong incentives to protect biodiversity.

3. *Gender and Social Inclusion*: To evaluate this parameter this study used gender and social status equality in ecotourism participations. These were taken to score the ecotourism site under this parameter. Ecotourism site with a low score would be rated higher, that means that this factor need to be improved since the ecotourism training project aims to foster social inclusion, gender balance, and empowerment of vulnerable groups in the region.

#### 2.5.2 Primary Facilitators

Includes those factors that facilitate the development of a tourist destination. These are attractions that will drive tourists to visit these destinations. Without these it will not be able to package an attractive destination.

1. *Geological Attractiveness*: geomorphic formations and features, mountain views, famous lakes and rivers, waterfalls, and historical sites were considered while scoring the ecotourism site.

2. *Flora & Fauna*: Ecotourism site was reviewed based on their level of flora and fauna, with districts with greater flora and fauna being rated higher.

3. *Cultural Heritage*: historical sites, religious sites, and ethnic cultural prominence. Ecotourism site is scoring under culture heritage. The more ecotourism has cultural heritage, the higher score achieved.

4. *Existing Tourism Destination*: Districts were reviewed and scored on the basis of available tourism destinations and their ability to attract tourists. Ecotourism with these features were scored higher.

5. *Potential for Clustering*: in question were analyzed to see if a possible group or cluster could be made by combining destinations that would provide a varied and holistic range of tourist attractions. Ecotourism site that could be grouped with other such ecotourism or tourism destinations in the vicinity was scored higher.

#### 2.5.3 Secondary Facilitators

Secondary facilitators are those that will enable tourism activities to be conducted. As a result of Kadilangu geographical terrain there are many places that have huge tourism potential but are not easily accessible. Also due to the lack of infrastructural adequacy these areas have not been able to cash in on the tourism potential supported by their rich natural and cultural resources.

1. *Accessibility*: in order to measure accessibility, the availability of airports and road connections were considered. To assess the accessibility, the existing road density in each of the districts was evaluated.

2. *Infrastructural Adequacy*: In order to measure infrastructural adequacy, the availability of facilities such as drinking water, electricity, and sanitation were considered. Ecotourism site with a greater availability of these features was given a higher score.

#### 2.5.4 People

Is the willingness and ability of the people to engage in tourism activities, the parameters, are:

1. *Demography*: The demographic profile of the districts was measured using the formula given below. The lower the literacy level of the district, the greater the score as there is a lower chance of migration. For this criteria, the bigger the household, the greater the score given. This is because there is a greater chance that these households have just one source of income from traditional means, which is unlikely to sustain their entire household.

2. *Migration Pressure*: The lower the migration rate, the higher the score, as it is essential to provide opportunities for people to prevent outmigration.

## 2.6 Method of Analysis

The methods of analysis of this research as follow,

**2.6.1 Descriptive Analysis: to investigate the potential of Kadilangu ecotourism site is represented in parameters that are grouped into four parameters.**

### 2.6.2 Economic Value: Travel Cost Method (TCM)

In this study, the economic value of mangrove forest Kadilangu using the method of travel expenses (travel cost method). The basic concept of the travel cost method (TCM) is time and cost trips that must be paid by the visitors to visit the sights (Djijono, 2002). The cost method of travel using multiple approaches (Gravitiani, 2008).

## 3. Results

The parameters were divided into four major components, namely the program's objective, primary facilitators, secondary facilitators, and people, as shown in the table 1 below. All of the aforementioned parameters were rated on scale of 1 to 4. The four sets of parameters were weighted from 1 to 4, with 4 being the most important parameter and 1 is the least important.

**Table 3.1 Components and Parameters for Ecotourism Site**

Objectives	Primary Facilitators	Secondary Facilitators	People
Biodiversity	Geological Attractiveness	Accessibility	Demography
Livelihood	Flora & Fauna	Infrastructural Adequacy	Migration Pressures
Gender & Social Inclusion	Cultural Heritage		
	Existing Tourism Destinations		
	Scope for Clustering		
<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>

Table 1 shows components and parameters for ecotourism site. Since the objective of this assignment was to conserve biodiversity, increase livelihood options, and promote gender and social inclusion, this parameter was given the highest weight. Factors that facilitate the development of a tourism destination, such as the geological attractiveness, flora and fauna, and cultural heritage were deemed primary facilitators. This set was assigned a weight of 3. The next set of parameters included accessibility to and within the district and infrastructural adequacy. Although important for the development of a tourism

site, these are regarded as secondary facilitators, which is why these were assigned a weight of 2. The last parameter was the willingness and ability of the people to engage in tourism activities. Migratory pressure in the regions was also assessed under this parameter. This parameter was assigned a weight of 1. All of these parameters were assessed through desk review and interviews with related personnel as field visits to all places was not feasible. Keeping in mind the scores from the aforementioned parameters, and the level of existing tourism activities, **this ecotourism site was identified as having strong potential.**

**Table 3.2 Number of Respondents, Number of Population, Number of Visits/1000 Population by District/City**

District/City	Number of Respondents	Number of Population	Number of Visits/1000 People
<b>Kulon Progo</b>	40	388,869	0.102
<b>Yogyakarta</b>	23	388,627	0.059
<b>Bantul</b>	18	911,503	0.019
<b>Sleman</b>	13	1,093,110	0.011
<b>Purworejo</b>	26	705,483	0.036

*Source: Author Estimation*

**Table 3.3 Average the Components of Travel Cost from District/City (Rupiah)**

District/City	Transportation Cost	Consumption Cost	Entry Ticket Cost	Parking Cost	Total
<b>Kulon Progo</b>	407,000	388,000	120,000	60,000	977,000
<b>Yogyakarta</b>	870,000	607,000	92,000	64,000	1,633,000
<b>Bantul</b>	410,000	371,000	72,000	39,000	892,000
<b>Sleman</b>	640,000	372,000	52,000	41,000	1,105,000
<b>Purworejo</b>	785,000	422,000	68,000	68,000	1,375,000

*Source: Author Estimation*

From Table 5.2 above it can be seen that, the highest average travel cost incurred by the respondent comes from Yogyakarta Regency is Rp 1.633.000,00 while the cost the lowest average travels issued by the respondents comes from Bantul regency of Rp892.000,00. Assessment of potential economic value of Kadilangu ecotourism mangrove forest with travel cost approach per 1,000 population in district/city in Kulon Progo area by calculating the cost the average travels issued by the respective respondents district /city multiplied by the population. For more details can be seen in the following formula:

$$Total Value = \frac{Average Value \times Number of Population}{1000} + \dots$$

To see more clearly the calculation of economic value of Kadilangu ecotourism mangrove forest can be seen in the following table:

**Table 3.4 Estimation of Economic Value Ecotourism Kadilangu Mangrove Forest/1000 Population by District/City (Rupiah)**

<b>District/City</b>	<b>Average Travel Cost (Rupiah)</b>	<b>Number of Population (People)</b>	<b>Total Value Rupiah/Tahun/1000 People</b>
<b>Kulon Progo</b>	977,000	388,869	379,925,013
<b>Yogyakarta</b>	1,633,000	388,627	634,627,891
<b>Bantul</b>	892,000	911,503	813,060,679
<b>Sleman</b>	1,105,000	1,093,110	1,207,886,550
<b>Purworejo</b>	1,375,000	705,483	970,039,125

*Source: Author Estimation*

Based on the estimation of Table 3.4, the value is known economic attractions of Kadilangu ecotourism mangrove forest with the travel cost approach from each district / city per 1,000 the largest population per 5 months (June-October 2017) is Sleman District at amount Rp. 1,207,886,550.

#### **4. Discussion and Conclusion**

Mangrove ecotourism is a concept maritime economy based economic empowerment that is planning to build and develop through the utilization of endowment fund. The initial stage of the first step is to observe the potential mangrove resource of coastal area in Kadilangu by field visits and interviews toward key informants since there is not enough information and some information is not open for public. Mangrove ecotourism conservation that is initiated by coastal communities through training and education given by *Six-Pack Training Program (Product, Price, Place, Promotion, People and Process)*.

From the three pilot site study it can be learned that the following criteria are necessary to ensure a successful CBET site: [1] Competent management is needed to keep the community motivated. [2] Committee representation of marginalized community groups must be ensured to provide inclusivity, and also governing agencies and active NGOs in that area should be represented to ensure a more transparent working system. [3] Marketing activities need to be competitive, and ways to distinguish products must be explored [4] Trainings provided must be profitable with market linkages for the products made after such trainings including natural conservation training. [5] Local produce such as snacks and drinks should be promoted, and the import of packaged items should be reduced to retain as much tourism income within the community as possible. [6] A separate fund for the poor and marginalized groups should be created from which they can take loans at minimal interest to be able to engage in tourism activities. Based on the findings of the pilot site study, a set of parameters was relevant to be developed and applied to other ecotourism site surrounding Kadilangu mangrove forest, then would form the basis of the next preliminary site selection for field visits.

The integration of social endowment fund and mangrove ecotourism conservation to financial and financing access for the poor and marginalized groups should be created from which they can take loans at a justice margin using profit-loss sharing (PLS) system, therefore to be able to engage in tourism activities. Social endowment fund is a solution

towards socio-economic development of coastal society. The integration of social endowment fund and mangrove ecotourism conservation must involve the roles of academicians, practitioners, Ministry of Fisheries, Ministry of Tourism, Ministry of Creative Economy and local people in order to make mangrove ecotourism conservation in Kadilangu could benefit toward coastal society optimally.

This research give some recommendations as Kadilangu community have to do some steps to make sustainable conservation effort to promote sustainable socio-economic development in Kadilangu, such as, [1] Improving management systems community-based ecotourism (CBET) in Kadilangu, [2] Increasing capacities of members of the community-based ecotourism, management committee and tourism service providers of both CBET sites, [3] Establishing strong advertising/marketing mechanisms of CBET site using powerful promotion strategy, [4] Enhancing mechanism for preservation of natural resources, especially the mangrove forest conservation, [5] Renovating tourism facilities at CBET site accompanied by adequate ecotourism infrastructure, [6] Social endowment fund with profit-loss sharing for social need, both financial and financing.

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# FACTORS ASSOCIATED TO HAPPINESS OF THE INTERNATIONAL MIGRANT HOUSEHOLDS IN RURAL NORTHEASTERN THAILAND

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## Abstract

*This article aims to examine factors associated with the happiness of the northeastern rural households that have international migrant laborers. The quantitative research method was implemented in the study, and the household level was presented as unit of analysis. The 334 sample households were systematic random from the population in four Sub-district of Phu Kiew District in Chaiyaphum Province, where is the province with the second highest number of international migrant in Thailand. Data collection was conducted in July, 2017 by interview schedule. The analysis of data was based on descriptive statistics and correlation analysis. The results found that two main factors that have associated with the happiness of the international migrant household included household characteristics and migrant characteristics. All household characteristics, composed of the number of household members, the number of labour in household, and the annual income of household, had positively associated with happiness of the international migrant household at level of significant 0.01. Migrant characteristics included remittance had positively associated with happiness of the international migrant household, while migration expenses presented a negative association with happiness of the international migrant household at level of significant 0.05*

**Keywords:** Happiness, Migration households, International migration, Household who left behind.

## 1. Introduction

Migration to work abroad is beneficial to households in the origin area due to the remittances they received. However, households at origin area have faced with a labor shortage in household agricultural activity, and they face with pressures from many causes during their household members are working abroad. Migration has been considered as one of livelihood strategies among rural people in northeastern region of Thailand (Ayuwat, 2006), but it provides numbers of impact, both positively and negatively, to household at place of origin and labor themselves.

The migration Impacts mostly relate to working condition and lifestyle at the destination country (Ayuwat, Im-emtham and Teerawisit, 2010). If the labors have negative experiences in working or living, the chance of failure is high, and households at place of origin are unavoidably hit by those negative impacts. It can be seen that behaviors of migrant labours, in terms of living and working conditions, provide impacts to labour's households, since they have to leave the households to work abroad for 3-5 years depending on the employment contract (Attorney General's Office, 2014). Therefore, the success of migrant labours results in an improvement of socio-economic status of the households at place of origin. Meanwhile, households are facing with labor shortage circumstance in order to help household production activity. The households have to adjust themselves to deal against several problems. For instance, work allocation within the household, or managing of the debt, which caused by migration expenses. (Ayuwat and Chamarattana, 2014).

In addition, the households have to deal with mental condition, social environment, and livelihoods. These conditions inseparably relate to the happiness of migrant labour households at place of origin. Therefore, it is important to understand the factors associated with happiness of the the international migrant households in order to empower and construct guidelines of promoting the happiness among migrant labour households in specific characteristics.

## **2. Research Objectives**

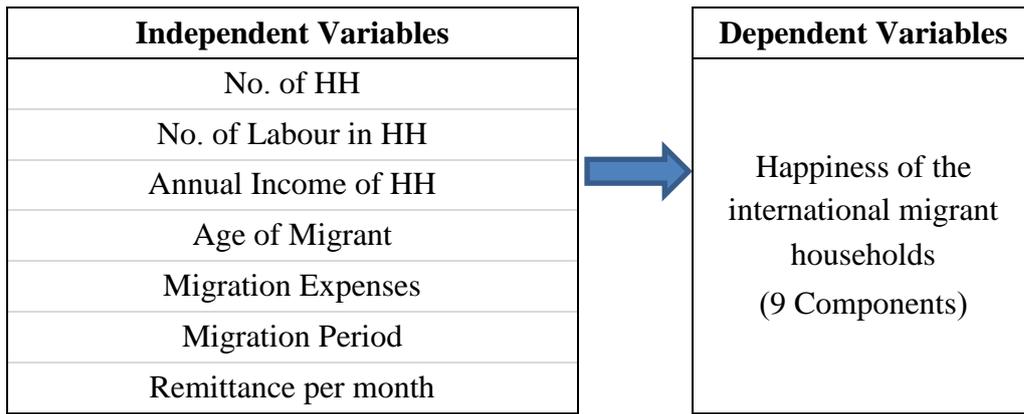
To examine factors associated with the happiness of the international migrant household in rural northeastern Thailand.

## **3. Literature reviews**

Concepts of happiness has been applied to the study. Details of concepts are follows.

**Concepts of Happiness:** "happiness" is a term that has been defined by various agencies, such as Department of Mental Health, Ministry of Public Health, Thailand (2007). Happiness denotes the living condition with good things. It also is a happy circumstance which caused by ability of living problem management and ability to improve quality of life mentally and physically based on the changes of social and environmental conditions. In addition, the Thai Health Organization. (2007) has determined 8 indicators of happiness including (1) happy body, (2) happy heart, (3) happy relax, (4) happy brain, (5) happy soul, (6) happy money, (7) happy family, and (8) happy society. This paper applies a concept of happiness (Thai Health Organization, 2007) to study the happiness of labor migrant households.

The study defines the household happiness as a circumstance that household members, including migrant labours, have good relationships to each other, financial security, well debt management, well stress management, healthy condition among household members, and good relationships with neighbors, life and property security, and convenient life from household facilities. These terms are derived from the qualitative findings which investigate perspectives of the migrant labour households toward the happiness. A conceptual framework is constructed as in figure 1.



**Figure 1: A conceptual framework**

#### **4. Research Methodology**

The research used the quantitative methodology. Samples of the research were random by systematic sampling technique from the households engaging in international migrants within a year in Chaiyaphum Province - the Provinces in the region with the highest international migrant of 334 households. The research instrument, the interview schedule, was reliable at 0.913 levels.

The dependent variables was of happiness of migrant labour households, which were measured by interval scale. While independent variables consisted of number of households, number of labour households, annual income of household, age of migrant, migration expenses, migration period, remittance per month. These variables were measured by interval scale and ratio scale.

Data collection was done in June, 2017 with the migrant labour households. Pearson Correlation Analysis was applied to study factor related to happiness of migrant labour households. Data was presented by the description with tables.

#### **5. Results**

The results will be presented cover the characteristics of the migrant labour households and migrant labours, level of the happiness of the migrant labour households, and factor associated with the level of the happiness of migrant labour household as following details.

##### ***5.1. Characteristics of the international migrant household***

Characteristics of migrant labour households indicated that most households had number of households not over 3 members (47.6 percent). 79.6 percent of households had members who were at labor age (15-59 years old), and 16.5 percent of households had no member who were at labor age. 45.2 percent of household was the extended household which 3 generations of household members have lived together, and 20.1% of household was the skipped-generation household which consisted of grandparents and grandchildren, while parents of children were working abroad. This output was confirmed by Narongchai and Ayuwat (2011). 37.4 percent of household had male household head, and migrant

labours were male. It is noted that 12.6 percent of household was household with female household head, and migrant labours were female. 60.2 percent of household engaged in agriculture, and 41.0 percent of household had average annual income over 150,000 Thai Baht (USD 4,545). More than half of sample household (56.8 percent) had the average annual income less than 20,000 Thai Baht (USD606). Regarding the remittance, most households had low level of investment (45.8 percent). It was found that those households used the remittance to invest in education of children and bought household facilities (53.6 percent and 37.1 percent respectively). However, households had never invested in stocking land as household asset, and never bought land for engaging agriculture (87.1 percent and 79.0 percent respectively).

### ***5.2. Characteristics of the international migrant***

Regarding characteristics of migrant labours, data was explored by household member at place of origin. It was found that the majority of migrant labours was male (68.9 percent), and 61.4 percent of them were Generation Y (under 37 years old). Most of migrant labours have migrated to work abroad for 1-5 years (62.2 percent). Most of migrant labours have worked in Southeast Asia and East Asia countries, such as South Korea, Taiwan (73.2 percent). Most of migrant labours used employment service through private recruitment company or labor brokers (39.8 percent), while 24.3 percent of them used service from state agencies such as the Department of Employment, and 17.1 percent of them went directly to abroad legally. However, it was found 14.7 percent of migrants migrated to work illegally. Regarding financial source for migration, a major financial source was household savings (37.7 percent) and informal loans (26.3 percent) respectively. The findings confirm Ayuwat and Chamaratana (2014) who reported that some migrant labours had to make a loan for travelling expenses. In addition, 56.2 percent of migrant labours engaged in industrial tasks, and followed by agricultural task (24.9 percent).

### ***5.3. Happiness of the international migrant household***

The analysis also found that percentage of the average happiness among the international migrant households was 80.5. More than half of the household sample assessed their households had the happiness at a medium level, and only 31.7 percent of them assessed their happiness at a high level. While 17.7 percent of them assessed their happiness at a low level. Comparing to each dimensions of happiness, it was found that percentage of mean of social assistance and responsibility was 89.0 percent and 85.8 percent respectively, but financial security and relaxation were only 67.5 percent and 65.7 percent respectively.

### ***5.4. Factor associated with happiness of the international migrant household***

The results found that household characteristics including the number of household member, the number of labour in household, annual income of household and migrant characteristics including remittance per month had positively associated with happiness of international migrant household at level of significant 0.01, and the correlation coefficients were 0.194, 0.202, 0.174, and 0.201 respectively. This finding supported a study of

Katewongsa et al (2017). Moreover, migration expenses had negatively associated with happiness of international migrant household at level of significant 0.01, and the correlation coefficients was 0.124. Level of happiness among international migrant household that had high migration expenses was decreasing because the households had to make a loan from financial sources to support their migrants, and they had to repay a debt for a long period (Ayuwat & Chamarattana, 2014). This circumstance might be a cause of low happiness among international migrant household.

This result supported Layard (2005), who suggested that factors of household characteristics and economics had associated with happiness of household members. Due to the fact that the household with more labour aged-members would have more workforces in household activity, and associated with ability of producing the household income, which was considered as economic factor. In addition, remittances from international migrants were able to sustain the livings among households at places of origin.

The results also indicated that age of migrant and migration period had negatively associated with the number of labour in household at level of significant 0.05, since the international migrants who had worked abroad for a long time would result in a lack of workforce within household. Moreover, the long-stayed international migrants would tend to persuade their household members to work abroad (Katewongsa, et al., 2016). In addition, it was found that remittance had positively associated with annual income of household at level of significant 0.01. Those two findings, therefore, had positively associated with happiness of international migrant household (Arvin, and Lew, 2002). Lastly, migration period also had positively associated with age of migrant at level of significant 0.05 (Table 1)

**Table 1. Correlation coefficient between variables studied.**

	No. of HH	No. of Labour in HH	Annual Income of HH	Age of Migrant	Migration Expenses	Migration Period	Remittance per month	Overall Happiness
No. of HH	1.000							
No. of Labour in HH	0.664 **	1.000						
Annual Income of HH	0.105	0.107	1.000					
Age of Migrant	-0.101	-0.119 *	-0.113	1.000				
Migration Expenses	-0.069	-0.038	-0.057	-0.018	1.000			
Migration Period	-0.070	-0.108 *	-0.047	0.165 **	0.028	1.000		
Remittance per month	-0.005	-0.038	0.169 **	-0.002	-0.041	-0.063	1.000	
Overall Happiness	0.194 **	0.202 **	0.174 **	0.042	-0.124 *	-0.013	0.201 **	1.000

Remark: \*\*, \* Level of Significant 0.01 and 0.05

## 6. Conclusion and recommendation

The results concludes that factors of household characteristics and migrant characteristics both have associated with happiness of the international migrant household. Factors of household characteristics compose of the number of household member, the number of labour in household, annual income of household, while factors of migrant characteristics compose of remittance per month and migration expenses.

According to the results, therefore, research recommendation indicates that happiness of the international migrant household has associated with factors at household level and individual level of labor. If the migrants put more investment on migration, it results in a pressure among their households at places of origin, and the happiness of household finally increases. Therefore, a mechanism of reducing expenses of international migration should be developed in order to create sustainable happiness among the international migrant household.

## 7. Acknowledgements

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# THE INTEGRATION OF SOCIAL FINANCE AND ECOTOURISM MINAPOLITY TO EMPOWER THE COASTAL SOCIETY

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## **Abstract**

*The integration of social finance and ecotourism minapolity is a concept of maritime economy based on society empowerment which is developed through social finance utilization. Conducting a training of 3E (Education, Environment, and Entrepreneur), this research aims to promote sustainable socio-economic development and conservation effort in Pandansari, Yogyakarta. Therefore, the society is able to manage marine resources, such as establishing maritime technology as well as fishery management. This research consists of several steps. The first is, to observe the potential marine resource of coastal area. The second is, to conduct SWOT and Fishbone analysis. The last is, to formulate the strategy to develop the ecotourism minapolity combine with social crowdfunding for fish farmers. This research taken information through interviews and observations of the coastal society in Pandansari. The methodology of this study is presented in descriptive technique and supported by some relevant literatures.*

**Keywords:** *social finance, ecotourism minapolity, social crowdfunding, community empowerment*

**JEL Classifications:** *Z33; Z32; Q01*

## **1. Introduction**

Indonesia is the largest archipelago in the world, with 17.504 islands and the second longest coastline in the world. Marine potential of Indonesia can be categorized into four groups of maritime resources, such as renewable resources, non-renewable resources, OTEC (Ocean Thermal Energy Conversion) and environmental services. However, local people in coastal area are unable to benefit maritime resources well. Therefore, local people need help to assist them on how to manage their resource efficiently. Moreover, local people do not have enough money to finance their economic activities to exploit their marine resources. Hence, it is necessary to have the integration of cash crowdfunding and ecotourism minapolity to empower coastal society. Ecotourism minapolity is a concept of maritime economy based on economic society empowerment which is built and developed through cash crowdfunding utilization.

One of the coastal areas that have potential in the socio-economic for community development is Pandansari Beach which is located in Gadingsari Village, Yogyakarta. However, the problem that is happened in Pandansari is, the ecotourism program which have been developed so far, did not run properly. This problem is happened due to the lack of technology, consequently, the utilization and exploration of natural resources is minimum. In addition, the access from city center to the coastal area Pandansari also limited, for example inadequate public transportation as well as infrastructure. Furthermore, tourism destination is concentrated only in Parangtritis and Depok Beach, because those beaches already well known.

To promote ecotourism in Pandansari, one of the hypotheses is that, marketing strategy for ecotourism in Pandansari is weak. At the same time, the involvement of community in ecotourism minapolity Pandansari is also limited. Therefore, if the integration of cash crowdfunding and community-based minapolity ecotourism by empowering local people is one of solutions for ecotourism's problem in Pandansari. The integration concept of ecotourism minapolity may arrange the harmonization between socio-economic potential and community-based services in Pandansari. As a result, the purpose of ecotourism minapolity to improve the welfare of society, at the same time to preserve natural and cultural resource. Another hypothesis of the research is about managerial problem, which is neglected by most of people.

Based on research hypotheses, ecotourism minapolity need a concept of a well-design socio-economic empowerment of coastal community in Pandansari. To support the ecotourism, on the one hand, the society has to be well-educated, skilled and equipped with modern technology. On the other hand, the ecotourism program has to be well financed. Cash crowdfunding as one of transaction contract in Islamic economics become alternative solution to the ecotourism's financing. Unfortunately, there is less attention towards cash crowdfunding management even though its potential is very promising. This make clear to highlight that, it is necessary to have a professional management through the integration of cash crowdfunding and ecotourism minapolity for economic empowerment of coastal community in Pandansari.

### ***1.1 Ecotourism***

Ecotourism has many definitions entirely principled on tourism and activities refers to the five essential elements, a) Provide experience and education to tourists to increase understanding and appreciation of the tourist destination visited. Education is provided through an understanding of the importance of preserving the environment, while the experience is given through the activities of creative travel accompanied with excellent service; b) Minimize the negative impacts that could damage the environment and cultural characteristics of the regions visited; c) Involve the community in the management and implementation; d) Provide economic benefits, especially to local communities, for the ecotourism activities should be profit (benefit); e) To continue to survive and sustainable (Department of Tourism and Culture Nias, 2009).

### ***1.2 The Principle Ecotourism***

Damanik (2006) comprises the principles of ecotourism into 6 principles, they are, 1) Reducing the negative influence such as environmental damage due to pollution and traditional culture damage due to tourist's activities; 2) Build awareness and appreciation for the environment and cultural tourist destinations; 3) Offers a positive experience for both tourists and local communities through cultural contacts; 4) Provide direct financial benefits for conservation purposes through contributions or extra spending visitors; 4) Provide financial benefits and empowering the local communities by creating tourism products that promote local benefits; 5) Increase sensitivity to the social, environmental, political and tourist destination; 6) Respect for human rights and labor agreements in giving freedom to the tourists and local people to enjoy the sights seeing as a form of human rights, and subject to the rules of the game are fair and agreed upon in the execution of transactions of travel.

### ***1.3 Minapolity***

Minapolity is a model of the blue revolution encouraged the Ministry of Maritime Affairs and Fisheries of the Republic of Indonesia to change their mindset oriented development of land to the maritime-oriented. Minapolity is a town that grows and develops due to the fishing operation systems and fishing effort be able to serve, encourage, and attract economic development activities surrounding areas. Cities of minapolity area such as, fishing town can be a medium-sized city, town, city districts, and rural town that serves as the center of economic growth is improving the development of the countryside and the surrounding area. While minapolity area is the area of marine and fishery-based economy consisting centers of production and trade, services, housing, and other activities that are interrelated.

### ***1.4 The Concept and Potential of Cash Crowdfunding from Social Finance***

Waqf etymology is resist. Crowdfunding is the word that shaped sources of the expression as crowdfunding which basically means hold anything. Thus, the notion of crowdfunding in the language is to hand over land for poor people to be detained. Thus interpreted as property held and detained others, like holding livestock, soil, and everything (Al Kabisi, 1977). Meanwhile, according to Act Number 401 of 2004 on crowdfunding, endowments defined by legal act waqif to separate and submit wealth her possessions to be used forever for a certain period of time or in accordance with their interests for purposes of worship and general well-being according to *Shari'ah*, knows as Islamic Law. Crowdfunding for ecotourism's endowment in line with philanthropy motive stated in the Holy book of Muslim. This concept similar to the concept of endowment fund that finance the maintenance of Harvard University in USA and University of Oxford in UK.

Al-Qur'an there are several verses which are based as the foundation endowments command. *"You never come to virtue (perfect), before you spend most of that which ye love. And whatever you spend, Allah knows "*. (the Qur'ān, Ali Imrān: verse 92).

Meanwhile, there are four pillars endowments that must be met in endowments. First, people who doing charity in the form of *waqf*. Second, objects crowdfunding. Third, those who received the benefit of crowdfunding (al-mauquf 'alaih). Fourth, lafadz or pledge crowdfunding (sighah). In Act Number 41 of 2004, there are two additional things that have to be met: crowdfunding property allotment and term endowments. In order to achieve the objectives and functions of endowments, according to Act Number 41 of 2004 concerning crowdfunding, crowdfunding property invested reserved only for five kinds of things, namely: asarana and religious activities; b) the means and education and health; c) assistance to the poor, abandoned children, orphans, scholarships; d) progress and economic improvement of the people, and e) other public welfare advances that are not contrary to the *Shari'ah* and legislation. Many Islamic banks and institutions issues crowdfunding various products endowments collected from communities. For example a cash crowdfunding Muamalat, Indonesia Waqf Deposits (Tabung Wakaf Indonesia) is launched by Dompot Dhuafa Republika, and a cash crowdfunding is issued by Pos Keadilan Peduli Umat.

This kind of crowdfunding to finance ecotourism program is possible, since Indonesian people are generous. Based on the last survey conducted by PIRAC (Public Interest Research and Advocacy Center) in 2004, the rate of giving people in Indonesia is quite high. Based on these survey results rate of the giving people of Indonesia is 96% by individuals, 84% (Rp. 304,000 per donor per year) by religious institutions, and 77% by non-religious institutions. Calculations carried out by Mustafa Nasution (2001) revealed that the endowment money of Muslims in Indonesia at this time is assumed to reach 3 trillion rupiahs annually.

**Table 1. Cash Crowdfunding Potential per Year**

Income/ Month	Number of Muslim	Cash Crowdfunding /Month	Amount Cash Crowdfunding/ Month	Amount Cash Crowdfunding/ Year
Rp. 500,000	4 Millions	Rp. 5,000	Rp. 20 Billions	Rp. 240 Billions
Rp. 1-2 Million	3 Millions	Rp. 10,000	Rp. 30 Billions	Rp. 360 Billions
Rp. 2-5 Millions	2 Millions	Rp. 50,000	Rp. 100 Billions	Rp. 1.2 Trillions
Rp 5-10 Millions	1 Million	Rp. 100,000	Rp. 100 Billions	Rp. 1.2 Trillions
Total				Rp. 3 Trillions

*Source: Nasution, 2001*

### ***1.5 Economic Empowerment of People and Ecotourism Minapoly***

Empowerment is the language, from the Indonesian derived from the word "power" which means strength, which means the effort to build a power possessed the poor by encouraging, motivating, and raise awareness about their potential and try to develop (Esack 2000). According to Cornell University Empowerment Group in Saleebey cited by Malik (2012) Empowerment is,

"A deliberate process and takes place continuously, which was centered in the life of local communities, include: mutual respect, an attitude of critical reflection, their caring and group participation, through which people who feel less have jointly sources of valuable be obtained greater access to get and control of these resources".

Empowerment is a strategy for poverty alleviation, this is suitable for the program that attached with local people such as ecotourism conservation in line with *green growth* concept in SDGs.

## **2. Methodology**

### **2.1 Data Collection Methods**

This research method uses a quantitative approach that is supported by qualitative approach. A quantitative approach is used to determine the development of crowdfunding integration and ecotourism minapolity for empowering coastal communities. A qualitative approach in the form of interviews and observations. Interviews (in-depth interviews) conducted to citizens and coastal area management officer Pandansari, Gadingsari Village, Sanden District, Bantul, Yogyakarta. This is done by collecting information by asking a number of questions to be answered verbally in direct face to face interview. The type of interview used free interview method.

### **2.2 Data Processing Method**

Data processing is performed by the method of fishbone diagram and force field analysis. Here're explanation of two methods:

1. Method of force field analysis of Kurt Lewin, developed by Morgan (2008) and participatory has been applied by Singer (2009) in an analysis of the forces that support and hinder the realization of the change. Furthermore, Singer (2009) suggested the analysis steps, as follows:

2. Diagram of causation so-called fishbone diagram of cause and effect is a diagram that shows the relationship between cause and effect. In connection with statistical process control, causal diagram used to show the factors that cause it.

### **2.3 Types and Sources of Data**

The data used in this study are primary data and secondary data. The primary data obtained through three ways, namely observation, interviews to the community and triangulation (checking the truth). Interviews were conducted to the key informants and respondent to know the management of the lighthouse tourism, shrimp farms, organic dragon fruit orchards and beaches. Triangulation is done by comparing the information provided by key informants and respondents with a condition that occurs directly in the community. Secondary data were data observation technique is obtained through several sources, such as printed materials, official website, journals and articles that are already identified, analyzed, clarified, and interpreted, so that the result of this paper can be well justified. The study was conducted in the Gadingsari village, district Sanden, Bantul, Daerah Istimewa Yogyakarta, from August 2017 until February 2018.

### 3. Results

#### 3.1 Fishbone Analysis

In this research, there are 6 factors that hinder the development of coastal areas Pandansari known as 6P such as Product, Price, Place, Promotion, People, Process

1) Product: no tourism program which is offered to visitors.

2) Price: no information related to price of tourism program.

3) Place:

a. No guideline to reach tourism location for the new visitors.

b. Inadequate accommodation for instance hotels, homestays and guesthouses.

c. Tourism service distribution is still unclear and unconnected.

4) Promotion

a. There is no clear illustration of ecotourism facilities, for example magazines, photographs, testimonies from visitors.

b. Inadequate communication between ecotourism's manager and visitors, particularly for English language proficiency.

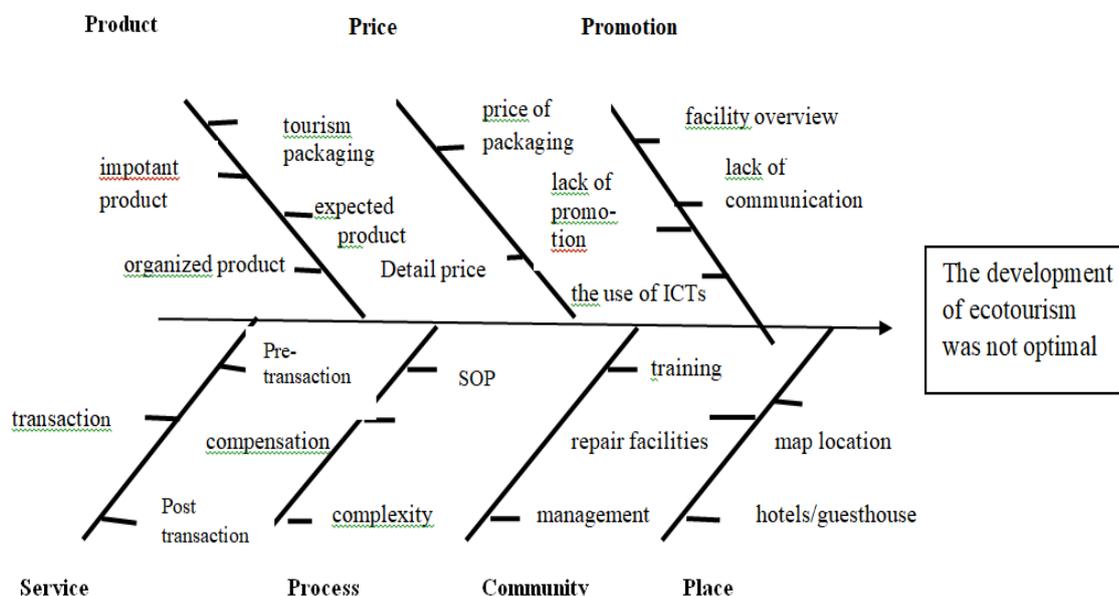
c. Low level of technology attainment for information and communication as a means of promotion.

5) People (Community): Uncertain and inadequate number of employees, lower skill of Pandansari's community and unprofessional human resource management.

6) Process: There is no Standard Operational Procedure (SOP) for visitor's service.

Based on problem assessment and the cause of slow-growing ecotourism that have been explained, Fishbone Diagram is constructed as follow,

**Figure 1. Fishbone Diagram**

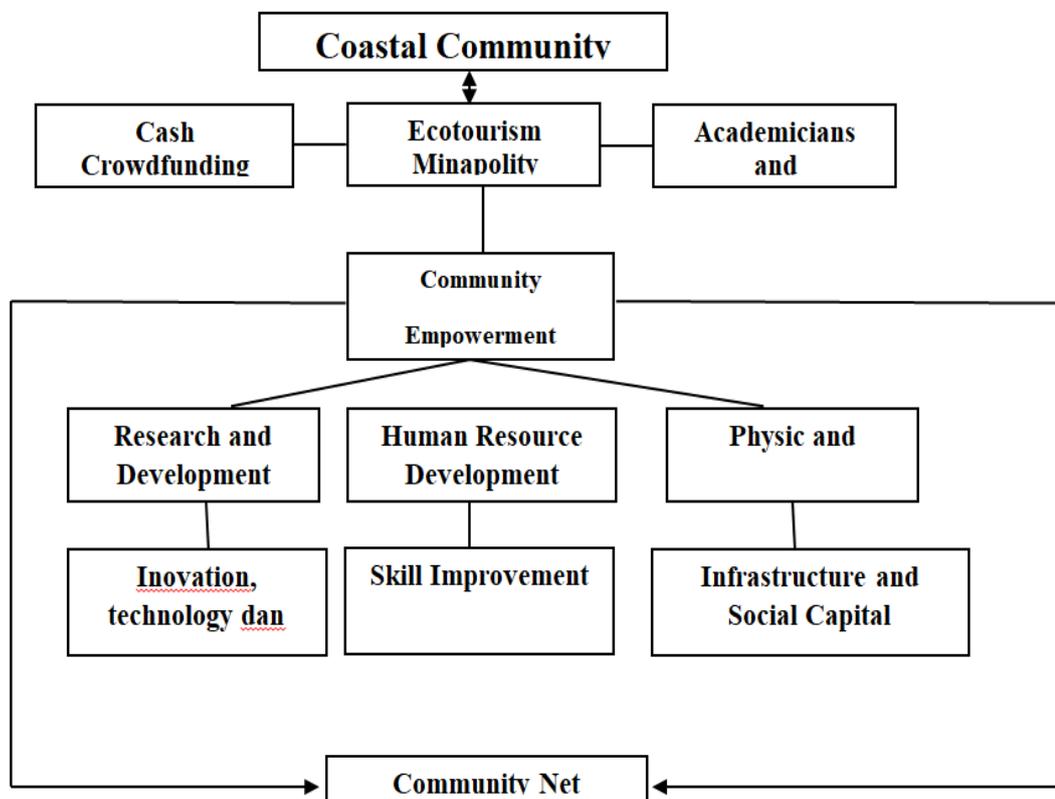


Fishbone diagram explain the problem of ecotourism development in Pandansari. Fishbone analysis helps to investigate the cause of slow-growing ecotourism development in Pandansari. After identified factors that cause problem in coastal area in Pandansari, the next step is, to determine potential cause of problem and decide which factor that most dominant that cause the problem. Based on interviews and small meeting conducted by researchers obtained the most dominant cause of some of the existing problems. The dominant factor is the capital, inadequate facilities, limited human resource management, and lack of promotion. Having in mind the factors that cause the most dominant on the problem, the next step is determining mitigation plan for solving the existing problems. The ecotourism management plan to the problems with the integration Pandansari coastal areas of cash crowdfunding and ecotourism minapolity for empowering coastal communities Pandansari coastal areas.

### ***3.2 The Model of Economic Empowerment for Coastal Community in Pandansari***

Under the conditions of the existence of coastal areas Pandansari for the economy of the community it takes a synergy across sectors that help significantly in meciptakan minapolity ecotourism region. The economic empowerment of coastal communities aim to accommodate the role of Indonesia Crowdfunding Institution, academicians, practitioners, Ministry of Fisheries, Ministry of Tourism, Ministry of Creative Economy and local people to further examine the events to make a suggestion that will be applied by coastal. Community.

**Figure 2. Model of Economic Empowerment for Coastal Society in Pandansari**



The model of economic empowerment for coastal community aims to optimize the joint participation for all parties. There are some parties that involve this integration model, such as,

[1] **Baitul Maal wa Tamwil (BMT)** which has a role as an agency that collect and distribute finance community in Pandansari with Profit-Loss Sharing contract or *mudharabah* contract. [2] **Academicians and Practitioners** conduct research and development (R&D) and improve Human Resource Development. [3] **Coastal community** as economic agent. [4] **Community Net Analysis** is a comprehensive analysis to Investigate factors that influence coastal society economy. [5] **Cash Crowdfunding** is capital (equity) which is distributed from BMT. Therefore, to initiate ecotourism minapolity, the government only act as a supervisor, since the engine of community empowerment is cash crowdfunding. [6] **Education** for coastal community. The first is, educate local people about the integration concept of ecotourism minapolity and cash crowdfunding. In addition, the program held training to improve the skill to produce sea product, to keep sea ecosystem, training to encourage trade activities in tourism, and sharing all about marine knowledge. The second, developing technology for agriculture, aquaculture and conservation effort. For example, using internet technology as advertisement media to promote shrimp farming product, organic dragon fruit orchard and Pandansari Beach itself as tourism site. The third is, coastal community in Pandansari is trained to produce creative and innovative products, because recently, shrimp aquaculture and organic dragon fruit orchard sells as a raw materials only. [7] **Environment** is an activity to raise the awareness of community to their environment, since local people in coastal area face an acute problem. That is coastal area become a recycle bin for pollutions from industries, households, urban housing, ships, farming and fish farming. These pollutant are dangerous for ecosystem, for example the abrasion of soil in coastal areas. Therefore, community have to clean up the beaches periodically to conserve the coast ecosystem. [8] **Entrepreneur** such as further processing for sea product, shrimp aquaculture and organic dragon fruit orchards in order to increase their value added. Besides, persuade the young generation to e-commerce by creating website blog and advertise using other social media to promote sea product, shrimp aquaculture and organic dragon fruit orchards.

### ***3.4 Force Field Analysis***

Force Field Analysis (FAA) is a system in the equilibrium that is happen because there is a balance between strengths or other factors that have strong influence in the system, such as, Driving Force Factors and Restraining Force Factors (Fatih 2010). Driving force factor strengthening a balance towards the goal. Nevertheless, restraining factors restrict to the goal which is willing to persuade, and divert from the purpose.

**Table 3. Force Field Analysis**

Driving Force Factors	Restraining Factors
<b>Internal</b>	<b>Internal</b>
<ul style="list-style-type: none"> <li>- Natural potential</li> <li>- The hospitality of society</li> <li>- Lighthouse</li> <li>- Dragon fruit garden</li> <li>- Prawn farming</li> <li>- Society who promote ecology</li> <li>- Society who has economic motivation</li> </ul>	<ul style="list-style-type: none"> <li>- No tourism programs</li> <li>- Limited promotion</li> <li>- Facilities and tourism service</li> <li>- Investment: capital and finance for business</li> <li>- Number of employees are limited; education and skill of employees are low</li> </ul>
<b>External</b>	<b>External</b>
<ul style="list-style-type: none"> <li>- Support from tourism agency or tourism department in Bantul</li> <li>- Cash Waqf-based financing for ecotourism <u>minapolity</u></li> <li>Eco-friendly visitors</li> <li>-Promotion (traditional)</li> <li>-Teknology progress for promotion and market expansion</li> </ul>	<ul style="list-style-type: none"> <li>-There is no law for ecotourism business</li> </ul>

**Table 4. IFAS Analysis**

Internal Strategic Factors	Weighted	Rank	Score
- Natural potential	0.08	3	0.24
- The hospitality of society	0.09	4	0.36
- Lighthouse	0.09	4	0.36
- Dragon fruit garden	0.10	4	0.40
- Prawn farming	0.08	3	0.24
- Society who promote ecology	0.07	2	0.14
- Society who has economic motivation	0.07	2	0.14
<b>Weaknesses</b>			
- No tourism programs	0.07	2	0.14
- Limited promotion	0.08	3	0.24
- Facilities and tourism service	0.10	4	0.40
- Investment: capital and finance for business	0.10	4	0.40
- Number of employees are limited; education and skill of employees are low	0.07	4	0.28
<b>Total</b>		1.00	3.34

**Table 5. EFAS Analysis**

External Strategic Factors	Weighted	Rank	Score
- Support from tourism agency or tourism department in Bantul	0.15	4	0.50
-Cash <u>Waqf</u> -based financing for ecotourism <u>minapolity</u>	0.19	4	0.60
- Eco-friendly visitors	0.09	3	0.21
- <u>Promotion</u> (traditional)	0.09	3	0.21
- <u>Teknology</u> progress for promotion and market expansion	0.09	3	0.21
<b><u>Threath</u></b>			
-There is no law for ecotourism business	0.09	3	0.21
-There is no official support from local government of <u>Bantul</u> Regency on ecotourism	0.15	4	0.60
- There is no <u>patner</u> in ecotourism promotion	0.15	4	0.60
<b>Total</b>		1.00	3.14

To investigate how strong influence of factor which have explained in developing ecotourism minapolity in Pandansari costal region, therefore, this research conduct IFAS (*Internal Strategic Factors Analysis Summary*) dan EFAS (*External Strategic Factors Analysis Summary*). To rank factor, these analyzes use 4 ranks, for instance, 1 is weak; 2 is average; 3 is strong; 4 very strong. The result of IFAS and EFAS are presented in table 4 and table 5 respectively. To rank the factor, these anlyses use 4 number of rank: 1 is weak; 2 is average; 3 is strong; 4 very strong. The result of IFAS analysis is presented in table 4 and the result of EFAS analysis is presented in table 5. Based on descriptive statistics of IFAS and EFAS analyses in table 4 and 5, the value of IFAS = 3.38 and IFAS = 3.14. The results show that, ecotourism in Pandansari is in the 'growth' stage. The analysis describes that, some factor that are consider as 'driving force factors' do have the highest rank, such as, the availability of lighthouse, Dragon fruit farming, Prawn farming, beach and friendly society. The driving force factors are the combination between 'the opportunity' of external strategic factors and 'the strength' of internal strategic factors. Total value of 'push factors' is 36 is calculated from the sum of push factors' rank.

#### 4. Discussion and Conclusion

The analysis also showed that the factors that have the highest rank is the capital, the promotion is not maximized, facilities and services are inadequate, the lack of official support from Bantul, and partners for promotional purposes. Inhibiting factor is a combination of strategic factors external threats and internal strategic factor of weakness. The total value of the inhibiting factors derived from the sum of ratings inhibiting factors amount to

29. The total value of the driving factors is greater than the total value of the inhibiting factors indicate that the tourism development of coastal areas Pandansari is feasible to run. The stronger the driving factors will further weaken the effect of inhibiting factor, therefore, the greater the chances of a program can be implemented. The driving factor that needs to be strengthened is the presence of a beacon, dragon fruit orchards, shrimp farms, beaches, people are friendly and open, and the integration of venture capital sharia. Lighthouse and dragon fruit orchard is a potentially strong among tourism sites in Pandansari.

Consequently, ecotourism facilities and service quality need to be improved to ensure customer satisfaction. Strong promotion is also a great support to increase income and trade activities. Since it is expected to make the general public familiar with the existence of coastal ecotourism Pandansari and also attracts more people to visit.

In brief, potential marine resource in Pandansari that are investigated using the method of fishbone diagram and force field analysis have to improve. Integration of cash crowdfunding for social financing (that strongly supported by Indonesia Crowdfunding Board) and Community-based Minapolity Ecotourism supported by 3E (Education, Environment, and Entrepreneur) program is significant to maintain sustainable conservation management and community socio-economic welfare.

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# OPINION AND DISSATISFACTION TOWARDS PUBLIC SERVICES ON THE INTERNET THE CASE OF VIETNAMESE PUBLIC HEALTH SERVICES

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## **Abstract**

*The development of Facebook in Viet Nam has created social online forums for many discussions. The topic of dissatisfaction of public service attracted the most posts and comments. Our study showed that, the dissatisfaction, claims on public service will be one of the most useful sources for improving public services. Under the approach of social listening by the technique of opinion mining/sentiment analysis we found many interesting insights relating to citizens' responses on public health services. Facebook big data was archived from 2017 to 2018 and analysed in three dimensions: timeline, word ranking topics and sentiment analysis. We hoped that the result could provide public service managers with solutions for minimizing dissatisfaction towards public service and manage the image of public health services.*

**Keywords:** public service, dissatisfaction, social listening, sentiment analysis, Facebook

## **1. Introduction**

The topic research of satisfaction has been exploited vigorously recent years in the context of Vietnam. Satisfaction is one of easiest ways for every researcher to explore the field of quantitative research regardless of the specific research interest. In terms of consumer research, satisfaction was defined relating to the level of needs or wants were met. Measuring satisfaction has been the practical way for service firms to improve their perceived quality. In the border of service, the Government has applied the approach of satisfaction measurement into public service sector to assess their servants' performance. However, this solution has had some potential problems.

The principle question is that, should we maximize satisfaction or minimize dissatisfaction in a particular product/service? Maximizing satisfaction is an elusive goal because individual aspirations and expectations are constantly changing that we could not conceive or make all people fully satisfied (Andreasen, 1977). Although an individual

satisfaction could be defined, the problem of objective or subjective measure might be questioned due to the subjective nature of a psychological construct (Andreasen, 1977). Post-purchase satisfaction measurement, which has been applied widely in marketing researches of Vietnamese context recently ignores the seller's complaint handling mechanisms that satisfaction is just the beginning step (Andreasen, 1977). Applying the definition of customer satisfaction to the public sector could cause some sources problems: (1) transaction in private sector is voluntary, (2) citizens are required to pay for services that they do not consume, (3) the Government is typically a monopoly provider of some services (Kelly, 2005). In addition, it has some problems in measuring: (1) subject measurement of public services sector has similar limitations with the general satisfaction measurement due to one of the reasons that citizen evaluations of service quality could reveal many outcomes that the administrative outcome measures do not have, (2) the difference between service outputs and outcomes is clear, but the public managers are just interested in the outputs which make the satisfaction measurement meaningless.

Generally, public services have many different characteristics from private services which make them more difficult to measure satisfaction. Public services exist and operate under the regulations by the Government or in the political environment. The failure of public services is a normal phenomenon which is not like private services. Perceptions and framing of public service failure which is more than in a private sector context, are often mixed with opinions about the service, its needs, desirability, prior reputation, political learnings of the service (Van de Walle, 2016). Failure of public services lies in the eyes of citizens and the performance of public service is assessed by the comparison between expectations and perceptions. Public service failure is the matter of interpretation and perception that means not only public services have to perform better than established standards, they have to be seen to improve (Van de Walle, 2016).

Van de Walle (2016) figured out reasons of public service failures: (1) failure by ignorance is failure to recognize a need for adaptation or reform; (2) failure by rigidity, a situation where policy makers know what is going on, but they seem unable to take action; (3) failure by failed intervention refers to a situation when wrong solutions are applied or where a solution applied to the wrong problem; (4) failure by neglect is the result of disinterest by management or policy makers in the service involved (5) failure by design exists in areas where demand is high but resources scarce; (6) failure by association occurs when actors' assessment of public services is affected by negativity bias. When citizens are treated as customers or consumers, applications of behavior theory showed some strategies of citizens' reactions (Van de Walle, 2016): customers can use their voice to express dissatisfaction toward political leaders in charge of those services, toward those managing or operating the service; they also choose exit as a common strategy to counteract service failure.

After experienced dissatisfaction, consumers have motivation to share their negative service experience on platforms of Web 2.0 which allows users to share and discuss their ideas (Hartmans, 2014). That the reason user generated content (UGC) is an important source of information for improving services and should be tracked and

monitored closely (Hartmans, 2014). Customers could be driven by altruism, vengeance, venting, economic and self-enhancement motivation to engage WOM (word of mouth) after encountering negative services. Some researchers applied sentiment analysis to get insight from UGC on social networking sites. Sentiment analysis refers to the detection of opinions, sentiments, emotions and subjectivities in the unstructured texts which determines the attitude of user/writer on specific topics by text segments and the polarity or the strength of the attitude (Zhang, Yu, Li, & Lin, 2016). The extremely dissatisfied consumer is more willing to generate itemized rating and textual comments that bear negative sentiments than the mean across the itemized ratings and the sentiments of textual comments can be adopted to represent the consumer satisfaction level (Zhang, Yu, Li, & Lin, 2016).

## **2. Method**

Social media listening and monitoring has been used from the advent of social media marketing. Listening refers to tracking conversations and content in social media platforms with the aid of software that automatically searches information and stores data in high capacity servers called data warehouse. Social listening is an approach for researching topics in social networking sites or other social media platforms. When citizens do not want to voice or hide their ratings with the public health services in formal survey research, social listening is one of the most useful methods to collect their evaluations.

In terms of social listening, we use some research techniques to find the dissatisfaction/satisfaction of Vietnamese citizens toward public health services. Sentiment analysis is one of the most popular techniques in researching opinion, or a means of researching attitudinal surveys. Sentiment, heavier on emotions, refers to feeling about an object which is a brand, an organization or an issue (Tuten & Solomon, 2015). Sentiment analysis, called opinion mining, is a very basic level to analyze content to determine the attitude of the writer. Applied sentiment analysis in this study, we hope to assess attitudes of Vietnamese citizens with issues related to public health services.

We bought the data from a big data service company in Vietnam, SMCC (<https://smcc.vn/>) in the period from April, 2017 to April, 2018. Totally, we had 4,853 significance data units from more than 100,000 data units, the basic dataset included such main fields: (1) date/time/hour; (2) title of the post; (3) sources of data; (4) content; (5) Object of post/comment/response; (6) mentioned problem/issue; (7) sentiment; (8) Like; (9) Domain; (10) writer/author/user; (11) category; (12) influence; (13) Alexa rank; (14) tagged keyword. Data was crawled following some Vietnamese keywords related to the main topic of Vietnamese public health service sector. After data had been exported in the form of .csv (a form of Microsoft Excel file), we conducted analyzing in following steps. Firstly, data was cleansed throughout scanning with the level of significance or topic-related. Secondly, objects of content were extracted together with the issues/problems relating to the main topic. Lastly, sentiment was extracted and analyzed with three categories: (1) Positive; (2) Negative; (3) Neutral.

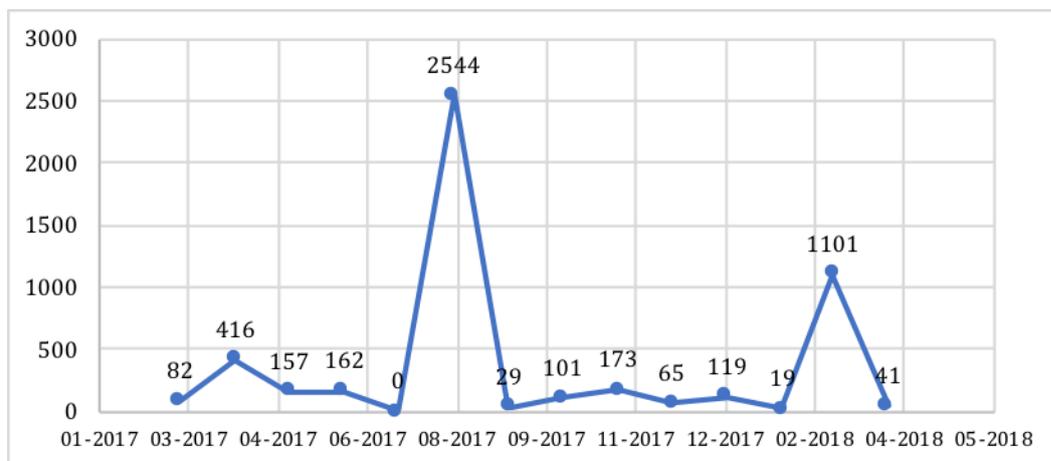
There are three main topics in any social listening reports. Timeline illustrates the agenda of discussion regarding the analyzed topics which provide the landscape of topic

discussion in the period of time. Word ranking or topic ranking is the second topic that shows the importance of topics discussion in the analysis period. The topic/keyword have a higher ranking or most mentioned is “hotter” than others. Last but not least, sentiment analysis provide the researchers with the broad attitude towards the objects of posts/comments. Sentiment analysis is the core of a social listening report which show the dimensions aspect of one topic. The imbalance of general feeling (positive or negative) has more value for managers in finding solutions for the problem/issue. In our point of view, social listening is an approach which can combine the qualitative and quantitative or sometimes could be called a mixed approach. We could calculate the proportion of post/comments/data unit in the basic kind of quantiative like frequency but we can denote the idea or meaning of digital discourse from social networking sites to analyze in the form of qualitative approach.

### 3. Results

From more than 100,000 data unit in the topic of public health services, we tested and found 5,009 significant units. Vietnamese Facebook ‘citizens’ discussed about public health all the year of 2017. The August are on the top of discussion with 2,544 discussions. The agenda discussed topic showed that, Facebook citizens commented on the issue of vaccine crisis in August, 2017.

**Figure 1: Agenda of discussed topics in 2017 on public health services**



As the Figure 1 shows, top comments of Facebook citizens on public health services in March, August, 2017 and March 2018 relate to public health insurance, vaccine. However, comments/posts on public health services has been stabilized for 12 months with the number of less than 500 discussions. Probably, citizens always talk, share their ideas on the public health services, or it is the most frequently used services that every people encounters.

The object of discussion includes minister of MOH (Ministry of Health), public health insurance, vaccination, public health servants, public health fee, general public health, drug, administrative procedure, administrative servants, safe, health equipment and health service infrastructure.

**Figure 2: Objects of citizens' responses/discussions**

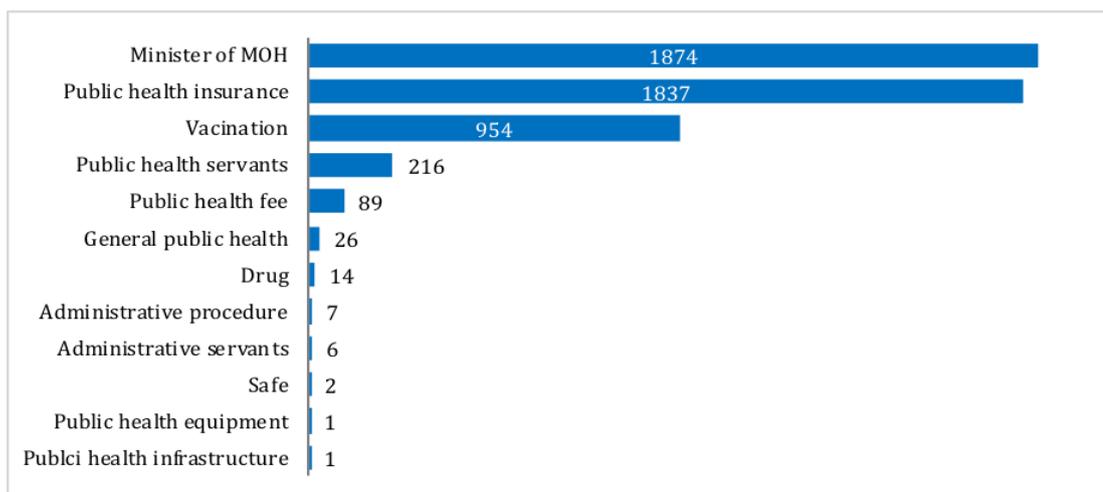


Figure 2 listed 12 top discussion objects of Facebook citizens, which is focus mostly on the Minister of MOH with 1,874 comments. When citizens want to share their dissatisfaction on public services, leaders of public organizations could be the one of the potential object (Van de Walle, 2016). Ranked second in top agenda of 2017 discussion on public health is public health insurance which attracted 1,837 discussions. Attributes of public health services such as: public health servants, fee, drug, administrative procedures, equipment, infrastructure were not discussed frequently.

On the perspective of social listening and monitoring, sentiment analysis is more difficult to analyse but more useful for managers to find solutions for their improvements. Sentiment analysis in public health services could be considered as a form of attitudinal surveys which show the general attitude or opinion of citizens on the discussed objects, problems or issues. Sentiment is analysed based on discussed objects which shows the attitude towards objects.

**Figure 3: Feeling towards discussed objects**

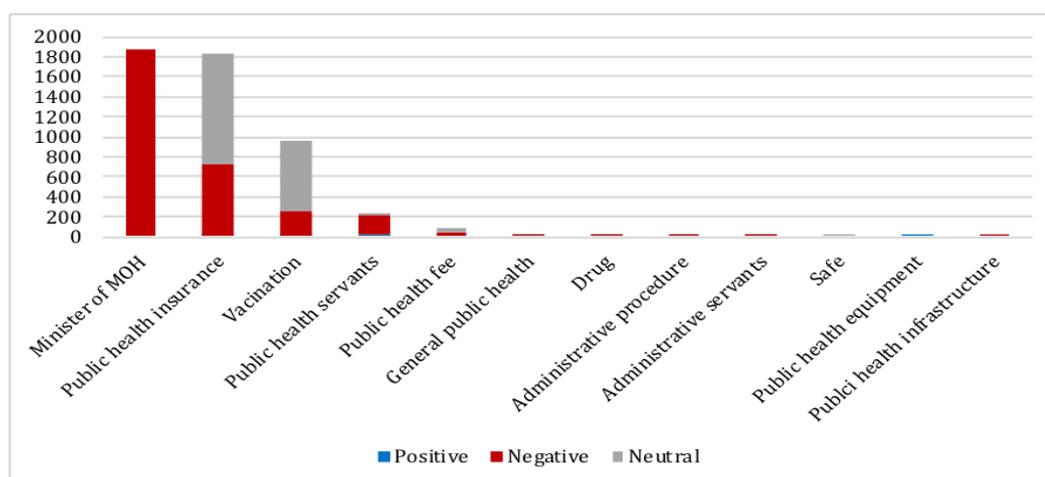


Figure 3 illustrates that, the negative attitude of citizens towards ministers of MOH is the highest negative proportion. Ranked second is public health insurance, followed is vaccination, public health servants, fee and general public health. Negative attitude seemed

to cover all the discussed object of public health services. There were five positive comments on public health equipment.

Notably, we did not see many comments on the failure of public services in negative discussions. This approved the assumption that, satisfaction/dissatisfaction towards public services are mixed of perceptions and opinion. Mining more deeply on negative comments we could find other subtopics related to the opinion and dissatisfaction. While the opinion targeted the agenda, discussion led by mass media, focused on minister of MOH, public health insurance, vaccination, the dissatisfaction concentrated on public health servants, public health administrator, public health fee, procedures, infrastructure (physical evidence), public health in general.

#### **4. Discussion and Conclusion**

Our study results show the dissatisfaction of citizens on public health services which includes their opinions and ratings. Dissatisfaction towards public health service attributes was less frequently discussed than the topic of other mass issues but spread for a long range of time. Whilst citizens opinion was led by the mass agenda of online media news concentrated on the specific period of time of the year.

Negative attitude towards public health image of Vietnamese citizens lied heavily in the image of leaders of the public organization. Other aspect of negative image of public health related to the discussed topic of the mass audience when some issues were raise. Public services manager need to employ some tactics to adjust their image throughout tracking and listening to the citizens or mass audience. Managing public services not only manage the output but outcomes. Managers have to react, take measures together with the promotion activities.

Citizen rarely shares their positive comments or satisfaction toward public health services or any objects. Social listening could be considered as a method for improving services followed the approach of minimizing dissatisfaction.

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**PART 5: ENVIRONMENTAL ECONOMICS  
AND MANAGEMENT**



# THE LIFESTYLE CHANGE SOLUTIONS TO REDUCE THE INDIVIDUAL GREENHOUSE GAS (GHG) EMISSIONS FOR LOW CARBON CITY IN KHON KAEN, THAILAND

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## Abstract

*The low carbon city is the urban management to meet the target of city greenhouse gas (GHG) emissions reduction. There are two main solutions for low carbon city, technical solution, and lifestyle change solution. The first solution depends on knowledge of science and technology in the high budget. By the other solution does not depend on technical knowledge and high budget. It can proceed immediately by the people in the urban community. We proposed that human can change GHG emissions behavior in their lifestyle and these changes will be the significance solution for low carbon city at present and future. The objectives of this study were to investigate the conditions of the individual GHG emissions reduction behavior and propose the solutions to reduce the individual GHG emissions for low carbon city in Khon Kaen Municipality, Thailand.*

*This study was conducted by qualitative research. The finding indicated that there are six main conditions of the individual GHG emissions reduction behavior; personal characteristics, knowledge, attitude, motivation, role model, and equipment support. By these conditions, we provided the solutions to reduce the individual GHG emissions for low carbon city in Khon Kaen Municipality. Our solutions suggested to (1) provide the media that support people's knowledge and attitude improvement for GHG emissions reduction, (2) provide the activities that support people's motivation, (3) promote and reward for people who are outstanding for GHG emissions reduction, and (4) provide the equipment that support people to reduce GHG emissions.*

**Keywords:** Low Carbon City, Lifestyle Change, Individual GHG emissions

## 1. Introduction

Article 2 in the Paris Agreement shows that international try to hold the increase in the global average temperature to well below 2 °C above pre-industrial levels and increase the ability for low greenhouse gas (GHG) emissions development. (United Nations [UN], 2015) The cause of the increase in the global averaged temperature since the mid-20th century is the increase in anthropogenic GHG concentrations. (Intergovernmental Panel on Climate Change [IPCC], 2007) In 2014 globally, more people lived in urban areas than in

rural areas, with 54% of the world's population and will be 66% in 2050. (UN, 2014) In the energy sector, urban areas account for 67-76% of global energy use and 71-76% of global energy-related carbon emissions. (IPCC, 2014) May, conclude that the first priority solution for solving global warming problems is GHG emissions reduction in urban areas.

One of the solution to reduce GHG emissions in urban areas is a low carbon city that is the urban management to meet the target of city GHG emissions reduction. The concept of low carbon city planning does not depend on only one discipline, it unavoidably uses the whole planning idea and method transition. (Cao and Li, 2001) The solutions for decarbonization in any urban areas will require the combination of technological development, infrastructure investments, and behavioral change. (Milner, Davies, & Wilkinson, 2012) Behavior, lifestyle, and culture have a high potential for GHG reduction, people can reduce GHG through the change in consumption patterns (e.g., mobility demand and mode, energy use, choice of longer-lasting products, and reduction in food wastes). (IPCC, 2014) The lifestyle change is the significance solution for fossil energy reduction within the next two decades. (Moriarty & Wang, 2014) So we can conclude that there are two main solutions for low carbon city, technical solution, and lifestyle change solution. The first depends on science or technology knowledge and high budget and also relate to many stakeholders. But the second does not depend on knowledge and budget like the first or depend on only a few budgets moreover, it can proceed immediately.

Even though human's everyday life is dominated by consumerism cause of individual losing but this dominance is not complete. A human has the potential and tactics that scramble for the benefits from the structure of society. (Certeau, 1984) The almost all activities in human's everyday life concern to GHG emissions more or less. Therefore, they can change, GHG emissions behavior in their everyday life and these changes will be the significance solution for low carbon city at present and future.

Khon Kaen is a center of commercial, investment, and transport in Greater Mekong Sub-region. It is determined to be a MICE city (Meetings, Incentives, Conferencing, and Exhibitions) and ICT city (Information and Communications Technology) so that economic growth and population in urban areas are more and more. Besides, the goal of the Khon Kaen Municipality in their master plan (2017-2020) is a low carbon city. (Khon Kaen Municipality, 2016) The GHG emissions behavior of each person may like or different, it depends on their context. Thence, if we understand the conditions of the individual GHG emissions reduction behavior, these will be an important tool to develop an appropriate solutions to change the individual GHG emissions behavior for low carbon city.

## **2. Objective**

To investigate the conditions of the individual GHG emissions reduction behavior and propose the solutions to reduce the individual GHG emissions for low carbon city in Khon Kaen Municipality, Thailand.

### 3. Literature Review

The first time that the world knew the word “low carbon” when the Department of Trade & Industry, UK published a report “Our Energy Future Creating a Low Carbon Economy” in 2003. (Tao, 2011) And one of the solution to drive the “low carbon” in urban areas is a “low carbon city” The question is “what is the definition of low carbon city?” There were many researchers and policymakers proposed the concept and the framework of low carbon city but there were only a few who defined the word "low carbon city".

There was no universally applicable definition of a low carbon city because cities differ in their GHG emissions and cities place important the economic opportunities and quality of life for citizens more than focus on GHG reductions. The definition of a low carbon city should focus on how cities reduce their GHG emissions that do not compromise economic development and livability. (Baeumler, Vasquez, & Mehndiratta) There have not been any standard definitions of low carbon city, it can be defined as a city that includes of societies that apply sustainable green technology, green practices and compare the GHG emissions to the present day. (Kementerian Tenaga Teknologi Hijau Dan Air, 2011) The low carbon town is town or village that try to achieve the goal of GHG emissions reduction and has the clear plan for development. (APEC Energy Working Group, 2011) The connotation of low carbon city mainly includes three aspects; low carbon urban planning and construction, low carbon city lifestyle, and low carbon city operation system. (Ma, Li, & Wang, 2015) We concluded that the low carbon city is an area base management to meet the target of city greenhouse gas (GHG) emissions reduction.

There were six greenhouse gas (GHG) in the Kyoto Protocol; carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFC<sub>s</sub>), perfluorocarbons (PFC<sub>s</sub>), and sulphur hexafluoride (SF<sub>6</sub>). (United Nations, 1998) Carbon dioxide (CO<sub>2</sub>) is the most important anthropogenic GHG and the primary source of CO<sub>2</sub> results from fossil fuel use. (IPCC, 2007)

Greenhouse gas (GHG) emission are divided into 5 main sectors, which are groupings of related processes, sources, and sinks; 1) energy, 2) industrial processes and product use (IPPU), 3) agriculture, forestry and other land use (AFOLU), 4) waste and 5) other. (IPCC, 2006) Khon Kaen Municipality areas account 76.8%, 17.6%, and 5.6% of GHG emissions in energy, waste, and IPPU sector respectively. (Research and Development Institute Khon Kaen University[RDI KKU], 2012) The main solution to reduce the GHG emissions in Khon Kaen Municipality areas is energy saving. Thence, the conditions of the individual energy-saving behavior are the main part of the conditions of the individual GHG emissions reduction behavior.

Zhang, Luo, & Skitmore (2015) reviewed existing literature and concluded that household income, household size, age, education level, location, gender and rebound effects influence the household GHG emissions. These results were in line others study. Yue, Long, & Chen (2013) found that 5 personal characteristics (age, gender, income level, household structure, and educational background) influence the energy-saving behavior. Han, Nieuwenhijzen, Vries, Blokhuis, & Schaefer, (2013) found that personal characteristics,

knowledge, motivation, and context factors play important roles in energy-saving behavior. And Hori, Kondo, Nogata, & Ben (2013) found that global warming consciousness, environmental behavior, social interaction, income, and age affect energy-saving behavior. Besides, Hamamoto (2013) suggested that the psychological factors are important for energy saving behavior promoting.

There were researchers that studied the individual GHG emissions reduction or energy-saving behavior in Thailand. Werabenjapol (2012) found that people who had levels of different education, knowledge, awareness, and attitude had different adaptation behaviors on low carbon society in an energy consumption sector. Srithanyarat (1999) found that knowledge, attitude about electricity saving, and family's economic status influence electricity saving behavior. Muangklam (2001) found that attitude toward electricity using, self-esteem, future directing and self-control, social support, and perception of energy information had the positive correlation to electricity saving behavior. Kittisarawanno & Pimdee (2007) found that need for achievement, believe in internal locus of control of reinforcement, future orientation, self-control, social support, seeing a good example of electricity saving in families, good attitude towards the behavior of electricity saving, and knowledge about electricity saving relate positively to the electricity saving behavior. Theerawattanasiri (2012) found that attitude information contents, the frequency of participation, information senders, married status, gender, income, and information sources influence the electricity saving behavior.

These study above show the factors or conditions that influence the individual GHG emissions reduction behavior.

#### **4. Methodology**

This study was conducted by qualitative research presented by applying the methods of field data collection and in-depth interview with 9 key informants (3 local government officers who are the secretary team of Khon Kaen low carbon city project and 6 community leaders who have had activities for GHG emissions reduction in Khon Kaen Municipality. They were asked the questions on the topic of characteristic, GHG emissions reduction activities, GHG emissions behavior, global warming attitude, and the conditions of the individual GHG emissions reduction behavior. Then, the data was analyzed to find the conditions of the individual GHG emissions reduction behavior and the solutions to reduce the individual GHG emissions for low carbon city. The Atlas ti program was the tool that assisted the analysis. The study areas include the Khon Kaen Municipality areas.

#### **5. Results**

##### ***5.1 The conditions of the GHG emissions reduction behavior***

All key informants in this study have the GHG emissions reduction behavior in their lifestyle, some of the key informants explained:

“When I don't need to watch TV, I turn off at the switch and pull the plug off.”

“There are only the efficiency electric lamps in my house.”

“The technical come to my house to clean the air conditioner every 6 months.”

“When we have to buy the food, we try to do not use the plastic bag.”

“I separate my own waste and manage to be organic fertilizer.”

There are six main conditions of the individual GHG emissions reduction behavior; personal characteristics, knowledge, attitude, motivation, role model, and equipment support.

#### *5.1.1 Personal characteristics*

Many types of research found that personal characteristics are the conditions of the individual GHG emissions reduction behavior. (Zhang, Luo, & Skitmore, 2015, Yue, Long, & Chen, 2013, Han, Nieuwenhijzen, Vries, Blokhuis, & Schaefer, 2013, Hori, Kondo, Nogata, & Ben, 2013, & Werabenjapol, 2012) These studies were in line our finding that personal characteristics especially income is important to change their GHG emissions reduction behavior, some of the key informants explained:

“It is hard to change the behavior of people to save the environment, such as energy saving, use a bicycle instead of a car. It depends on the personal basis. If they have more money, it is difficult to change.”

Even though, it is hard to make a solution to change personal characteristics for GHG emissions reduction but we will use the personal characteristics; sex, age, education, and income to be the independent variables in the next study by a quantitative approach to find the factors that influence the individual GHG emissions reduction behavior because it is helpful for design the solutions that fit to each group of people.

#### *5.1.2 Knowledge*

All key informants have known the methods to reduce their GHG emissions by energy saving, use the efficiency equipment, maintenance, use the green products and services, and waste management, some of the key informants explained:

“I know the methods to save energy.”

“I know the label no.5, it shows the saving equipment.”

“I learned how to clean the air conditioner from youtube, so I clean it by myself.”

“Reduce plastic helps to reduce global warming problem”

“I have known how to manage the waste to be organic fertilizer already, so we join the waste management activities in our community.”

The knowledge has related to the GHG emissions reduction behavior. These findings were in line the previous study for example; Han, Nieuwenhijzen, Vries, Blokhuis, & Schaefer, (2013), Werabenjapol (2012), Srithanyarat(1999), and Kittisarawanno & Pimdee (2007). We classify the knowledge into 5 groups; energy saving, use the efficiency equipment, maintenance, use the green products and services, and waste management.

#### *5.1.3 Attitude*

The previous study showed that attitude is the conditions of the individual GHG emissions reduction behavior. (Hori, Kondo, Nogata, & Ben, 2013), (Hamamoto, 2013),

(Werabenjapol, 2012), (Srithanyarat, 1999), (Muangklam, 2001), (Kittisarawanno & Pimdee, 2007), (Theerawattanasiri, 2012) These study were in line our finding that attitude relate to the GHG emissions reduction behavior, some of the key informants explained:

“One of the Khon Kaen Municipality policy to drive the low carbon city is people attitude improving by plant the tree in the people mind, we believe it is more sustainable development.”

“Mostly I work for the community, personal work is rarely done because I have been the volunteer.”

“Global warming is very important. We do not look at our lives, but we look at our children's lives. I do not do it for only me, but do it for the next generation.”

We classify the attitude into 2 groups; volunteer, and global warming attitude.

#### *5.1.4 Motivation*

Blokhuis, & Schaefer, (2013) found that motivation is important to energy saving. These studies were in line our finding that motivation relates to the GHG emissions reduction behavior, some of the key informants explained:

“First, we need to inspire them, but we do not know what will be the motivation for them to change. We need to find it so they felt that it is time to change.”

“We can make money from the waste, instead of leaving to the bin.”

“I use the most efficient lamp because I need to save money on the electric bill.”

“If there are ways for bicycles, we will change the lifestyle of cycling, but now I do not because I think a lot about safety.”

“Actually, I've been complaining that I am lazy to drive. If there is a nice bus to work, I like it. But now it's hot, tight, and slow.”

“People may not see what do I get from this project, I feel proud of done it.”

We classify the motivation into 5 groups; extra income, saving, safety, convenience, and self-esteem.

#### *5.1.5 Role model*

Kittisarawanno & Pimdee, (2007) showed that role model is the conditions of the individual GHG emissions reduction behavior. It was in line our finding that role model relate to the GHG emissions reduction behavior. People will see and understand what do they do and the benefits that they achieve and try to apply to do like them, some of the key informants explained:

“I Know and see many other people that he or she is interested in and do to reduce global warming problems.”

So that the role model is important to the individual GHG emissions reduction behavior.

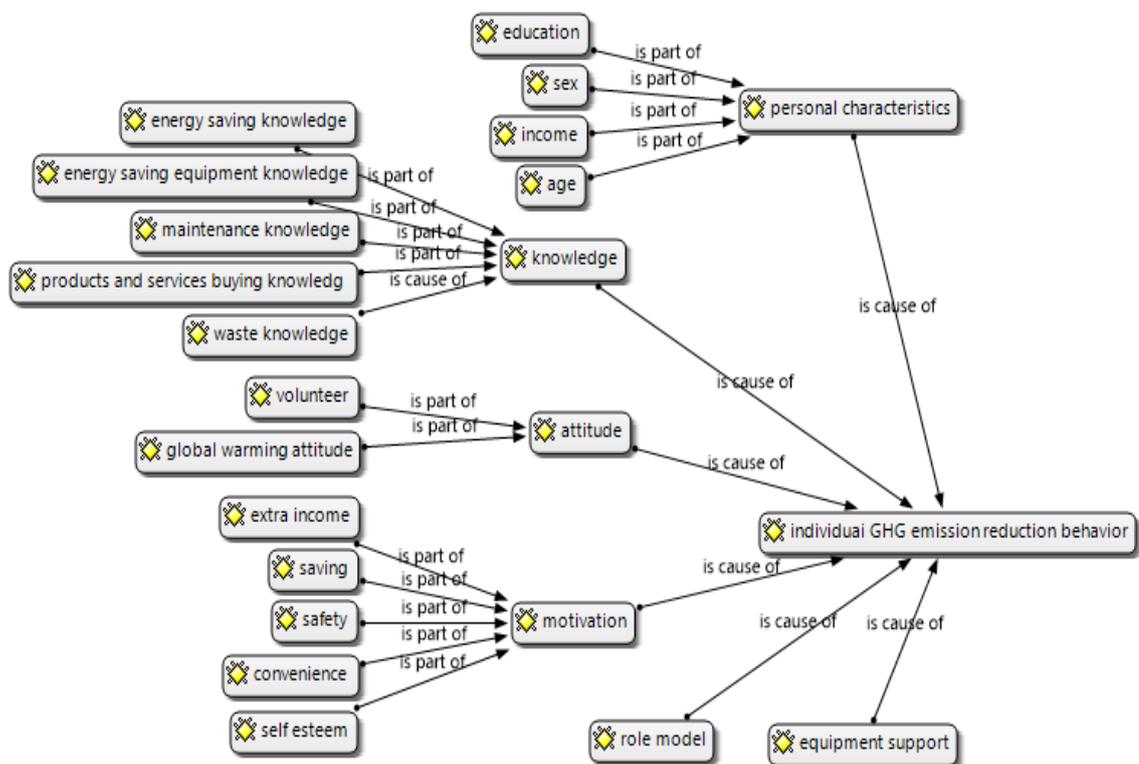
### 5.1.6 Equipment support

Muangklam, (2001), and Kittisarawanno & Pimdee, (2007) found that social support is important to the individual energy-saving behavior. And we also found that equipment support is the one of the individual GHG emissions reduction behavior too. Even though people need to change their lifestyle to reduce the GHG emissions or for their convenience but there is not any equipment support, for example, the ways for bicycles, nice transportation, and recycle bin, they cannot change their lifestyle, some of the key informants explained:

“Buses do not come into my community so we do not use it. If there is a tram that will occur in 2018, we will certainly use.”

So that the equipment support is important to the individual GHG emissions reduction behavior.

There are six main conditions of the individual GHG emissions reduction behavior; personal characteristics, knowledge, attitude, motivation, role model, and equipment support. The relation between these conditions and the individual GHG emissions reduction behavior shows in Picture 1.



**Picture 1 The conditions of the individual GHG emissions reduction behavior**

### 5.2 The solutions to reduce the individual GHG emissions

By the main conditions of the individual GHG emissions reduction behavior; characteristic, knowledge, attitude, motivation, role model, and equipment support, we provided the solutions to reduce the individual GHG emissions for low carbon city in Khon Kaen Municipality.

*5.2.1 Provide the media that support people's knowledge and attitude improvement for GHG emissions reduction.*

The general knowledge about GHG emissions reduction is common and easy to implement because most of this knowledge relates to the money that they pay in their life. More people always try to save money, so they try to know how to save money. Even though more people have known this knowledge already but, some knowledge is unforeseen for some people, for example, the air conditioner cleaning every 6 months can reduce the electric bill more than 10%, turn off TV only remote control TV to use electric. When people know about this knowledge, we believe that they try to save money by energy saving. So, improve people's knowledge how to reduce GHG emissions is important for the individual GHG emissions behavior changing.

People who have a good attitude in global warming and usually be a volunteer, have GHG emissions reduction behavior in their life. They do not only consider their life, but they care about other people and the next generation. If people are provided with their attitude in global warming and volunteer, we believe they will change their lifestyle for protecting the environment. So, encourage people to appreciate GHG emissions reduction is important for the individual GHG emissions behavior changing.

People's knowledge and attitude are important to the individual GHG emissions behavior changing. The question is how to improve their knowledge and attitude. One of solution that impacts to the mass, is public relations the knowledge or information to people by the media. The media will improve people's knowledge and attitude.

*5.2.2 Provides the activities that support people's motivation.*

Public relations knowledge and attitude are seen to be the abstract some people may not touch or believe it. Even though they are improved their knowledge and attitude already, but some do not know how they start to reduce GHG. One of the solutions to change their GHG emissions behavior that is not the abstract is the activities that support people's motivation, for example; the bicycle day activity, the campaign for coupons when they ignore the plastic bag, and the workshop for air conditioner cleaning. This activity is a tool for people's motivation building. People can touch the activities directly and easy to implement.

*5.2.3 Promote and reward for people who are outstanding for GHG emissions reduction.*

Increasing in role model make the more opportunity that people can see the role model. People will see and understand what do they do and the benefits that they achieve and try to apply to do like them. One of the solutions to increasing the role model is promoting and reward for people who are outstanding for GHG emissions reduction.

*5.2.4 Provides the equipment that supports people to reduce GHG emissions.*

Even though people need to reduce their GHG emissions, but there are not the equipment support, for example; the bicycle ways, the good transportation, the separate bin, and the channel to buy the "climate smart food". These make opportunity and convenience to implement easier.

## 6. Conclusions

There are six main conditions of the individual GHG emissions reduction behavior; personal characteristics, knowledge, attitude, motivation, role model, and equipment support. By these conditions, we provided the solutions to reduce the individual GHG emissions for low carbon city in Khon Kaen Municipality. Our solutions suggested to (1) provide the media that support people's knowledge and attitude improvement for GHG emissions reduction, (2) provide the activities that support people's motivation, (3) promote and reward for people who are outstanding for GHG emissions reduction, and (4) provide the equipment that support people to reduce GHG emissions.

Besides, the six main conditions from this study will be applied to be the independent variables in our next study by a quantitative approach to find the factors that influence the individual GHG emissions reduction behavior.

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# INVESTMENT IN ENVIRONMENTAL PROTECTION: INTERNATIONAL EXPERIENCES AND CURRENT SITUATION IN VIETNAM

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## Abstract

*The economic growth in Vietnam has not been without cost as the natural environment - forests, biodiversity and coastal zones-came under additional pressure. To address the situation with the aim of proactive prevention, the Prime Minister issued the Directive No. 25/CT-TTg, dated 31/8/2016, on some urgent missions and solutions to protect environment. In Article 3, item (c) of the Directive, the Prime Minister requested MPI “to study and regulate a specific level of environmental expenditures in total amount of investments for investment projects”. Our review of international experiences shows that the proportion of Pollution Abatement Capital Expenditures to total firms’ capital expenditures in U.S. is about 3,5 - 5,1%. The industries requiring higher levels of environmental capital expenditures include: (1) Petroleum and coal products, (2) Primary metal industries; (3) Paper and allied products, and (4) Chemicals and allied products. In Vietnam, the level of investment in environmental protection is relatively low. Some surveys of enterprises in Vietnam show that less than 2% of all surveyed enterprises indicated the purpose of their investment to meet environmental requirements. With the lessons from international experiences, requirements on the rate (3-5%) of investment for the environment in the total investment of investment projects can be identified as one of the criteria for appraisal and approval of EIA reports of investment projects in Vietnam.*

**Keywords:** environmental protection, environment impact assessment (EIA), investment projects

## 1. Introduction

In recent years, Viet Nam has exerted its own resources and with the support of international communities to promote socio-economic development and to improve the living standard of Vietnamese people. In recent economic forecasts, the World Bank predicts economic growth of Vietnam will exceed 6 percent until 2019, among the world’s fastest. In accordance with the economic growth, Vietnam’s GDP per capita has reached an

estimated US\$2,215 at the end of 2016. In 2016, Viet Nam commenced the implementation of the 5-year socio-economic development plan 2016 - 2020 with the aims at achieving a target of US\$3,000 per capita. These achievements, however, have not been without cost as the natural environment - forests, biodiversity and coastal zones-came under additional pressure. Water and air quality and other parameters of urban environmental conditions have stagnated or deteriorated. The Government of Viet Nam (GOV) has promulgated legislations and embarked on programs and projects to mitigate the environmental impact of urban and industrial expansion.

In 2012, the Government of Vietnam issued the "National Strategy for Green Growth for 2011-2020 with a vision to 2050" (Hereafter referred to as Vietnam's Green Growth Strategy or VGGs). The VGGs defines the green growth as an important part of sustainable development that ensures rapid, effective, sustainable economic development and significantly contributes to the implementation of Vietnam's national strategy on climate change. It establishes the objectives for low carbon green growth and identifies three strategic tasks: (1) Reducing greenhouse gas emission; (2) Greening production; (3) Greening lifestyles and consumption.

Following the official adoption of VGGs in 2012, the Government of Vietnam issued the Vietnam National Action Plan on Green Growth (VGGAP) in March 2014 through Prime Minister Decision No. 403/QĐ-TTg. The VGGAP (2014-2020) outlines 66 distinct intervention areas (programs, projects) and related responsibilities among Ministries, Departments and Agencies (both leading and collaborating) for designing and implementing these initiatives. According to the VGGAP, these activities are categorized into four key areas: (1) awareness raising; (2) institutional improvement; (3) economic restructuring in sectors, localities and enterprises; (4) innovative technologies.

In the past years, the activities of environment protection have achieved some noticeable results. However, environmental pollution from industrial production has been still an increasing problem, creating serious environmental incidents affecting people's activities; producing negative impacts on the implementation of the national Green Growth Strategy and sustainable development. Reasons for this situation are that legal regulations are not suitable with the realities; lack of regulations and criteria for appraising investment projects, producing technologies and waste treatment activities of enterprises, especially, no specific criteria for the proportion of environmental expenditures in total amount of investment for various types of investment projects.

To address the situation with the aim of proactive prevention, the Prime Minister issued the Directive No. 25/CT-TTg, dated 31/8/2016, on some urgent missions and solutions to protect environment. In Article 3, item (c) of the Directive, the Prime Minister requested MPI "*to study and regulate a specific level of environmental expenditures in total amount of investments for investment projects*". This study will provide useful information to contribute to the implementation of Directive No. 25/CT-TTg. The study results may also be helpful to design relevant policies for green growth in the future in Vietnam.

## **2. Research methodology**

### **2.1. Overall approach**

To achieve the objectives, this research will use both qualitative and quantitative methodology to examine environmental expenditures of industrial investment projects in previous studies, international experiences and case studies. With the aim of collecting more information about environmental costs, we plan to select Vietnam's case studies for more detailed examination. Selected cases will aim to reflect key industrial production in relation to environmental management performance. The fieldwork methodology will use semi-structured interviews and focus groups to contrast the informants' viewpoints. The collected data will be continuously analyzed during the fieldwork to guide the data collection in subsequent rounds. Secondary data will be used to supplement the information gained from the in-depth interviews in order to draw an overall picture relevant to current status in Vietnam. Policy recommendation on levels of investment in environment pollution treatment will be proposed for investment projects in industrial production; and draft of legislative documents will be submitted to MPI to propose for Government decision.

### **2.2. Key research steps**

- *Collecting and examining international experiences on environmental treatment costs in industrial production:* relevant international documents, data on investment amount for environmental protection in USA, Japan, Europe, China... will be collected and examined to support environmental requirements for investment projects.

- *Collecting and examining current state of environmental treatment costs in industrial production in Vietnam.* The current status about investment for environmental pollution treatment in Vietnam will be synthesized based on: (1) approved reports of environmental impact assessment (EIA); (2) consultation about results of environmental inspection during the project operation; (3) reports on environmental management accounting and cleaner production initiatives in industrial production; (4) field visits to some industrial companies.

## **3. Results**

### **3.1. Concepts of investment for environmental protection**

The natural environment provides conditions for economic development, and economic development can be considered as the basis for the transformation of the natural environment. It is a close relationship that any nation should be concerned about in its development planning process. With that view, economic development along with environmental protection is the approach chosen by many countries in the world. In Vietnam, the Law on Environmental Protection (LEP) clearly states:

*"Environmental protection are activities of preserving, preventing and restricting negative impacts on the environment; responding to environmental incidents; overcoming pollution, degradation; improving and restoring the environment; exploit and use natural*

*resources in the ways of keeping the environment healthy"* (Clause 3, Article 3 of the Law on Environment Protection, 2014).

In the world, environmental protection issues are being paid attention by many organizations and enterprises towards a world of sustainable development. As businesses increasingly play an important role in green production, investment in environmental protection has become a topic of widespread interest and has been incorporated into important programs of national environmental policies and international cooperation organizations.

Investment in environmental protection is a type of investment for development, because the protection and maintenance of the environment is a condition for sustainable economic development. In economic management, investment is the process of using the resources at present to carry out activities to obtain results, accomplish certain goals in the future. Environmental protection investment in enterprises is often reflected through investment activities related to compliance with environmental regulations by state management agencies and voluntary pollution prevention or market forces. .

In the current trend, enterprises which are the largest source of pollution are playing an increasingly important role in investing in environmental protection. Protecting the environment is not only an obligation for the business, but is gradually benefits for the business in affirming the brand, increasing its value, gaining trust in the market towards the sustainable development for both enterprises and the community. In addition, in order to succeed in integration, enterprises must comply with new international environmental regulations in production, business and consumption.

### ***3.2. International experience on levels of investments in environmental protection***

Currently, two trends are becoming common in many countries around the world, namely: (i) investment in environmental protection is increased in national income and (ii) The private sector will play a major role in environmental protection. For example, the average gross national investment for environmental protection in European countries accounts for about 2.1% of their total GDP. In particular, private sector investment accounted for 59%. In the following sections, information about the level of investment for environmental protection will be presented in more detailed in case studies in the US, Canada and China.

#### **• *Environmental expenditures in United States***

The Pollution Abatement Costs and Expenditures (PACE) survey<sup>1</sup> is the most comprehensive national source of pollution abatement costs and expenditures related to environmental protection for the manufacturing sector of the United States. The PACE survey collects facility-level data on pollution abatement capital expenditures and operating costs associated with compliance to local, state, and federal regulations and voluntary or market-driven pollution abatement activities. The PACE survey was conducted annually

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<sup>1</sup> For more information, refer to <https://www.epa.gov/environmental-economics/pollution-abatement-costs-and-expenditures-2005-survey#Download> (accessed on 9 Mar 2018)

between 1973 and 1994 (with the exception of 1987), but was discontinued after 1994 by the U.S. Census Bureau for budgetary reasons. Recognizing the need for this type of data, the EPA provided the necessary funding to conduct a PACE survey in 2000 to collect pollution abatement costs and expenditures for 1999. The survey has not been administered since 2000 in order for the EPA to evaluate the PACE survey and guidelines. The 2005 PACE survey is the result of a multi-year redevelopment/evaluation effort by the EPA to ensure the accuracy of the survey responses. Because of the limited amount of resources, there are no efforts underway at present to administer another PACE survey and collect more recent information than the data collected and reported for the year 2005.

The PACE surveys before and after 1994 applied different industrial codes, hence the two datasets are presented in separate tables. Tables 1 and 2 show that the *proportion of Pollution Abatement Capital Expenditures to total firms' capital expenditures in U.S. is about 3,5 – 5,1%*. The industries requiring higher levels of environmental capital expenditures include: (1) Petroleum and coal products, (2) Primary metal industries; (3) Paper and allied products, and (4) Chemicals and allied products.

**Table 6. Proportion (%) of Pollution Abatement Capital Expenditures to Annual Survey of Manufactures (ASM) new capital expenditures in U.S. in 2005 and 1999**

	Average	2005	1999
<b>All industries</b>	<b>3,5</b>	<b>4,0</b>	<b>3,1</b>
Petroleum & coal products mfg	13,2	15,8	10,7
Primary metal mfg	10,7	11,4	9,9
Paper mfg	9,5	10,2	8,7
Chemical mfg	6,1	7,5	4,7
Nonmetallic mineral product mfg	4,3	4,2	4,3
Wood product mfg	3,7	4,7	2,7
Food mfg	3,3	3,7	2,8
Leather & allied product mfg	3,2	1,7	4,7
Textile mills	2,6	3,6	1,7
Fabricated metal product mfg	2,5	2,2	2,9
Furniture & related product mfg	1,9	2,2	1,6
Beverage & tobacco product mfg	1,5	2,3	0,7
Electrical equipment, appliance, & component mfg	1,3	1,7	0,9
Plastics & rubber products mfg	1,3	1,4	1,2
Machinery mfg	1,2	0,7	1,7
Transportation equipment mfg	1,2	1,7	0,7
Printing & related support activities	1,1	1,6	0,7
Textile product mills	1,1	1,1	1,0
Computer & electronic product mfg	0,8	1,0	0,6
Miscellaneous mfg	0,4	0,6	0,3

- *Review of other previous studies*

In Canada, the Survey of Environmental Protection Expenditures is conducted every two years. The survey collects operating and capital expenditures made by primary and manufacturing industries in response to, or in anticipation of, environmental regulations and conventions. It also reports the use of environmental management processes and technologies including those used to reduce greenhouse gas emissions by Canadian businesses. The collected data in 2006 show that the oil and gas extraction industry spent more on environmental protection than any other industry, accounting for almost one-third of the total. The second highest spender was the petroleum and coal products industry, accounting for approximately 10% of total environmental protection expenditures. Investments by Canadian oil and gas producers, most of which operate in Alberta, in areas such as pollution abatement and control, waste management, pollution prevention, and reclamation and decommissioning totaled over \$1.7 billion in 2006. Put in perspective, *for every \$100 invested by the oil and gas extraction industry, \$4 (4%) was invested in environmental protection.* Nationally, the petroleum and coal products industry was the second largest investor in environmental protection (\$596 million) as that industry continued to upgrade refineries to meet new Sulphur regulations. *Environmental protection capital expenditures represented about \$20 (20%) out of every \$100 invested by the petroleum and coal products industry.*<sup>2</sup>

Charles et al. (2012) provided information about proportion of environmental capital spending to total capital expenditures of 45 firms in United States. The 45 firms disclosed their environmental capital expenditures in at least one year over the sample period of 1993 - 2005, and there are 433 firm-year disclosures of this spending over the investigation period. The sample firms represent 16 different industries (based on two-digit primary SIC codes) with the largest representation, coming from the 28xx (chemical and allied products) classification. The sample firm size (based on 2004 revenues) ranges from \$3.5 billion to \$291.2 billion with a mean (median) of \$22.8 billion (\$9.8 billion). In general, the firms were profitable (mean 2004 ROA of 6.4 percent), and well-leveraged (mean 44.9 percent debt-to-capital ratio in 2004). The 2004 capital intensity of the companies (net property, plant and equipment (PPE) divided by total assets) ranged from 7.0 percent to 68.0 percent with a mean (median) of 28.2 percent (24.7 percent). Charles et al. (2012)'s observations show that firms' environmental capital spending ranged from 0.07 percent of total capital expenditures on the low end to 55.34 percent at the high end. *The mean firm-year environmental capital spending was 6.59 percent of companies' total firm-year capital spending amounts.*

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<sup>2</sup> Source: <http://www.statcan.gc.ca/pub/16f0006x/2006000/6500759-eng.htm> (accessed on 9 Mar 2018)

**Table 7. Proportion (%) of Pollution Abatement Capital Expenditures to Annual Survey of Manufactures (ASM) new capital expenditures in U.S. in 1973 - 1993**

	Avg	1993	1992	1991	1990	1989	1988	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973
<b>All industries</b>	<b>5,1</b>	<b>6,8</b>	<b>6,8</b>	<b>6,4</b>	<b>5,2</b>	<b>3,7</b>	<b>3,9</b>	<b>3,6</b>	<b>2,9</b>	<b>2,5</b>	<b>2,9</b>	<b>3,2</b>	<b>4,1</b>	<b>4,4</b>	<b>4,3</b>	<b>5,3</b>	<b>6,2</b>	<b>7,4</b>	<b>8,0</b>	<b>7,6</b>	<b>7,8</b>
Petroleum and coal products	19,3	42,4	41,3	24,8	22,0	12,5	18,5	16,5	8,4	8,3	10,6	10,8	11,5	14,7	16,3	18,3	16,6	15,6	23,0	25,1	29,1
Primary metal industries	11,6	10,2	10,5	11,5	8,6	7,2	6,6	7,1	5,4	6,5	5,9	12,2	11,5	13,5	0,2	16,9	19,7	20,0	20,0	17,2	21,4
Paper and allied products	10,5	10,0	12,9	13,7	9,9	8,0	5,8	4,5	5,3	1,2	4,6	6,1	6,1	6,5	9,6	9,1	13,5	16,2	22,3	21,5	22,2
Chemicals and allied products	10,2	13,3	14,1	12,9	12,2	8,9	10,1	7,9	9,0	5,5	5,6	6,9	7,9	8,9	9,7	10,5	12,5	13,2	12,3	10,6	12,4
Leather and leather products	7,3	14,0	7,2	15,1	7,3	3,0	4,0	4,0	1,1	1,9		1,5					12,3	19,5	9,0	4,2	5,3
Stone, clay and glass products	6,1	5,4	6,3	6,5	4,7	3,4	2,8	3,6	2,2	3,5	5,5	4,6	7,3	5,0	5,6	4,9	8,1	7,0	11,0	13,1	10,8
Lumber and wood products	4,4	4,7	5,8	9,0	5,6	3,1	2,6	2,0	2,1	2,9	2,1	2,5	4,4	4,0	4,5	4,4	4,8	4,1	5,9	6,0	6,6
Food and kindred products	3,8	2,6	3,6	5,1	2,8	3,1	2,8	2,7	2,2	2,4	2,6	2,5	2,9	3,6	3,6	3,6	4,7	5,4	5,3	6,6	8,2
Furniture and fixtures	3,8	4,6	3,1	3,3	2,6	1,5	3,0	2,7	1,9	1,6	1,5	2,7	2,9	2,2	4,3	2,2	3,2	9,4	9,6	8,1	5,7
Tobacco products	3,2	4,7	3,9	1,5	2,1	2,7	1,9	1,6	0,0	1,2	1,2	0,4					2,7	6,2	8,4	5,8	3,0
Fabricated metal products	3,0	2,4	3,3	4,3	3,6	3,3	3,5	3,0	2,7	3,3	2,5	2,3	1,7	1,9	2,0	1,9	3,2	3,3	3,7	4,6	3,7
Transportation equipment	2,9	2,6	2,9	2,8	3,7	2,9	2,9	4,8	4,4	2,6	1,9	1,5	2,6	3,4	2,8	2,4	1,8	2,5	2,7	3,3	4,0
Textile mill products	2,4	1,8	1,9	2,7	2,0	1,3	0,8	1,6	1,3	1,0	1,2	1,4	2,8	4,0	2,9	4,4	3,1	4,9	4,3	2,7	2,6
Instruments and related products	2,0	2,9	2,7	2,3	2,1	1,9	0,8	0,8	1,0	1,0	1,2	1,4	2,0	1,6	1,6	1,5	2,7	4,1	3,7	1,9	1,9
Electronic and other electric equipment	1,8	2,0	1,7	0,3	1,9	2,2	1,9	1,4	1,3	1,1	1,3	1,4	1,5	1,3	2,0	2,0	2,3	2,6	2,8	2,3	2,6
Miscellaneous manufacturing industries	1,7	2,1	1,8	1,6	2,2	1,2	1,6	0,9		1,4	1,1	0,7	1,9	1,5			1,6	0,8	1,9	3,9	3,5
Rubber and miscellaneous plastics products	1,7	1,5	2,3	1,9	2,2	1,7	1,1	1,2	0,1	1,2	1,3	1,1	1,3	1,0	1,1	1,2	3,2	2,8	2,8	2,6	1,9
Industrial machinery and equipment	1,4	1,5	2,2	1,8	1,3	2,1	1,1	0,7	0,8	0,5	0,8	0,9	0,8	0,9	1,2	1,4	2,2	2,0	1,8	2,0	2,4
Printing and publishing	0,8	0,9	0,9	0,7	1,2	0,6	1,4	0,6	0,8	0,5	0,4	0,5	0,4	0,5	1,0	0,6	0,5	0,3	1,2	2,4	0,7

### ***3.3. Investments in environmental protection in Vietnam***

#### *3.3.1. The legal and regulatory context*

The 2014 Law on Environmental Protection (LEP) provides a legal framework for managing environmental issues in Viet Nam. The LEP was firstly promulgated in 1993 and was revised twice in 2004 and 2014. The LEP requires firms in some specific industries to conduct environmental impact assessment (EIA), and they only have the right to start or continue their business only when their EIA reports are approved. Other firms are required to prepare a simpler commitment to environmental protection statement. In 2016, regulations of administrative penalties on environmental violations have been revised (Decree 155/2016/ND-CP). The monetary penalties have maximum levels of 1 billion for violating individuals and 2 billions for violating firms.

Environmental Impact Assessments (EIAs) are suggested as tools for promoting firms' investments in environmental protection. EIAs are scientific processes that evaluate the potential environmental impact of development projects before making decisions about undertaking the projects. Governments use EIAs to identify and manage the effects of economic development on the natural environment. In Viet Nam, EIA reports provide a legal basis for environmental management agencies to approve project investments. The LEP 1993 was the first Vietnamese legislation to regulate EIAs. The current EIA framework in Viet Nam is regulated by the 2014 LEP; Decree No 18/2015/ND-CP of Government dated 14 February 2015 on environmental protection planning, strategic environmental assessment, environmental impact assessment and environmental protection plan; and Circular No. 27/2015/TT-BTNMT 29 May 2015, issued by MONRE on strategic environmental assessment, environmental impact assessment and environmental protection plan. The 2014 LEP has revised and updated EIA regulation, and has 11 articles ((Articles 18-28) dealing with EIAs, compared to 6 articles (Articles 18-23) in the previous LEP. For example, there is a new article (Article 21) about consultation with organizations and communities affected by proposed projects. The EIA policy system has also improved, and MONRE has issued guidelines on EIA for specific project types, such as the development of industrial zones, urban development, breweries and beverages, thermal power plants, textile factories – dyeing, cement plants, hydropower, pulp and paper plant, for example (Tuan, 2017).

Despite increasing efforts, available evidences suggest that environmental regulations in Vietnam have been of little success with respect to business compliance. First, many goals specified by the Vietnam government could not be reached and had to be adjusted to more humble levels (Anh, 2016). Second, low levels of compliance have been found in important industries such as food, paper, and leather (Thanh, 2009; Dung, 2011; Thanh and Truong, 2013). Although EIAs have the potential to prevent environmental pollution, EIA practices in Viet Nam still reveal many inadequacies and weaknesses in both the quality of EIA reports and implementation processes (Clausen et al., 2011; Tuan et al., 2012). Meaningful public participation and information disclosure are important to ensure effective EIAs (Clausen et al., 2011). A key problem is the lack of meaningful public consultation. For example, Commune Peoples Committees are only required to call a formal meeting with community representatives during the EIA process (Item 6, Article

12, Decree No 18/2015/ND-CP of the Vietnamese Government). There is no requirement for open public involvement and no requirement or guidance provided about effective consultation methods. During project appraisal, there is also no mechanism for authorities to receive public feedback.

### 3.3.2. Status of investment in environmental protection of Vietnamese enterprises

Based on a survey of EIA reports, summary information on investment for environmental protection is presented in Table 3. For large investment projects (Nghi Son Refinery, Formosa Steel Ha Tinh), the investment for environmental protection is estimated at 11% - 14% of total investment. Environmental investment is relatively high, as these are projects in the field that have tentative big impacts on the environment, such as petrochemicals and primary metal industries. In addition, these projects are invested by large international corporations, so the level of environmental investment committed in the EIA report is equivalent to the environmental protection investment of enterprises in the same field of activity in the US (for more information, refer to Tables 1 and 2).

However, the level of investment in domestic projects, reviewed in Table 3, is relatively low. The group of coal mining projects has an average level of environmental protection investment of 3%, very low compared to 19.3% of the environmental protection investment of the coal and oil industry in Table 2. Also related to using coal, the average environmental protection investment of coal-based power plants is 6.6% <19.3%. Mineral resource extraction projects such as rare earths and titanium mining have less than 1% of environmental protection investment, while environmental investment of the US mining industry accounts for 6.1% of total investment (please refer to Table 2).

**Table 8: Summary of capital cost of environmental protection committed in EIA reports of investment projects**

No.	Project	Industry	Total investment (mill. VND)	Environmental investment (mill. VND)	Rate of environmental investment (%)
1	Nghi Son Oil Refinery	Petroleum	136.800.000	15.059.400	11,0
2	Steel Complex and Son Duong Port Formosa Ha Tinh phase 1-1	Metallurgical	179.642.568	23.114.184	12,9
3	Khe Sim coal mine	Coal mining	125.123	14.198	11,3
4	Nam Mau coal mine - Uong Bi Coal Company	Coal mining	1.981.950	2.838	0,1
5	Enhancing capacity of Thong Nhat Coal Company	Coal mining	595.250	2.610	0,4
6	Expansion of coal mines of Thong Nhat Coal Company	Coal mining	1.494.529	4.694	0,3
7	Cam Pha Thermal Power Plant	Electricity	7.956.977	644.959	8,1

No.	Project	Industry	Total investment (mill. VND)	Environmental investment (mill. VND)	Rate of environmental investment (%)
8	Vinh Tan Thermal Power Plant 4	Electricity	35.949.700	1.900.055	5,3
9	Thai Binh Thermal Power Plant	Electricity	17.247.042	1.117.612	6,5
10	Ha Long rare earth processing and material processing plant	Mining	92.250	903	1,0
11	Sandstone titanium mine, Vinh Tu and Vinh Thai communes, Vinh Linh district, Quang Tri province	Mining	30.404	117	0,4
12	Raising the capacity of the VBL Danang Brewery	Beverage	2.103.904	148.062	7,0
13	Factories for prefabricated concrete, prefabricated concrete components and unbaked building materials	Construction materials	100.000	2.000	2,0
14	Textile, garment, dyeing and textile accessories factory Tam Thang	Textile	1.596.000	228.000	14,3

*Source: EIA Reports of the projects*

Previous enterprise surveys also showed that investment in environmental protection of enterprises was quite low. In general, investment and operating costs for environmental protection represent a very small share of total investment and production costs of enterprises. Approximately 40% of survey respondents have invested in environmental protection activities and have regular expenses for environmental protection. In addition, only 24% of enterprises have built environment management system, such as ISO14001. Among enterprises that invest in environment protection, more than 60% of enterprises only invest one time for environmental protection activities since its establishment. In addition, ***about 74% of enterprises have the ratio of investment costs for environmental protection activities is less than 10% of the initial investment cost of enterprises.***<sup>3</sup> In particular, the average cost of regular activities for environmental protection of enterprises only accounts for more than 1% of the total cost of production. The results of recent surveys will provide more information on investment for environmental protection of Vietnamese enterprises.

<sup>3</sup> According to the project “Đánh giá thực trạng tình hình đầu tư cho đổi mới CNTTMT của DN Việt Nam”, Bộ Kế hoạch và Đầu tư - 2016

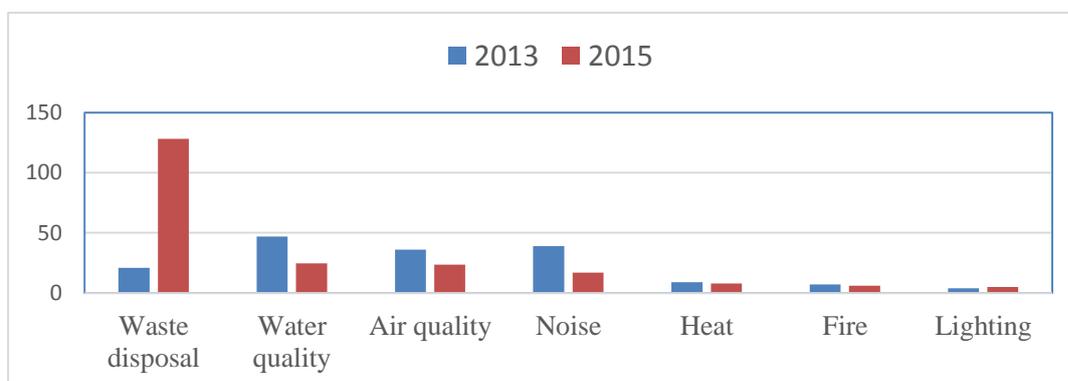
• *The SME survey by the Central Institute for Economic Management*

Small and medium enterprises (SMEs) and the private sector have been the dominant force in the Vietnamese economy (CIEM, 2016). SMEs have seen exponential growth over the last decade. The General Statistics Office of Viet Nam reported 49,203 registered private enterprises in 2013, which is two times more than in 2003 when 25,653 firms were observed. The number of firms in the manufacturing sector grew three times in the same period: from 16,916 enterprises registered in 2003 to 58,688 in 2013. Non-state enterprises employed 6.8 million employees in 2013, which is 59.3 per cent of the total enterprise workforce. This is three times more than in 2003 when non-state enterprises employed 2 million workers. The number of employees in manufacturing increased from 2.6 million in 2003 to 5.3 million in 2013. These numbers show a clear trend of consistent growth in the SME sector in Vietnam.

In 2015, the Central Institute for Economic Management (CIEM) conducted a survey of 2,628 SME enterprises in manufacturing sector. The surveyed enterprises operated in ten provinces, namely the cities of Ha Noi, Hai Phong, Ho Chi Minh City (HCMC), Ha Tay, Phu Tho, Nghe An, Quang Nam, Khanh Hoa, Lam Dong and Long An provinces. On average, there were more investments in environmental equipment in 2015 than in 2013. The total amount invested increased by around 30 per cent, from 163 billion VND in 2013 to 214 billion VND in 2015. The SMEs invested the most in equipment for waste disposal (around 130 million VND). This is the most remarkable increase as the investment in this equipment was only 21 million VND in 2013. Investments in equipment for treating water pollution and air quality were at around 25 million VND in 2015, substantially declining from 47 and 36 million VND, respectively, since 2013. The investments in environmental equipment are more recent—the most intensive ones being made in 2012, right after the Environmental Law came to force. On average, environmental equipment is 7 years old.

Regarding the level of environmental protection investment, surveyed results on the investment purpose of enterprises show that the main purpose is to increase productivity rather than to meet environmental requirements. Less than 2% of all surveyed enterprises in 2005, 2007, 2009, 2011, 2013 and 2015 indicate the purpose of the investment to meet environmental requirements.

**Figure 4: Investments in equipment for environmental standards  
(million VND, real values)**



*Source: CIEM (2016)*

#### **4. Conclusions**

Along with rapid industrialization and poverty reduction, there is a high cost to the natural environment in Vietnam. According to the Environmental Performance Index,<sup>4</sup> in 2016 Viet Nam ranked in the top 10 countries with the worst air quality (Hsu A. et al., 2016). Environmental pollution from production activities continues to increase, causing many incidents causing serious environmental pollution, affecting people's activities and the implementation of the National Strategy for Sustainable Development. Business investment for environmental protection plays a very important role in ensuring the sustainable development of enterprises, contributing to improving the competitiveness and image of enterprises, while contributing to the sustainable development of the country.

The results of previous surveys show that businesses are basically aware of the long-term benefits of environmental protection, but the immediate investment and costs of environmental protection are still felt by businesses as a financial burden. Investment and regular costs for environmental protection accounts for a very small share of total investment and production and business costs of enterprises. Survey results of small and medium enterprises on the purpose of investment implementation of enterprises showed that less than 2% of the total surveyed enterprises responded to meet the requirements of the environment.

In order to promote environmental investment, previous research has shown that the idea from the enterprises themselves is to tighten environmental management and strengthen state management oversight. Economic instruments such as the application of environmental protection fees are also management tools that can increase the environmental investment of enterprises. The application of regulations on requirements and proportion of investment capital for environmental pollution treatment for investment projects may be criteria and tools for evaluation and selection of suitable investment projects. with green growth goals.

Comprehensive PACE surveys in the US show that the cost of capital investment in environmental protection in the total cost of capital invested by businesses is about 3.5-5.1%. Industries that require higher levels of environmental investment include: (1) petroleum and coal products, (2) main metallurgical industry; (3) Paper and related products, and (4) Chemicals and related products. With experience in the United States, regulations on the rate (3-5%) of investment for the environment in the total investment of investment projects can be identified as one of the criteria for appraisal and approval of EIA reports of investment projects.

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# AN OVERVIEW OF SOME EXTREME WEATHER PHENOMENA AND SOCIO AND ECONOMIC IMPACTS IN VIET NAM

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## Abstract

*Extreme weather includes unexpected, unusual or unseasonal weather, weather at the extremes of the historical distribution. Often, extreme phenomena are based on a location's recorded weather history and defined as lying in the most unusual percent. In recent years some extreme weather phenomena have been attributed to the human-induced global warming with a number of studies indicating an increase of natural, social and economic threats from extreme weather. This paper attempts to overview some extreme weather phenomena in Vietnam over recent years, present their social and economic impacts, and to recommend policy implications.*

**Keywords:** Extreme weather, climate change, natural disaster damages, social and economic impacts.

## 1. Introduction

Vietnam is one of the most severely affected countries by natural disasters and extreme weather in the Asia-Pacific region due to its geographical location and topography. In recent years, under the impact of climate change, extreme natural disasters have occurred more frequently, causing human losses and significant impacts on the economy. According to IMHEN and UNDP (2015), from 1990 to 2010, 74 floods occurred in the river systems of Vietnam, severe droughts, salinity intrusion, landslides and other natural disasters have also been hindering the development of Vietnam. In the past 20 years, Vietnam has suffered more than 800 natural disasters (an average 40 disasters/year) with increasing intensity and frequency causing great damages to economic, social and ecological dimensions, especially during 2005-2015 (WMO). Currently, Vietnam suffers annual losses of 1.4-1.8% of GDP annually due to natural disasters phenomena. The economic consequences are not only in the short term but also in the medium and long-term including reduced economic growth, employment, income, investment and trade. This paper tries to overview some extreme weather phenomena in Vietnam over recent years and their social and economic impacts, then some policy implications will be drawn.

## 2. Theoretical framework

In theory, a climate variable is considered to be a random variable with a value changing within a certain limit. This limit may be blocked or not blocked, on one side or both.

A weather variable is called extreme if its value domain centers on one side of the possible set of weather variables being considered. For example, the temperature in the air

(at some point in time) is an atmospheric variable. Its value range can range from the smallest  $\mathbf{a}_0$  to  $\mathbf{b}_0$ . Every day has a minimum value (minimum daily temperature) and a highest value (maximum daily temperature). The set of all minimum (maximum) daily temperature values is considered to be the set of possible values of a random quantity called the minimum (maximum) factors (or extreme climatic factors). Then, the minimum temperature will be in the range or range from  $\mathbf{a}_0$  to  $\mathbf{a}_1$ , while the maximum temperature will vary from  $\mathbf{b}_1$  to  $\mathbf{b}_0$ , with  $\mathbf{a}_0 \leq \mathbf{a}_1$  and  $\mathbf{b}_1 \leq \mathbf{b}_0$ .

Let  $X$  is a particular climatic variable with the distribution function  $F(x)$ , or the probability density function  $f(x)$ . Then, the set of  $x$  values of  $X$  satisfying the following condition is called the extreme set of values for  $X$ , or extreme climate:

$$\{x \in X, x \leq x_m | P(X < x_m) = p\} \quad (1) \quad \text{or}$$

$$\{x \in X, x \geq x_m | P(X > x_m) = 1 - p\} \quad (2) \quad \text{with}$$

$$P = P(X < x_m) = F(x_m) = \int_{a_0}^{x_m} f(x) dx \quad (3) \quad \text{or}$$

$$P = P(X > x_m) = 1 - F(x_m) = \int_{x_m}^{b_0} f(x) dx \quad (4)$$

That is, the probability of occurrence of events  $X < x_m$  or  $X > x_m = p$

When studying extreme elements and climatic phenomena, people often pay attention to its extreme values and call it extremist climatic extremes. Extreme climatic factors are defined as the values of extreme weather variables with a probability of occurring less than or equal to 10%. However, each locality or region has different application. For example, one can reduce the probability of appearing to 5% or even 1%, or increasing  $p$  to 15%, 20%, or even to 25% or 30%.

In many cases, for simplicity, instead of using the notion of probability, one can use the concept of percentile. The extreme climatic variables considered are usually the maximum or minimum climate variables. If it is a minimum climate, the values smaller than the  $q$  centimeter (for 100 centigrade) are considered extreme, and for the extreme climatic factors, values greater than  $q$  is considered extreme.

The  $q^{\text{th}}$  subdivision of the random variable  $X$  is the  $x$  value of  $X$  that satisfies the condition:

$$x_q = x[F(x) = q\%] \quad (5)$$

In other words, the solution of  $f(x) = q\%$ . For the minimum climate,  $q(\%) = p(\%)$  and for the maximum climate variables  $q(\%) = 1 - p(\%)$ .

In order to avoid confusion, attention should be paid to distinguishing the concept of the radical with the absolute concept of the absolute term of many years which is often referred to as the record of values.

### **3. An overview on some extreme weather phenomena in Vietnam**

There have been accelerated developments in weather and extreme natural hazards due to climate change recently. The intensity, time span and place of occurrence of these phenomena are no longer stick to conventional climate patterns. The catastrophic floods

have been recorded in the North, heat waves and severe droughts have been seen in the Central region, especially in the South, where traditionally known as temperate climate, have been suffering the lack of fresh water and serious saline intrusion. In this paper, we try to synthesize and analyze the evolution of dangerous meteorological phenomena, namely heat wave, drought, substantial rain and typhoon.

**a. Heat wave**

In the past 40 years, the average national temperature in each decade has increased at a rate of  $0.26 \pm 0.10^{\circ}\text{C}$ , which has been two times higher than the pace of global temperature rise in the same timescale (Nguyen Dang Quang et al. 2013). According to the research, the increase in winter temperature was greater than that in summer temperature, and the average temperature increase in the South was greater than that in the North (Fig. 1). In the South, while the lowest temperature at night ( $T_{\min}$ ) in the winter has increased significantly than the maximum temperature in the daytime ( $T_{\max}$ ), in several places in the South and islands, the opposite is true. As a result, fierce heat waves have been increasingly observed in the North and this phenomenon has been verified through measured data. Phan Van Tam et al. (2010) demonstrated that the number of hot days tended to increase at a national level from 1961 to 2007, and these figures even increased more (approximately 10%) between 1991 and 2007 at stations in the North East, the Northern Delta and the North Central Coast, in which the North Central Coast was the area having a majority of hot days (Fig. 2). The hot days on average of this area fluctuated from about 40 to 60 days per year, of which the highest number of hot days was 90 (Nam Dong station) and the lowest one was 20 (Thanh Hoa station). Apart from two coastal stations (Nha Trang, Phan Thiet), the number of hot days in South Central was similar to that in North Central Coast.

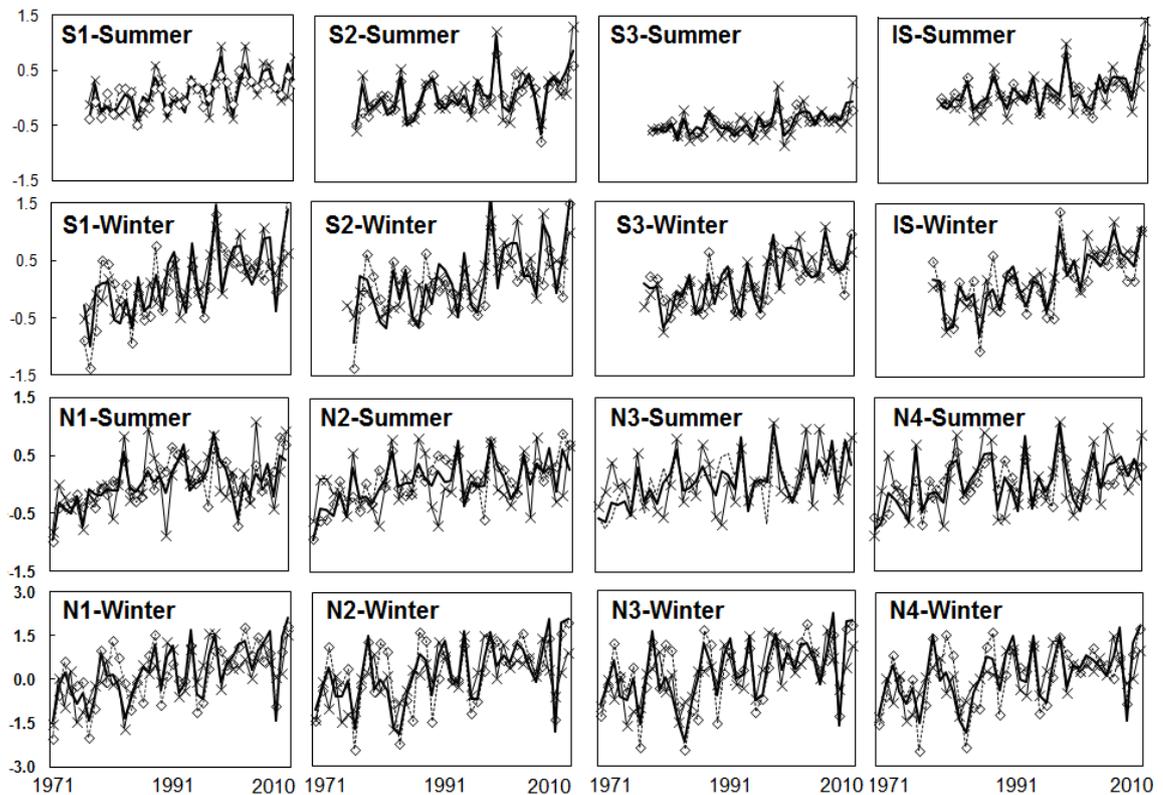
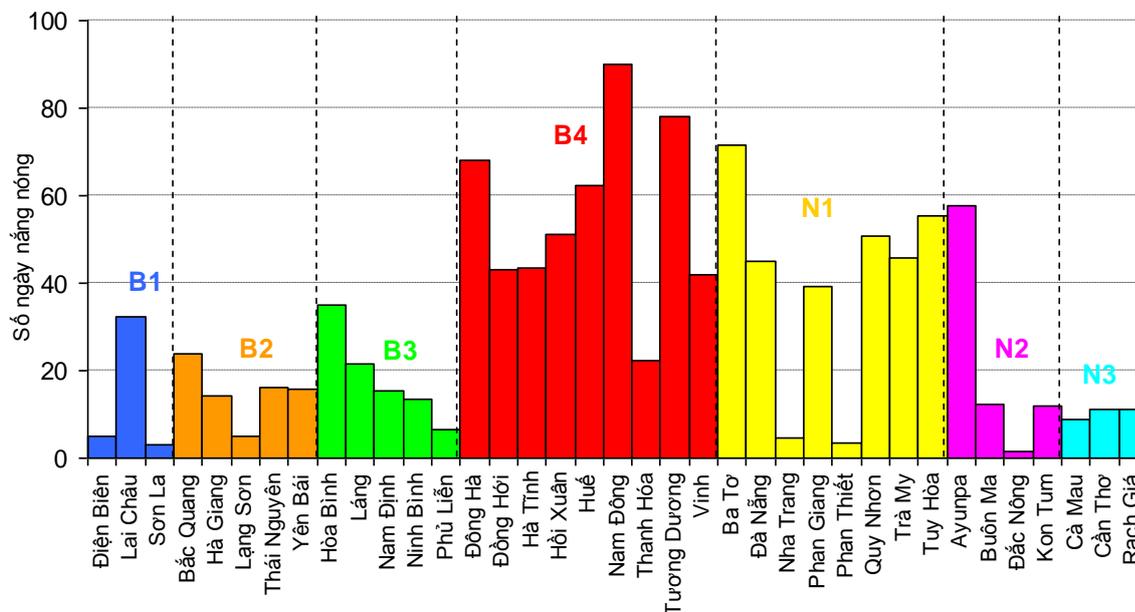


Fig.1. Standard deviation of average temperature over the climate zones of Viet Nam from 1971 to 2010. N1 - N4, S1 - S3: the northern and southern climate. The bold lines showed standard deviations of temperature on June, July, August, December, January and February; the light lines illustrated standard deviations of temperature on May, June, July, November, December and January; dotted lines represented standard deviations of temperature on August, September, October, January, February and March (Nguyen Dang Quang et al., 2013).

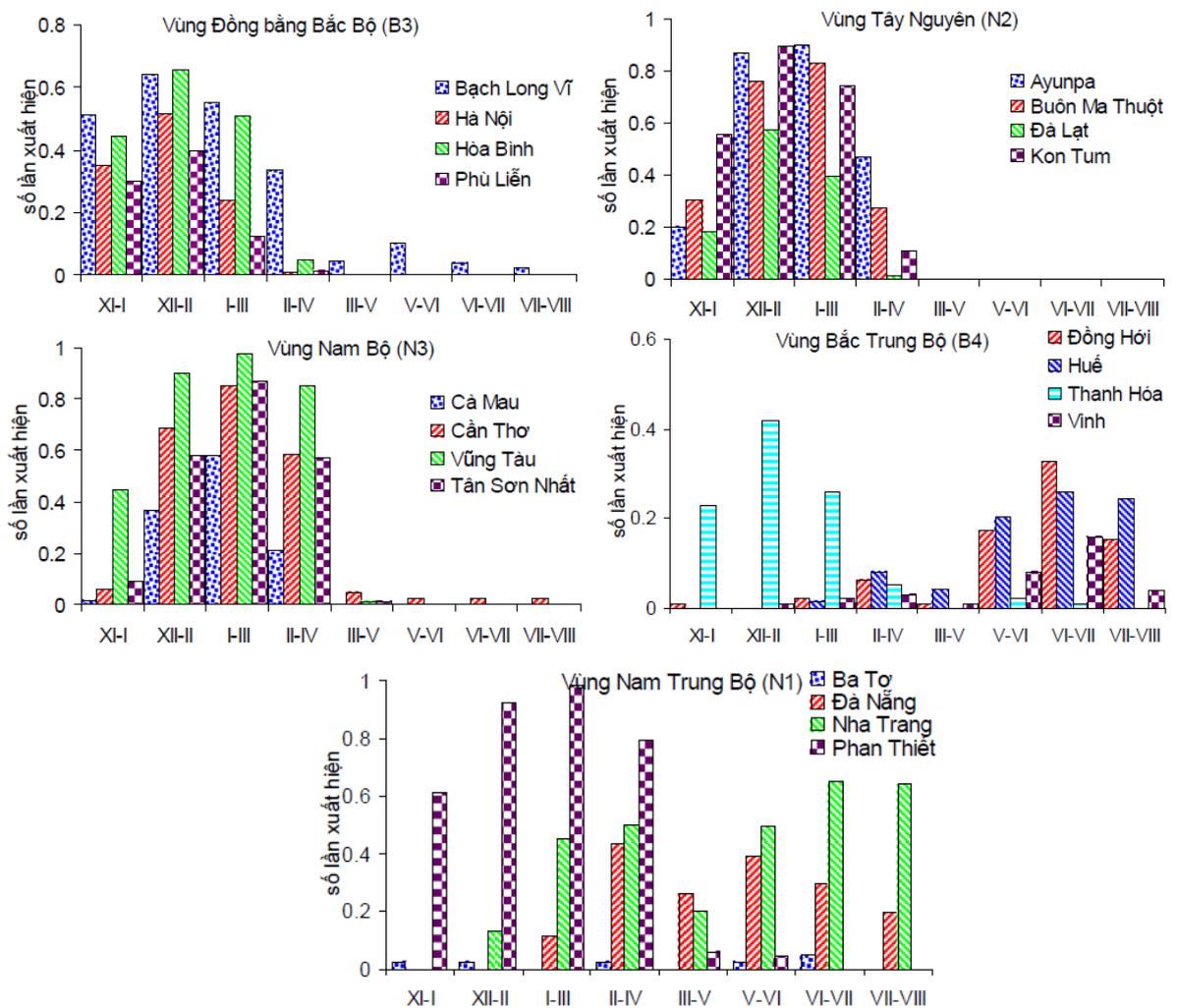


**Fig. 2. Annual sunshine days in some typical stations in climate zones (Phan Van Tan, 2010)**

The records of extreme heat are being broken easily in several places in Vietnam. In other words, the time span between two recorded heat waves is shortened and the next extreme heat is higher than that in the previous year. In 2010, in two consecutive months, June and July 2010, the highest temperature of the heat wave in Northern Delta and North Central generally fluctuated from 40<sup>0</sup>C to 41<sup>0</sup>C. The highest temperature recorded at Con Cuong station (Nghe An province) was 42,2<sup>0</sup>C (compared to the previous record was 42<sup>0</sup>C in 1980). In 2015, during the long-lasting heat wave on May, June and July 2015 in the same places, the recorded temperature in 2010 at Con Cuong station was broken, and the new record was 42.7<sup>0</sup>C. The highest temperatures during the heat wave of 2015 were commonly varied from 40<sup>0</sup>C to 42<sup>0</sup>C, and new records were updated simultaneously.

### b. Drought

Drought is one of the most common natural disasters in Viet Nam. Drought and water shortage have been occurred with greater frequency and intensity (Nguyen Van Thang et al., 2013). The severe droughts have taken place more often, with high frequency was mainly from January to April (winter rice crop) and from May to August (summer rice crop). Droughts in winter mainly occurred in the North, the South and Central Highlands; droughts in summer mainly occurred in North Central and South Central (Fig. 3).

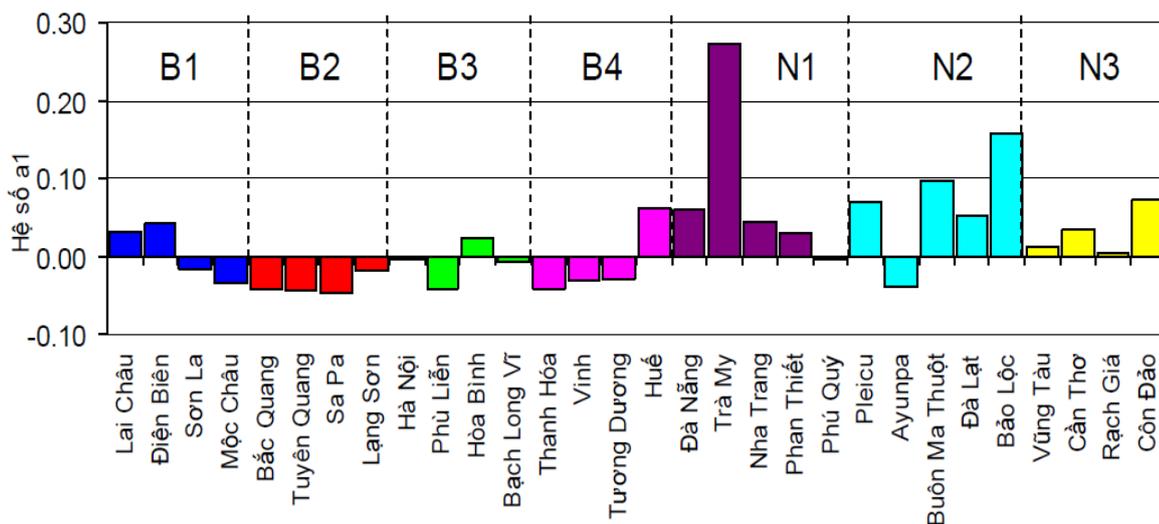


**Fig. 3. The frequency of seasonal drought (three consecutive months) in some typical areas (Phan Van Tan, 2010).**

At the national level, areas that suffered drought the least were mainly in the North East and areas suffered the longest span were concentrated in the South Central Coast (drought might last from January till August and September). In term of fluctuations, the figures for droughts in the North West were the lowest, while those of North Central and South Central were the highest. The frequency of occurrence of drought monthly and seasonally slightly differed. According to the statistics, water shortage in Central provinces and Central Highlands have been increasingly severe in the dry seasons recently. Some typical prolonged droughts took place in 2010, the water flow in the rivers and streams nationally was greatly lower than the average ones in several years; the water shortage was 60% to 90% in some places, water levels in many places in Central Vietnam were the lowest with the rare occurrence of 40 - 100 years/time. In 2005, the lowest water level in the record was seen on major rivers over the country. In the North, new records of lowest water level were updated in some major stations in Lo River, the downstream of Hong River in Ha Noi, and the downstream of Thai Binh River (Pha Lai). Similarly, the lowest water level of the data also is observed in the Central and the South, Ma River in Ly Nhan, DakBla River in KonTum, Cai Nha Trang River in Dong Trang, and Cuu Long River.

### c. Heavy rain

Rainy season starts in April and May and lasts until October and November, particularly the rainy season in South Central roughly ends in November and December. On average, there are about 25 showers of heavy rains across the country, the first heavy rains of the year usually occur in the North and the Central Highlands (in March and April), and later in other areas in the country. In the coastal zones, heavy rain moves from the North to the South over time and usually reaches a peak in months of the fall. Different from the relatively uniformly change patterns of temperature, heat and drought, the increase and decrease of rain in climatic regions in the past decades have random properties, lowering the statistical reliability (Nguyen Dang Quang et al. 2013). While many studies show an increase in the rainfall in the South in the last four or five decades (Endo et al, 2009; Phan Van Tan et al, 2010; Nguyen Dang Quang et al, 2013), the trend in the North was different. More specifically, some researches show that the rainfall in the North decreases uniformly (Endo et al, 2009; Phan Van Tan et al, 2010), whereas other research papers demonstrate an increase in the rainfall in some places at Northern Delta and North East (Nguyen et al, 2013). Furthermore, the research by Nguyen et al. (2013) demonstrated a decrease in the rainfall in Highlands, but the decrease is not proven statistical reliability. The difference between these results can be attributed to using different approach and the length of statistics, locations and the number of observed stations. More importantly, a general conclusion is brought about from among research on the trend of heavy rain in Viet Nam, there is a clear correlation between global warming reflected by sea surface temperature in the Eastern Pacific Ocean (the areas NINO 3.4) with changes in climatic conditions in Southern provinces of Vietnam.



**Fig. 4. The value of slope a1 of heavy rain data from 1961 to 2007 at typical stations (Phan Van Tan et al., 2010)**

Apart from research on the trend and development of rain, studies on heavy rain have also been conducted recently. These studies show that extreme phenomena, historical values together with human and economic losses are likely to increase (IPCC, 2013). The

observed data confirm that the number, intensity, and location of heavy rains are unusually high. For example, in the first half of October 2010, there were two torrential rains causing devastating floods in the history from Nghe An to Quang Binh provinces. The total volume of the rainfall within 10 days fluctuated from 700mm-to 1600mm, accounting for 50%-70%, even 80%-90% the annual precipitation. There were pouring rains in some places (for example, the rainfall in Tuyen Hoa on October 3<sup>rd</sup> was 470mm and that in Ba Don on October 5<sup>th</sup> was 540mm), and lasted for a long time with the highest intensity during over past 60 years. Consecutive floods triggered serious inundation in days, several places were flooded to 4m-6m, causing damage to people, property and traffic and irrigation constructions. The unusual torrential rains were not only in the rainy season but also took place in the dry season, particularly, the rain in March 2015 (March 24-27, 2015) in Thua Thien Hue - Quang Ngai with the average rainfall of 300-450 mm, and records of rainfall were set in several places. Among recent heavy rains, it is important to study the heavy rains in the North at the end of July and beginning of August 2015. The records of intensity were in narrowed areas, mainly occurred in some communes of Quang Ninh province. Heavy rains mainly took place in Cua Ong, Ha Long, Co To (Quang Ninh), while nearby locations were Hon Dau and Bach Long Vi (Hai Phong), the intensity of heavy rains was lower. The precipitation of Quang Ninh province generally fluctuated from 1000-1300mm, especially the figure for Cua Ong was approximately 1600mm; Bai Chay station registered the highest precipitation in 1960's data at 387mm (28/7/2015). The probability of this rare occurrence is estimated to be approximately 500 years.

#### **d. Typhoons and tropical depressions**

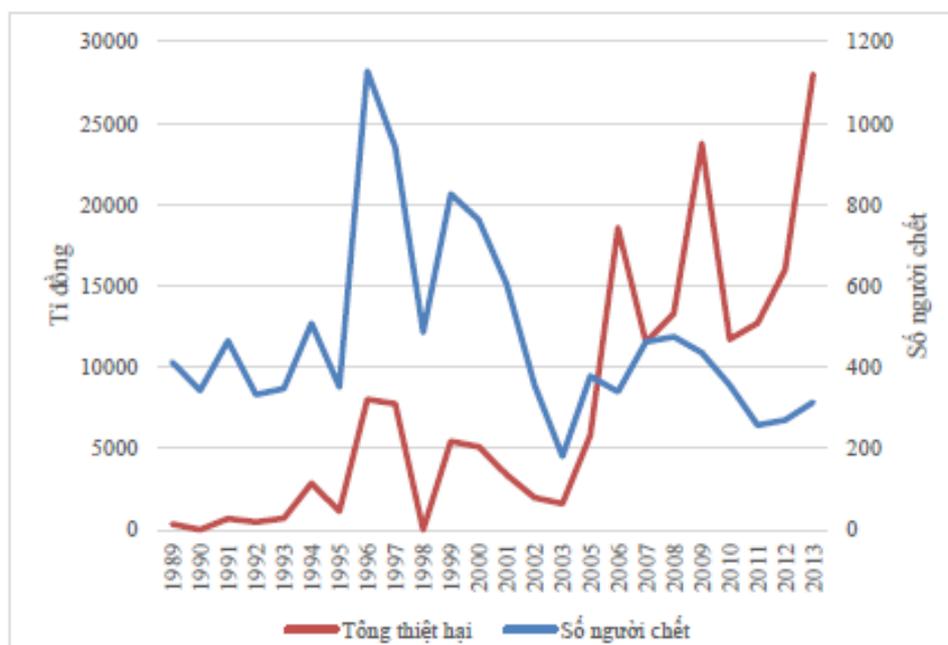
Meteorological extremes such as typhoons, tropical low pressure, cold spell, and winter freeze have also recorded new historical points. Firstly, unusual developments of typhoons and tropical low pressure should be taken into consideration - these phenomena are regarded as deadliest natural disasters in Vietnam. On March 2012, the No.1 typhoon (Pakhar typhoon) affected the Northern provinces in Vietnam. In fact, early typhoons that take place in March are rare (the last time this phenomenon was recorded was 31 years ago), and Pakhar typhoon was the sole phenomenon that still reached the typhoon level when it landed in Viet Nam during the past 61 years. In the same time, the No.8 typhoon (Son Tinh typhoon) did not follow climatic patterns when it landed in Thai Binh and Hai Phong provinces in last October with magnitude of 11-12 and the highest ones varied from 14-15. After that, the typhoon changed direction, moving in the Northeast along the coast of Hai Phong-Quang Ninh and eventually weakened into a low-pressure zone. This typhoon has caused strong winds and heavy rains in the Eastern provinces of North and North Central, seriously damaging people and properties. Hurricanes with magnitude of 14-15 seem to appear more in the South China Sea, such as typhoon No.6 (Megi typhoon in 2010 and Haiyan typhoon in 2013,...). 2017 was affirmed as the year with the greatest number of typhoons and tropical depressions in the past 50 years in the East Sea, including 20 typhoons and tropical depressions. These figures outnumbered that in 2013, in which

there were five typhoons and two tropical depressions landed in Viet Nam. On the sea, the huge waves recorded occurred during the North East monsoon and typhoons. On November, 2013 Haiyan typhoon caused waves which were 10 meters higher in the area between the South China Sea and the Central Coast of Viet Nam. The recorded wave was 4.5 meter at Bach Long Vi Island which occurred in the North East monsoon in January 2016.

#### 4. Social and economic impacts of extreme weather in Vietnam

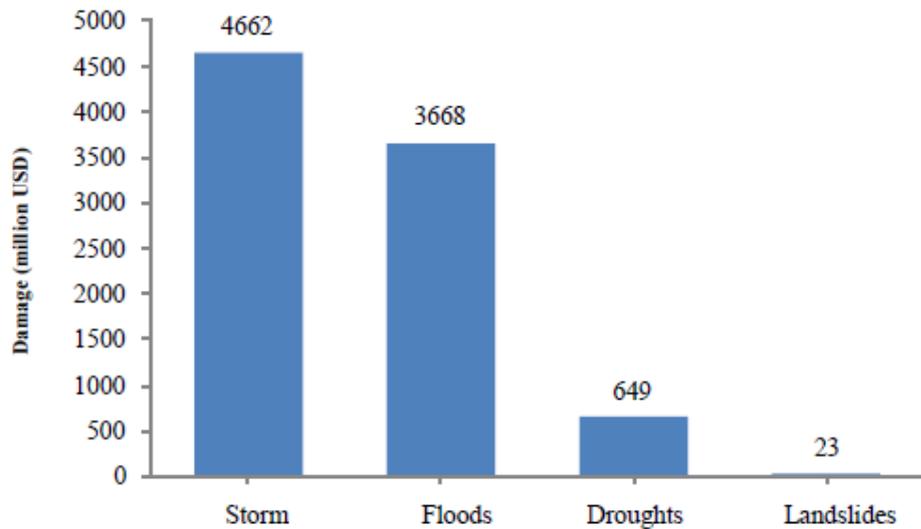
In Vietnam, the vulnerability of the natural and social system depends very much on the degree of danger of extreme weather, density, adaptability of exposed entities and some natural factors such as geology, geomorphology, terrain, hydrology, etc.

In general, since 1989 the number of deaths (social harm) and total economic loss (economic damage) due to natural disasters in Vietnam is complex, but overall there is a tendency to increase along with GDP growth. Over the last 30 years, natural disasters have killed and lost about 500 people, injured thousands, lost about 1.5% of GDP annually (Tran Tho Dat and Vu Thi Hoai Thu, 2012). Only in five years from 2002-2006, natural disasters caused about 1,700 people died, property damage estimated at VND 75,000 billion. The total value of losses caused by natural disasters in 2013 is estimated at nearly VND 30,000 billion (twice more than that in 2012), 313 deaths and 1150 injuries (GSO, 2013).



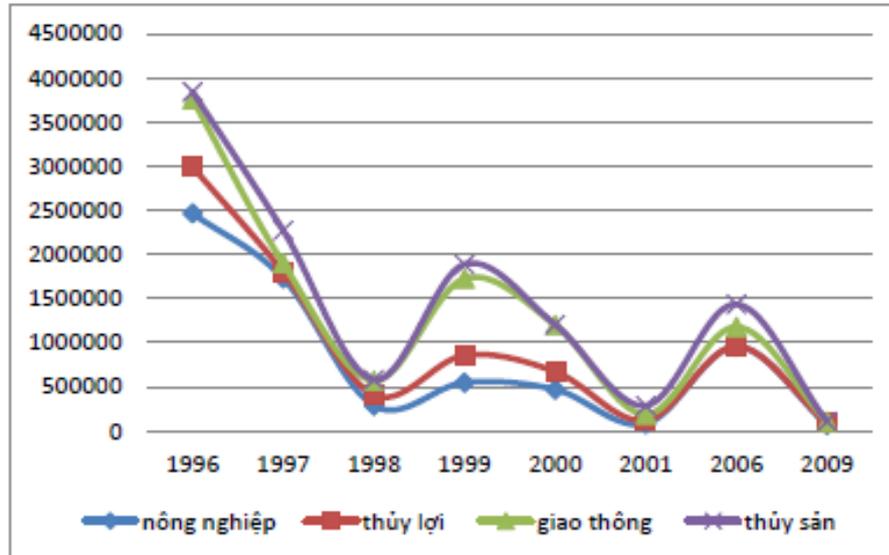
**Fig. 5. Economic losses and death caused by disaster 1999-2013 (SREX report Vietnam, 2015)**

Regarding damage by disaster types, Vietnam suffered most from tropical cyclones, floods, followed by droughts and landslides. During 13 years (1990-2012), tropical cyclones caused losses of nearly \$ 4.7 billion, floods costing nearly \$ 3.7 billion while droughts and landslides caused losses of 649 and 2.3 \$ millions, respectively. The indirect damage of floods is partly attributable to heavy rainfall during and after storms, as rainfall in storms can account for up to 25% of total annual precipitation in some coastal stations of Central Vietnam.



**Fig. 6. Economic losses caused by types of disasters in Vietnam (EM-DAT The international disaster databases, 2015)**

Climate extremes cause different losses to sectors of the socio-economic system. The impact of climate change (expressed as a percentage of GDP from high to low) for each sector (for 2010/2030) is as follows: Labor productivity is 4.4%/8,6%; aquatic products: 0.5% /1.6%; agriculture: 0.2%/0.4%; biodiversity: 0.1%/0.1%; The extreme weather (in 2010/2030) includes sea level rise of 1.5%/2.7%, hot and cold weather of 0.1%/0.3%; floods and landslides of 0.1%/0.1% (DARA, 2012).



**Fig.7. Loss (million VND) of some main sectors due to disasters form 1989-2009 (SREX Report Vietnam, 2015)**

Total losses due to natural disasters are highest for industries that are heavily dependent on weather, climate, and terrain, land, such as agriculture, fisheries, irrigation and transportation. If the sea level rises by 1 m without coping activities, most of the Mekong Delta will be submerged for long periods of time, and property damage is estimated at \$ 17 billion.

By the end of the 21st century, if the sea level rises by 1 m, 6.3% of Vietnam's area, about 39% of the Mekong Delta, over 10% of the Red River Delta and Quang Ninh, over 2.5% of the area Central and over 20% of Ho Chi Minh City area are at risk of flooding (MONRE, 2012). The area of agricultural land and aquaculture is most inundated (10,962 km<sup>2</sup>) when sea level rises by 76%, respectively, followed by wetland with 1,895 km<sup>2</sup> and 13%, forest and natural vegetation with 1,159 km<sup>2</sup> and 8%, and residential areas with 302 km<sup>2</sup> and 2%. Coastal industrial zones of the Mekong River Delta, the Red River Delta and the North Central Coast are the most vulnerable due to sea level rise of 1 m (The sea level rise of 1 m directly affects 16% of the population of the country, nearly 55% of the population in the Mekong Delta provinces; over 9% of population in Red River Delta and Quang Ninh; near the 9% of the population in the central coastal provinces and about 7% of the population in Ho Chi Minh City. At the same time, over 4% of the railway system, over 9% of national highways and about 12% of Vietnam's provincial roads will be affected. The highest level of sea level rise is in the Mekong Delta and the Red River Delta. According to UNDP (2012), among the developing countries, Vietnam is one of the countries most vulnerable to sea level rise.

The impact of sea level rise on 84 coastal developing countries by the six indicators of land use, population, GDP, urban size, agricultural land size, and swampy area shows that Vietnam is one of the five countries most affected by the 1m high sea level rise (Dasgupta et al., 2009). Moreover, the World Bank ranked Vietnam as one of 12 World Bank borrowers most affected by sea level rise due to climate change.

The impact of radicals on the community is also reflected in the decline in livelihoods. Nearly half a million Vietnamese have a primary income from fishing and other two million people with incomes associated with fishery. The livelihoods of these people depend on climatic factors and natural resources, so life is particularly uncertain and at risk from natural disasters as well as weather patterns. Provinces in the Mekong Delta and Central Coast are economically vulnerable as the majority of their income is related to fishing.

However, if adapting appropriately to extreme climate, Vietnam can reduce the negative impact of hazards and vulnerabilities. Flooding in the Mekong Delta is a phenomenon that occurs annually, bringing many benefits to people in the region such as supplying fishery resources, sedimentation for the Delta, increasing agricultural production for the production season, wash away the toxic substances accumulated in the lowlands and reduce the vulnerability caused by flooding here. Residents adjust to living with floods, production activities and activities change in the direction of adaptation, taking advantage of opportunities caused by floods, thereby reducing exposure to hazards, vulnerability to flooding.

## **5. Conclusion and recommendations**

Climate change is occurring and having broad impacts across the world. Climate change projections draw a grim picture of Vietnam's climate vulnerability in the coming decades. A transformation of different sectors-including agriculture, water resource

management, energy, fisheries, forestry, and infrastructure is needed to counter climate threats and enhance Vietnam's adaptive capacity. To improve disaster preparedness and build longer-term resilience, Vietnam should act now to adapt to changing climate. As in many countries, Vietnam's risk and vulnerability are intensified by unplanned urban development, inappropriate land use, and ecosystem degradation. Yet it is still possible for the country to correct course if its policy makers and communities take right and appropriate actions.

A holistic and integrated approach that includes both structural and nonstructural measures is proposed to address impacts of extreme weather and to promote longer-term resilience measures across key sectors. Tackling the impacts of all types of disaster risks nationally will require well thought-out strategic planning and coordinated implementation of medium- and long-term measures from a multi-hazard perspective. Such planning must be backed by sound local knowledge, scientific understanding (for targeting and prioritizing investments for technology development and adoption), infrastructure creation, and capacity building. To effectively address the extreme weather, an integrated approach using both structural and nonstructural interventions (policies, capacity building, information, technologies, infrastructure, and services) is needed.

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# SUSTAINABLE AGRICULTURE DEVELOPMENT: ECONOMICS AND ENVIRONMENT ASPECTS IN VIETNAM

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## **Abstract**

*Over the past three decades of agricultural renovation since 1989, Vietnam has made great strides in boosting agricultural development. Its agricultural production value, added values, product volume, and exports have grown significantly. However, the growth model was mainly extensive manner, natural resources intensive-driven; Growth of this sector tends to slowly down due to spontaneous and small-scale production model, weak technological application in agro-forestry-fisheries, the stagnation of expansion of arable lands, scarcity of water resources, advancing environment degradation, negative impacts of climate change, competition between food crops and bio-energy crops in the use of limited natural resources, rapid urbanization and a declining agricultural labor force. This study analyzes the current development of sustainable agriculture in Vietnam toward economics and environmental aspects; based on this analysis, the study gives some policy implications boosting sustainable agriculture development in Vietnam in the next period.*

**Keywords:** Economics aspect; environmental aspect; sustainable agriculture development.

## **1. Introduction**

Agriculture in Vietnam has changed dramatically, especially since the Doi Moi (1989, in the agriculture sector), its productivity increased significantly due to mass adoption of new technologies, mechanization, chemical use, specialization and government policies that favored maximizing production. Although these changes have had many positive effects and reduced many risks in farming, there have also been significant costs. Arresting among these are soil depletion, groundwater contamination, problems of quality and food safety remain-resulting in low export prices and concerns among domestic consumers, the decline of family farms, continued neglect of the living and working conditions for the farmer, increasing costs of production, and the disintegration of economic - social conditions in the rural area.

Previous studies also showed that agricultural growth has been slowing down and that added value created in the sector as well as benefits to farmers do not match the efforts

made. Meanwhile, the growth in population, the process of industrialization and urbanization as well as the complexity of climate change makes the resources devoted to agricultural production shrunk seriously, significant impact on food production and satisfy to food demand for both the domestic and export market. The gap between the current status of agricultural production and the new requirements for development is huge; agriculture development is facing the pressure to reform the sector towards sustainable development accompanied by greater benefits to farmers. Addressing these challenges requires coordinated responses and concerted efforts among all stakeholders, including the public and private sectors.

This study analyzes the current development of sustainable agriculture in Vietnam toward economics and environmental aspects; based on this analysis, the study gives some policy implications boosting sustainable agriculture development in Vietnam in the next period. The structure of the article consists of five parts, including (i) introduction; (ii) conceptual framework; (iii) methodology and data; (iv) The current state of sustainable agriculture development in Vietnam: economics and environmental aspects; and (v) conclusion and policy implications.

## **2. Conceptual framework**

Sustainable development has come to the forefront of scientific debate and policy agenda. The World Commission on Environment and Development, known as the Brundtland Commission (1987) proposed the most extended definitions for sustainable development and since then has rightfully gained its place in the vision, mission, and strategy of organizations, locals, and governments. Sustainable agriculture is widely discussed and is viewed in the international forum as essential for the transition towards global sustainable development. Sustainability in agriculture relates to the capacity of an agroecosystem to predictably maintain production through time. A key concept of sustainability, therefore, is stability under a given set of environmental and economic circumstances that can only be managed on a site-specific basis. If the perspective of sustainability is one of bias against the use of biological and chemical technology and espouses a totally natural ecosystem, then agriculture as a practice is already excluded. If on the other hand, the perspective of sustainability is one of preservation of non-renewable resources within the scope of the agricultural enterprise, then the objective is not only achievable but good business practice and good environmental management. An equally unnatural and parallel phenomenon has been the exponential growth in human population, with associated demands for both food and shelter, which have often exceeded the natural carrying capacity of the land. Based on the premise that human population growth will not be constrained as a result of food shortages due to overriding social values, in this context technology play the key role in sustainable agriculture, including (i) increase agricultural productivity; (ii) sustainable; (iii) the basis for sustainable agriculture (Luu and Nguyen, 2017).

A scale system for evaluating the sustainable development of agriculture as well as measuring its economic pillar and environment is very diverse, coming from situation of

each region, local and national production system. In this study, the criteria for evaluating the development of sustainable agriculture is used on the basis of criteria proposed by the evaluation framework for sustainable development proposed by the United Nations (2001), EU Commission (2003) and Vietnam (2012) associated with the targets by previous scholars (Strauss, 1986; Alves-Serodio, 1998; Haddad and Bouis, 1991; Von Braun, 1997; De Haen, 1997; Swaminathan, 1991; Gillis et al., 1992; Reijntjes et al., 1992; Becker, 1997; Smith and McDonald, 1997; Herzog and Gothsch, 1998; Sands and Podmore, 2000; Zhen and Routray, 2003; Rasul and Thapa, 2003; Nambiar et al., 2001; Trisorio, 2004; Rao and Roger, 2006; Van Cauwenbergh et al., 2007; Pretty et al., 2008; Gafsi and Favreau, 2010; Hayati et al., 2010; Castellini et al., 2012; Hřebíček et al., 2013; Van Pham and Smith, 2014; King, 2016; Latruffe et al., 2016).

The indicators for assessment of the economics aspect, including: (i) production and growth rate of the sector (growth of the production value and GDP should remain stable in long-term and avoid fluctuations or shocks come from outside including weather, markets and institutions is a manifestation of the sustainable development); (ii) The efficiency of growth (productivity growth of resources, including labor, land, water, capital, and total production factors (TFP)); (iii) The restructuring of the agriculture sector (the structure of the sector, agricultural enterprises development). The indicators for the assessment of the environmental aspect, including: (i) Resource depletion (measure the impact of agricultural production on the decline in the quantity and quality of the agroecological. Decline in the forest area with no relationship to expand agricultural land; nutrient balance of land, water quality, and air quality are maintaining stability and does not tend to decline annually are expressions of developing sustainable agriculture; (ii) Greenhouse gas emissions (measure volume and speed of equivalent CO<sub>2</sub>sq discharged into the environment due to the operation of agricultural production without increasing which mark the expression of a sustainable agricultural development).

### **3. Methodology and data**

According to Bell and Morse (2001), sustainability indicator selection divided into two broad methodological paradigms, including top-down (expert-led) and bottom-up (community-based). This study also applies expert-led indicator selection in choosing economics and environmental indicators of sustainable agriculture development in Vietnam.

Data used in the study was collected mainly from General Statistics Office of Vietnam and the Ministry of Natural Resources and Environment in the period 1990-2016 and other related reports, in constant 2010 prices. Capital reserve (K) was accounted for a depreciation rate of 5%/year (Tran, 2005).

## **4. The current state of sustainable agriculture development in Vietnam: economics and environmental aspects**

### ***4.1 Economics aspect of sustainable agriculture development***

#### *Production and growth rate of the sector*

For the past 30 years (1990-2016), agricultural and rural areas have still continued playing an important role in the economy with approximately 70.4 % of Vietnamese

population live in rural areas, above 60% of the household depends on agriculture sector as the main economic activity and above 47% of labors in the agricultural sector. The contributing ratio of the sector has plummeted rapidly from 39.1% in 1990, down to 24.5% in 2000, 19.0% in 2010 and 16.3% in 2016. Despite the decline of contributing ratio in GDP volume, the growth of the sector is generally rather more stable than others; while labors in this area have a tendency to reduce proving that the productivity of agricultural labors has improved.

The growth rate of agricultural production averaged 4.8% in the period 1990- 2016. The high growth rate after Decree 10 reached 4.5% in the period 1990-2016. From the period 1991-2000, Vietnam began to have the redundant production to export compared to the previous insufficient domestic period in supply. However, then the growth rate of production value tended to reduce markedly, averaged at 3.57%/year in the period 2001-2016. The decline in the value of agricultural production in that period resulted from the impact of international economic integration, an unstable growth model driven, inefficient exploitation of comparative advantages, while investment went down and the products were becoming more and more difficult to compete in the market, the sources for the explosion of agricultural production growth was no longer sustainable in both quantity and quality.

Although the value of total production has steady growth, real GDP value didn't show the efficiency of production. The proportion of GDP was hardly improved compared to the production value of the agricultural sector, that proves the efficiency was reduced from 89,3% in 1990 to 73,1 % in 2000 and 69,1% in 2016. This result is due to the productivity of almost land, labor, fertilizers and other static factors that are gradually tipping; the saturation makes an increment of production more expensive.

The GDP agricultural growth rate was estimated to reach 3.68% in the period 1990-1995, 3.98% in the period 1996-2000, 3.86% in the period 2001-2005, 3.53 % in the period 2006-2010, and 2.77 % in the period 2011- 2016. In general, the period of 1990-2016 agricultural GDP increased 3.53%/year averaging. The growth rate of agricultural production was rather low but stable in comparison to other economic sectors. Agricultural growth recorded beginning periods resulted from the positive impact of innovating policies, land, and potential crop productivity, but due to the restrictions on productivity, investment, the impact of international economic integration in the later period the rate of growth went down. Since 2006, because of the impact of the world economic crisis, both industry and services sector has faced many difficulties making the growth rate remarkably recline, the only agriculture has still remained increasing rate, that helps reduce the difficulties in the economy. However, in the period 2009-2016, the production and consumption of agriculture still faced a lot of difficulties, the growth rate seemed to level off due to less investment and policy support, negative effects of the climate change.

#### *The efficiency of growth*

Although the productivity of agricultural labor (agricultural GDP per capita labor) is improving in the recent period, it is still lower than the whole economy and compared with the industry and services sector. The average agricultural labor productivity was

estimated to reach 9.0 VND million/person/year in the period 1990-1995, and about 10.39 VND million/person the period 1996-2000, amounted to 12.41 VND million/ person in period 2001-2005, in the period 2006-2010 reached 14.48 VND million/ person and 17.42 VND million/person during the period 2011-2016. The proportion of labor in agriculture is still high, the scale of agricultural production is small, transferring the rural economy and agricultural production towards higher value, but slowly, decreasing social investment in agriculture, the low quality of the agricultural labor force is factored causing a slow labor productivity improvement.

In Vietnam, land productivity has increased by 40% in the period from 2004-2016 on all crops in terms of quantity and thus the next major efforts should focus on activities which improve quality and diversification into products of high-value crops to create more value on the same unit of production area. Approximately 80% of the water reserve is used for agricultural production, creating significant pressure and more and more increasing toward the available water resources of the country consists of nearly 80% irrigated areas devoted to rice, crops, maize, coffee, and rubber, but each plant accounted for only 3% of area irrigated nationwide (Organisation for Economic Co-operation and Development, 2015).

ICOR of the agriculture sector is maintained at a relatively low and stable rate in the period 1990-2016, ICOR in agriculture tends to increase slightly and was estimated to reach 3.5 in the whole period. The average ratio during the period 1991-1995 is at 2.2, rising to 4.0 period 1996-2000, during the period from 2001 to 2005 increasing by 4.2, in period 2006-2010 period reducing to 3.7 and remaining stable at 4.8 in period 2011-2016. The increasing trend of ICOR in recent period shows that investment efficiency tends to decline, the cost of capital for growth is becoming more expensive.

The transformation of TFP and other factors with agricultural growth in the period 1990-2016 were fairly clear. The volatility of TFP, the quality factor of growth was instability due to fluctuations in the business cycle of the economy in five quite distinct periods:

Period 1991-1995: The contribution of the labor factor is dominant, the contribution of capital is quite significant when initially be unleashed on land use, open market economy, while the contribution of TFP recorded initially shown the initial success of the innovation process, open economy, exports and FDI rapid growth. The contribution of capital, labor, and TFP in this stage was estimated to reach 1.4, 2.5 and 0.3, respectively. Period 1996-2000: Trend evolutions of factors contributing to agricultural growth in Vietnam are quite stable under the same scenario as the previous period. Capital contributed increasingly (1.4 to 3.5) due to the intensive investment of production inputs such as fertilizers, pesticides, mechanization, irrigation infrastructure, new varieties from the producer. The contribution of the labor was downturn due to the impact of the restructuring of labor to the industry and services sector (2.5 to 2.3). Meanwhile, TFP contributed negatively (0.3 to -1.8) due to the impact of the Asian economic and financial crisis. Period 2001-2005: Continued to expand production trends and the role of the factors which is crucial, but fell (3.5 to 2.3) by the productivity of capital gradually tipping factor. The contribution of the labor factor fell sharply (from 2.3 to 0.7) due to the strong

movement of labor into the industrial sector and services. TFP gradually been recorded and has grown rapidly (-1.8 to 0.9) along with the general recovery of the economy. Period 2006-2010: The agricultural sector and the economy are strongly influenced by the global financial - economic crisis. Agricultural growth and its growth factors are falling, capital reduction (2.3 to 1.2), labor rose sharply (f0.7 to 2.1) and TFP (0.9 to 0.3). Period 2011-2016: TFP rebounded along with the recovery of the economy (0.3 to 1.4) serves as the impetus for growth in the capital and labor factors gradually tipping and the sharp decline in the growth rate.

#### *The restructuring of the agricultural sector*

The structure of agriculture is moving away from traditional manufacturing with mainstream cultivation to develop animal husbandry, handicrafts, and services. However, the level shifting is very limited during the period 1990-2016 when, average crop subsector accounted for 75.40%, while livestock accounts for 22.40%, while services account for only 2.20 % of GDP of the agricultural sector. This structure shows a lack of sustainable growth model when the manufacturing industry is still the dominant crop sector, resource intensive, causing pressure to ensure sustainable development in this sector. Crop sector only grew by 2%/year because rice is still the main crop, although rice production rose sharply, but the added value is not high, both in production and processing, both in absolute value and relative value, and also under the strong impact from climate change makes production of rice and many staple crops decline. The livestock sector has changed slightly, from 19.2% in the period 1990-1999 tends to increase the average of 23.1% in the period 2000-2009, since then the proportion contributed livestock industry continues to grow, the period 2010-2016 reached 26.1%. However, the growth rate is not stable, mainly due to the impact of the epidemic, concerns about the quality of consumers will prohibit the use in livestock, food safety, and the relative price decline. Service industry almost no transformation, or even decline, the average ratio from of 2.7 in the period 1990-1999, down to 2.0% period 2000-2009, and down 1.7% in the period 2010-2016.

A number of agricultural enterprises tend to increase the period 2006-2016, average 6.91%/year and 1,740 enterprises in 2016 compared with a total of 581,085 enterprises of the whole country, accounting only 0.3%. Number of businesses too small means that the driving force for the growth of the industry will restrict and develop enterprise will be one of the key policy focuses on improving capacity through appropriate policies aimed at increasing investment by enterprises. Also, among the agricultural enterprises as the end 2016, there are 138 state enterprises after innovation, acquisitions, and with the management and ownership of resources, along with the access policies more favorable, this group of enterprises should be interested in improving the efficiency of operation. Regarding the quality of business: In total 1,740 agricultural enterprises as of 2016, there are 81.85% of the enterprises are micro and small enterprises with capital below 20 VND billion and only 17.90% with a capital of 20 VND billion. Similarly, more than 95% of agricultural enterprises are micro and small scale under 200 employees and only 5.0% are medium and large enterprises. The scale of limited capital and labor will make the constraint to take advantage of economy of scale, business difficulties, as well as weak competitiveness.

## ***4.2 Environment aspect of sustainable agriculture development***

### *Degradation of natural resources in agricultural production activities*

Conversion of forests to agricultural land is mainly due to the expansion of the area of production of export commodities such as coffee and natural rubber. This is especially serious in the Central Highlands where nearly 79% of new rubber plantations grown on natural forest land (Organization for Economic Co-operation and Development, 2015). But, in the period 1995-2016, while GDP growth rate of 3.5%, the area of agricultural land growth rate increased 1.84% to the same period shows that agricultural growth was less dependent on arable land, land productivity has improved during this period showed positive expression of sustainable development.

Evaluation of the quality status of land in the agricultural sector and rural areas still responds well to the agricultural production, residues of plant protection products and heavy metal are still lower than the threshold according to the standard criteria of the Ministry of Natural Resources and Environment (2008). According to statistics, only about 30% of land resources are good quality, the mainly alluvial soil in the Red River and Mekong Delta, 50% of the remaining area is weak on the soil fertility, is classified as poor soil with low nutrient, high penetration; sour; salty; high aluminum; and gray. Addition, unsustainable practices of land use caused consequences initially for quality agricultural land, the land area is degraded tends significantly with more 50% of the land area affected, particularly in agriculture takes 100 thousand to 120 thousand hectares each year (Ministry of Natural Resources and Environment, 2014).

Production and crop yields have led to the rising demand for fertilizers and plant protection chemicals. In Vietnam, the efficiency of fertilizer use is only reached averaged 45-50% with nitrogen, 25-35% of phosphate and 60% of potassium, the rest is lost and inefficient use, which makes land environment agriculture tends pollution, ecological imbalance, soil acidification, and loss of production capacity. The estimated risk of 50% protein, 50% potassium and approximately 80% of the phosphorus surplus from fertilizer use improper techniques; addition, farmers still use many kinds of unquality fertilizers and plant pesticides, which are not guaranteed, registered, clones labeling and incorrect volumes in packaging on the market were directly or indirectly pollute the soil environment, emissions of greenhouse gases and simultaneously increasing production costs (Ministry of Natural Resources and Environment, 2015).

Along with land degradation, the status of early saltwater intrusion, deep infiltrate, and high salinity occurred and maintained commonly in a long time in the provinces of the Mekong Delta decline the area of productive land, causing serious impact to ensure national food security. Depth saltwater intrusion combined with declining water resources in downstream significant influence to many lands in agricultural areas such as in the central region, each year about 120 thousand hectares of rice were flooding and over 62 thousand hectares of crops were flooding; at Northwest in just 6 months of the rainy season every year, the amount of soil loss account for 75-100% of the total erosion of the year, remaining below the 25% of soil erosion occurred in the period of transition from the dry to the wet season or from the wet season to the dry season (Ministry of Natural Resources and Environment, 2014).

Unsustainable activities in agricultural production make water quality in some areas has phenomenal local pollution as the water contains suspended solids, organic matter, heavy metals and microbial contamination. Groundwater quality in rural areas depends on the geological characteristics of the reservoir, permeability and leakage surface water from animal husbandry, agriculture, and villages as well as the change of purpose land use and unreasonable water extraction. Based on self-washed and cleaned up ability, the environmental status of water remains within the limits permitted by the standards of the Ministry of Natural Resources and Environment (2014). However, groundwater in some areas has signs of organic pollution ( $\text{NO}_3^-$ ,  $\text{NH}_4^+$ ), heavy metals (Fe, As) and particularly microbial contamination (Coliforms, E.Coli). A few parameters have exceeded the allowed level and tend to deteriorate, annual estimated that up to 50% - 70% of inorganic fertilizer could not be absorbed by plants, and release to the environment (Ministry of Natural Resources and Environment, 2014). Addition, the wastewater from operations of intensive agriculture practices contains harmful ingredients such as plant protection chemicals, chemical fertilizers have caused the risk of environmental contamination soil, groundwater and surface water in the areas around (Ministry of Natural Resources and Environment, 2015).

Air quality in the rural areas is quite good, a lot of areas have no signs of the population; however, in some rural areas in the Central Highlands, where the air is affected by the coffee processing, while in other areas, farmers often burn straw and other biomass in the field causes the haze in the areas around. The burning of the straw outdoor is not controlled burning process, in which outputs are mainly gases such as  $\text{CO}_2$ , CO,  $\text{NO}_x$ , dust and aldehyde compounds, which has caused adverse effects to the health. Meanwhile, the farm is also one of the sources of increased pollutant air in rural areas due to disposal waste is a ineffective way and tend more and more serious fact (Ministry Natural resources and Environment, 2015).

#### *Greenhouse gas emissions from agricultural production*

Sources of emissions of greenhouse gases (GHG) in agriculture are mainly methane ( $\text{CH}_4$ ), nitrous oxide ( $\text{N}_2\text{O}$ ), carbon monoxide (CO) and oxides of nitrogen ( $\text{NO}_x$ ) from operations breeding, cultivation, agro-processing. Total GHG emissions in agricultural production were estimated to reach 56.7 million tons of  $\text{CO}_2$  equivalent in 2000, 88.35 million tons in 2010, 466.0 million tons in 2020 and 760.5 million tons in 2030 (Ministry of Natural Resources and Environment, 2014; Nguyen and Dinh, 2014).

Rice cultivation is the main source of greenhouse gas emissions in agriculture, including traditional practices such as irrigation, flooded practice, organic fertilizers have caused serious greenhouse emissions (50.49%), arable agricultural land (26.95%), use of chemical fertilizers (9.69%), burning of waste on the farm (2.15%). GHG emissions from burning agricultural waste were estimated to reach equivalent to 2.8% by 2020, 7 million hectares of rice cultivation with an output of about 41.2 million tons, an equivalent 41.3 million ton emission of straws. Currently, farmers' practices in burning straw still maintain commonly when there is only 38.7% of households have treatment of straws after harvest (Ministry of Natural Resources and Environment, 2014; Nguyen and Dinh, 2014). Each

year, the livestock sector dismisses about 75-85 million tons of waste gases, of which CO<sub>2</sub> accounted for 9%, 37% CH<sub>4</sub>, 65% NO<sub>x</sub> and remaining of H<sub>2</sub>S, NH<sub>3</sub>, H<sub>2</sub>S and NH<sub>3</sub>, which is about 30-40 times higher than the permitted threshold. CO<sub>2</sub> from livestock, mainly arising from the combustion of fuel to run machinery used for cattle and poultry feed. CH<sub>4</sub> arising mainly from the fermentation of food in the rumen of ruminant animals and feces of cattle. Greenhouse gas emissions from livestock tend to increase and is estimated to reach 24.36 million tons by 2020; factors such as the quantity and weight of cattle, and the quantity and quality of feed, methods of control and waste treatment in animal husbandry will effect on the facts (Ministry of Natural Resources and Environment, 2015).

## **5. Conclusion and policy implications**

The growth model was mainly extensive manner, natural resources intensive-driven by the agricultural sector in the period 1990-2016 in Vietnam has expanded its environmental footprint. Therefore, policies should focus on the next period, including:

Apply irrigation charges and environmental taxes for farmers, agricultural businesses to cover operating and maintenance costs to help reduce the state budget and improve the motivation of irrigation enterprises in the supply of higher irrigation service quality.

Strengthening surveillance, compliance, and enforcement of the Law on Environmental Protection (2014). Strengthening education and extension services to help farmers understand the benefits of implementation of the regulations on the environment, reducing production costs through reduced use levels of chemicals in production activities.

Develop market of hi-tech and organic agriculture, aim to supply needs of food and nutrition security and adaptation to climate change, urbanization, and industrialization as well as help solve the problem of natural resources, meet the requirements of the market, food hygiene and safety, improve economic efficiency.

Control greenhouse emissions in rice cultivation, control of plant areas by concentrating in areas which are intensive, effective, productive, and favorable for scientific and technological adoption. Converting inefficient rice areas for other purposes. Promote the transfer sustainable agriculture technologies to farmers, such as improved rice intensification the package solution “1 Must Do, 5 Reductions”, IPM, VietGap, GlobalGap, organic rice, high-tech agriculture, agriculture 4.0.

Monitoring of greenhouse gas emissions in the livestock, control the number and weight of livestock and poultry; Improved quality of livestock feed, change the feed ration, using cake nutrition in order to improve productivity and reduce their emissions of greenhouse gases.

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# AGRICULTURE AND HUMAN IMPACT ON ENVIRONMENT IN INDAW GYI AREA: CASE STUDY IN MOHNYIN TOWNSHIP, KACHIN STATE, MYANMAR

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## **Abstract**

*This study is agriculture and impact of socioeconomic activity on Indaw Gyi Lake, close to Hpakant jade mine is huge potential agricultural productive area and. Rain fed agriculture is important socio-economic sector and a variety of crops are grown. Cropping pattern and harvest depend upon topography and climate variation. Pasture management, indigenous crop varieties and agroforestry, socioeconomic activity, soil and environmental conservation surveyed are needed. Run-off and serious soil erosion resulting in Indaw Gyi Lake, strategies to establish ideas and eco-friendly farming in watershed area need to be surveyed. Impacts of human activities and innovation action plans are an important factor related to watershed protection issues. Sustainable management on agriculture is the basis for analysis and implementation of alternative eco-friendly and agroforestry development models in the study area. Soil erosion from gold mines is highly related activities. Logging is major challenges of the Indawgyi Lake. Increasing newcomers stand by fishing in Indaw Gyi Lake and jade mine related jobs need to be studied.*

**Keywords:** climate variation, cropping pattern, impacts of human activities, Indaw Gyi Lake, rain fed agriculture, run-off and serious soil erosion, watershed protection.

**Aim and Objectives:** This paper is focus on current situation of agricultural practice and environmental issue in Indaw Gyi area, Mohnyin Township,. Food security, socioeconomic development and environmental sustainability of Indaw Gyi Lake by means of eco-friendly crops production is major aim of the study.

**Objectives:** - to study current situation of agricultural activity, variation climate, to analyze market potential agricultural practice and crop pattern, to observe impact economic activity on Indaw Gyi Lake, to discuss comprehensive way of agricultural landscape.

## **1. Introduction**

This study is agriculture production, market potential and impact of socioeconomic activity on Indaw Gyi Lake in Mohnyin Township, Kachin State. It is situated on the way to Hpakant jade mine, potential agricultural productive area. Total population was 183,682 in 2016. It is composed of (29) village tracts, 105 villages and

5 quarters. Rain fed agriculture by means of utilization of animal power and small scale machinery and production is mainly for local consumption and for local markets in Kachin State. Agriculture is important socio-economic sector in Mohnyin Township and a variety of crops are grown. Its cropping pattern reflects in variation climate and topography. The main crops are rice. Cereals, oil seeds and pulses variety are grown in all parts of the area.

**2. Literature Review:** Literature review is carried out before field work in Mohnyin area. Review studies related to the agriculture, land use, crop cultivated patterns and crop combination, agricultural productivity and development, planning and physical constraint, soil classification. Agricultural geography covers a large segment of economic geography and environmental aspects are emphasized.

**3. Materials and methodology:** The qualitative and descriptive research technique is used. Official data and intensive field works were organized in May 2016-17. During the field work, informal interviews and discussion with the authority persons in Mohnyin Township and personal observation were undertaken. Source of official data are obtained from Immigration Department, Agriculture Department, and Meteorology Department in Mohnyin.

Based maps: One inches scale topographic maps (1942)-92 C/SW and Google earth maps are used.

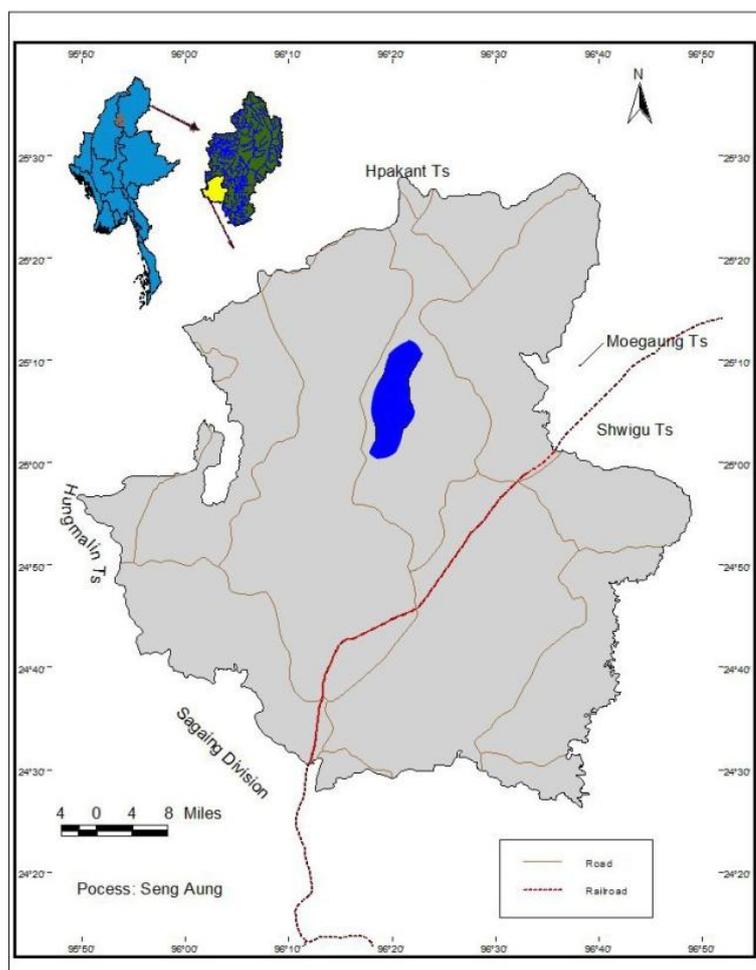
The structure of field work was designed by GIS technique to produce maps and figures.

**4. The result: Result** would be advantaged for teaching and research in agricultural geography and economic geography as environmental issues, contributing local and regional sustainable development toward sustainable local socioeconomic development function and environmental sustainability in Indaw Gyi Lake environment.

## **5. Geographic landscape**

### **5.1 Location:**

Mohnyin Township is situated in the western part of the Kachin State, and which lies between latitude of 24° 30' 46" N - 25° 26' 59"N and longitude of 96° 02' 12" - 96° 46' 03" E. It's an area of 2578.51 square miles (1,650,240 acres), wide valley plains and surrounded by mountain ranges. It is bordered with Mogaung and Shwigu on the east, Sagaing Division and Hungmalin Township on the west, Hpakant Township on the north. Mohnyin Township is mountainous area and mountains are running from north to south. The total length of north to south is over 50 miles and east to west is over 40 miles. Topographically, it is located at 685 feet height above sea level. The highest range is Wa Baw mountain ranges and surrounded by Gantgaw mountain ranges on the east, Yankin mountain ranges on the south.



**Figure (1): Location Map of Mohnyin Township**  
Process: Seng Aung (2008)

### ***5.2 Drainage:***

Namyin chaung (40 miles long) is major stream and it takes its source near Semaile Ywathit and it is drained from south to north along middle part of Mohnyin and enters into Mogaung chaung. Indawgyi Lake, the largest lake in Myanmar, also in ASEAN, flows from south to north and enters into Mogaung chaung. It is 14 miles long from north to south and 7 miles wide from east to west. The villages are situated around the lake and people living in the villages around the lake use the boats as important transport and communication.

### ***5.3 Vegetation:***

There is different vegetation types can be observed in study area. Evergreen and deciduous forests types can be studied, teak is popular in Mohnyin Township area.

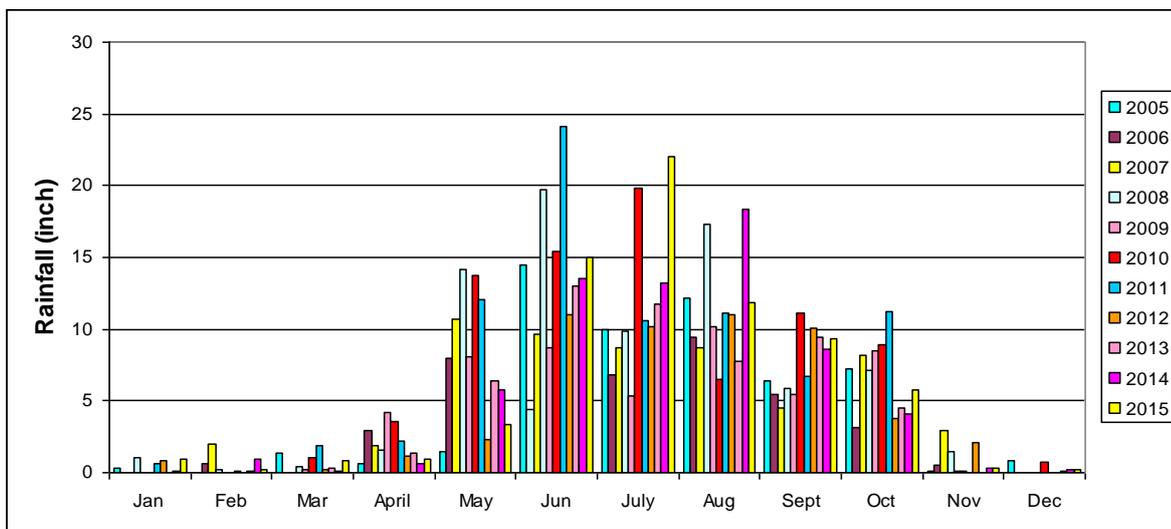
**Soils:** The influence of climate, natural vegetation and organisms gives rise to the formation of different soil types. Alluvial soils are found along the Namkaung creek and Namyin creek valley sides, make up of rivers, streams, and their tributaries.

The soils can be divided into 4 groups. Meadow soils are found on flat plain along the Namkaung and Namyin valleys. Meadow's yellow brown forest soils occur on higher

ground and occupy the eastern and western parts of the study area. The thickness of the soil ranges from 2 to 3 inches. It is thinner on steep slopes and thicker in gentle slopes. Sugar-cane and cereals and oil crops are growing on such soil. Mountainous yellow brown forest soil is formed under the deciduous forests and on the well-drainage slopes. It covers 1/4 of the township area. On the gentle slopes, it is about 40 inches while on steep slope. Red brown forest and yellow brown forest soil is found on places above 500 feet where the average rainfall is more than 120 inches, especially in the northern part of the township.

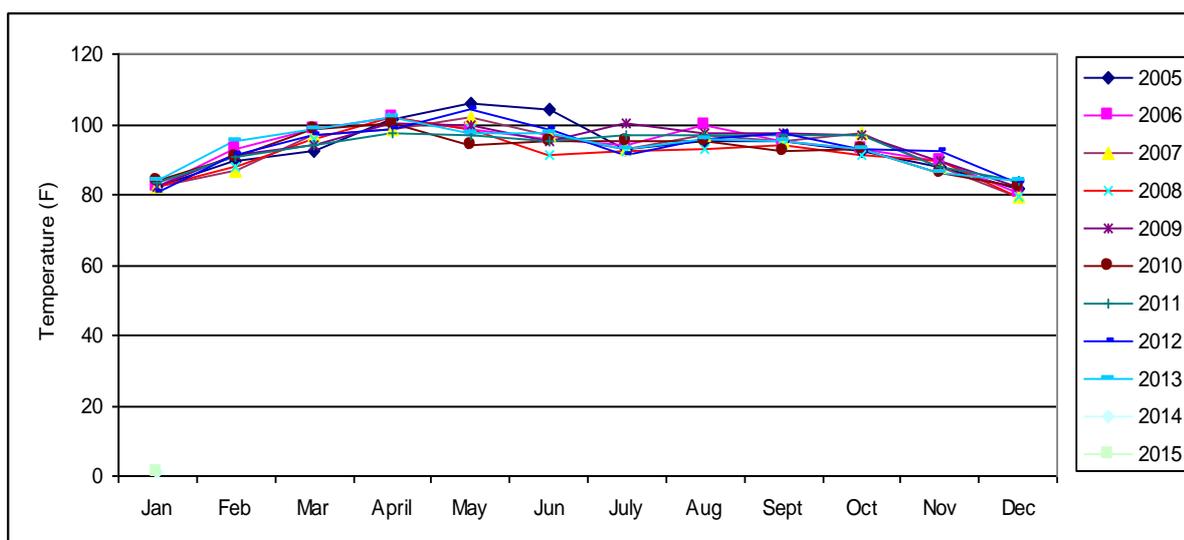
**5.4 Climate:**

Tropical monsoon climate can be experienced in Mohnyin Township and maximum temperature is 38.3 °C and minimum temperature is 4.5°C. Yearly and monthly rainfall and Maximum temperature can be described in Figures.



**Figure (2): Rain fall of Mohnyin Township**

Source: Meteorological Department, Mohnyin, Kachin State



**Figure (3): Maximum Temperature of Mohnyin Township**

Source: Meteorological Department, Mohnyin, Kachin State

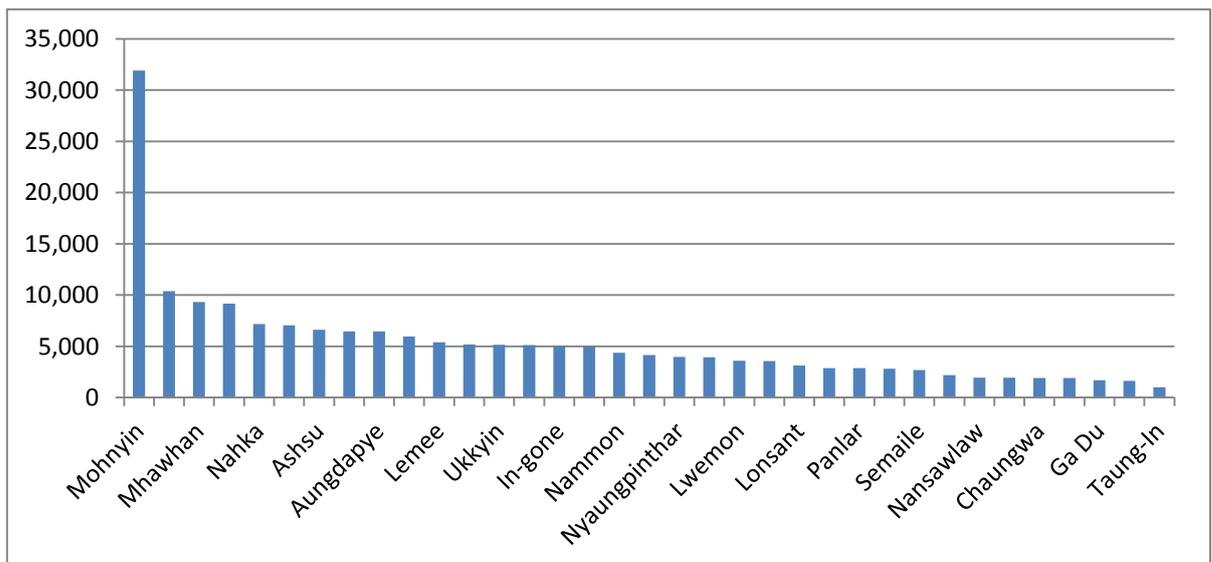
**5.5 Geology:**

In general, the major stratigraphic rock units exposed in this township range in age from Precambrian, low grade metamorphic, Precambrian rocks, Cretaceous rocks, Miocene units, Ayeyawady Formation rock units, alluviums and igneous rocks. The major faults frequently occurred in NE-SW directions. Low grade metamorphic rock units are exposed at Nanpanbum and other mountain ranges in the west of Indaw Gyi Lake, where they are associated with basic and ultra basic igneous rocks. These igneous rocks are composed of granite and other non basic rocks in the west of Mawhan, gabbros and related intrusive rocks in the west and northwest of IndawGyi Lake and ultra basic rocks in the western portion of the Namyin hka reserved forest area. The volcanic rocks are the eastern continuation of Taungthonlon volcano and are found in the western most part of Mohnyin Township.

**5.6 Population distribution:**

Population distribution can be studied by villages, by village tracts, and by wards in Mohnyin. The largest population number can be analysed in Nahka ward, the second in Ashesuyat ward, the third in Myoma ward, the fourth Aungdapye ward and the fifth in Ukkyin ward. Total population only in Mohnyin Myo is 31890 inhabitants.

According to data obtain from “Population Section of Land use Department in Mohnyin Myo”, total population of the whole Mohnyin Township is 203, 523 in 2016. Population distribution in Mohnyin Township can be classified and village distribution is related to topographic conditions. Suitable sites for cultivation, good transportation, are closely related to local people settle down permanently. The lowest population density in Panlar, and population density is 1.3 in Ga Du. The highest population density (18,485 per sq. mile) is in Mohnyin Myo area. This area is socioeconomic boom center such as education, health care, market, road and communication.



**Figure (4): Village Tract-wise population distribution in Mohnyin Township (2016).**

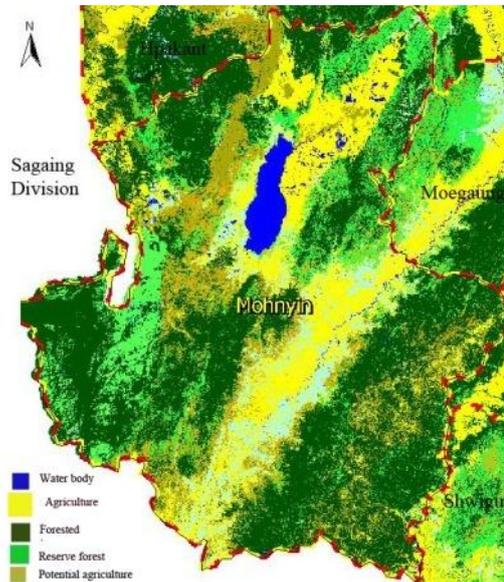
Source: Land use Department in Mohnyin Myo.

### 5.7 Communication:

According to field study, tar road and gravel road can be seen in Mohnyin Township area. Rail road is main transportation for cheaply commodity flow. A motor road from Myitkyina to Mandalay through many villages and it can be used all seasons. Rail road between Myitkyina and Mandalay is good transportation from Mohnyin to other parts. Raw materials and goods are carried by rail road.

### 6. Agricultural potential and economic activity

There are four categories of land cover: (1) Natural forested are (598,865 acres), (2) Reserve forest (496,810), (3) Agriculture land (138,142), (4) Potential agriculture land (315,762), and (5) Other land (109,402).



**Figure (5): Land cover (2016)**

Source: Seng Aung, (2015)

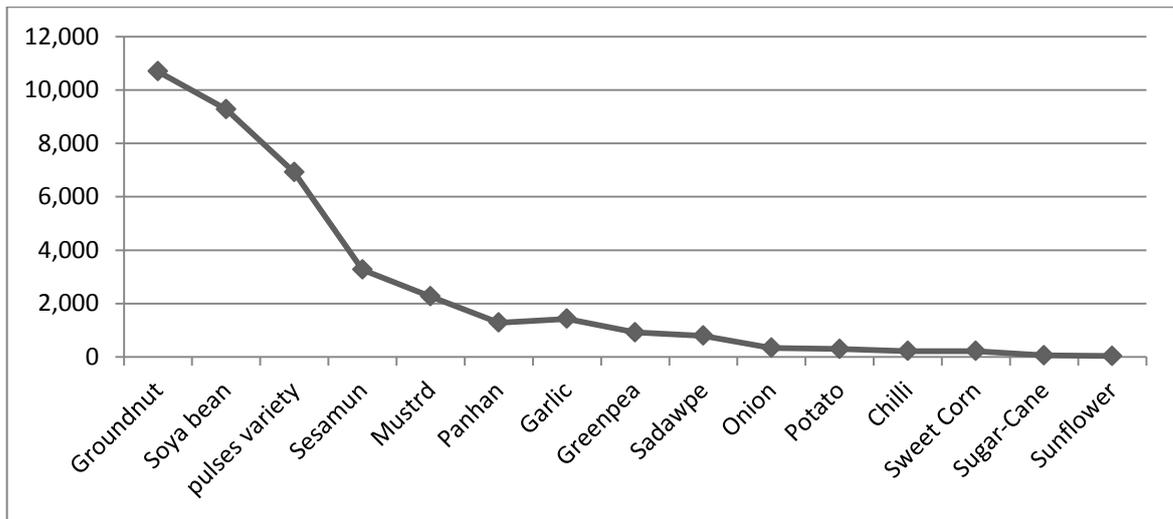
The Potential agriculture land of Mohnyin Township was 315,762 acres. Agriculture land is classified into (6) categories include 1) wet rice field/Le (104,411 acres), 2) dry cultivation field/Ya (5,098 acres), 3) flood plain cultivated field/ Kaing / Kyun (1,129 acres), 4) Garden (9,963 acres), 5) shifting taungya (75 acres) and 6) Fallow land.

The local people establish wet rice cultivation of rain fed agriculture adapted to local climate where area is wide valley plains with good soil increase nutrients from resulting alluvial soil and enhance crop growth.

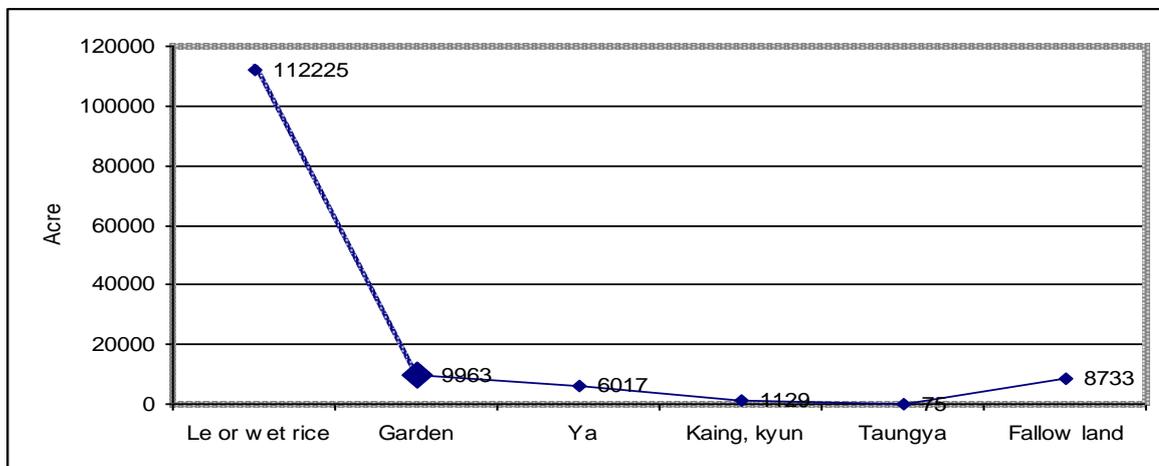
#### 6.1 Agricultural Patterns:

The physical feature and climatic conditions enhance the agriculture patterns in Mohnyin Township. The cultivated crops are rice, oil crops, pulses, cereals and other vegetables. The area of rice cultivated area is the highest amount (112,225 acres).

**Type of Agriculture:** Rice cultivated area (107655) acres, mustard (1159), beans (1301) and corn (229) in 2015-16. Taungya cultivation can be studied very small scale.



**Figure (6): Winter crop varieties cultivated acres.**

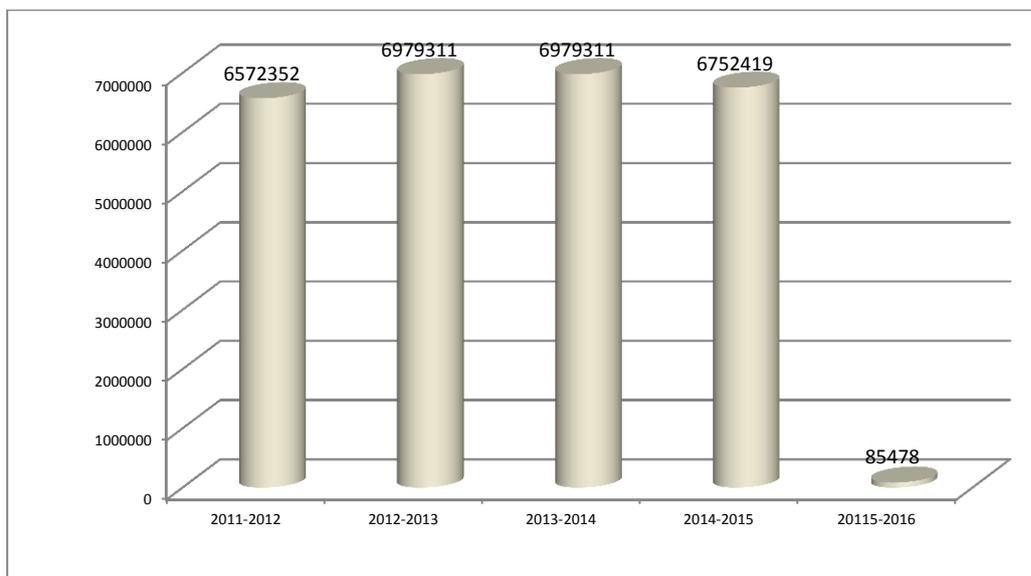


**Figure (7): Types of agriculture in Mohnyin Township**

Source: Data obtained from Land use Department in Mohnyin Township (2016).

**Le land:** Le or wet rice cultivation is the largest agriculture practice and total Le land is (112,225) acre, Ya or dry cultivation/ oil seed cultivated land is (9,963) acres, garden land is (6,017) acres, flood plain cultivated land is (1,420) acres, shifting is 75 acres and fallow land is (8733) acres in 2016. The Le land can be found along the streams where the alluvial soil is deposited and in the low land area which reserved the rain during the rainy seasons. Rice is main agricultural crop and groundnut, beans and other seasonal vegetables are grown after harvest rice (November- April). The groundnut is grown in winter and harvest in summer. During the groundnut growing period, other pulses and kitchen crops are also grown on Le-land together with the groundnut. Bean is grown as market scale in some villages. Rice is grown during July and August, and harvest in November to December.

Yearly rice production (in baskets) in Mohnyin Township is described as Figure. Total rice production in 2015-16 was decreased due to flood damage crops in the whole Myanmar.



**Figure (8): Rice production (in baskets) in Mohnyin Township**

Sources: Data obtain from Land use department in Mohnyin Township (2016)

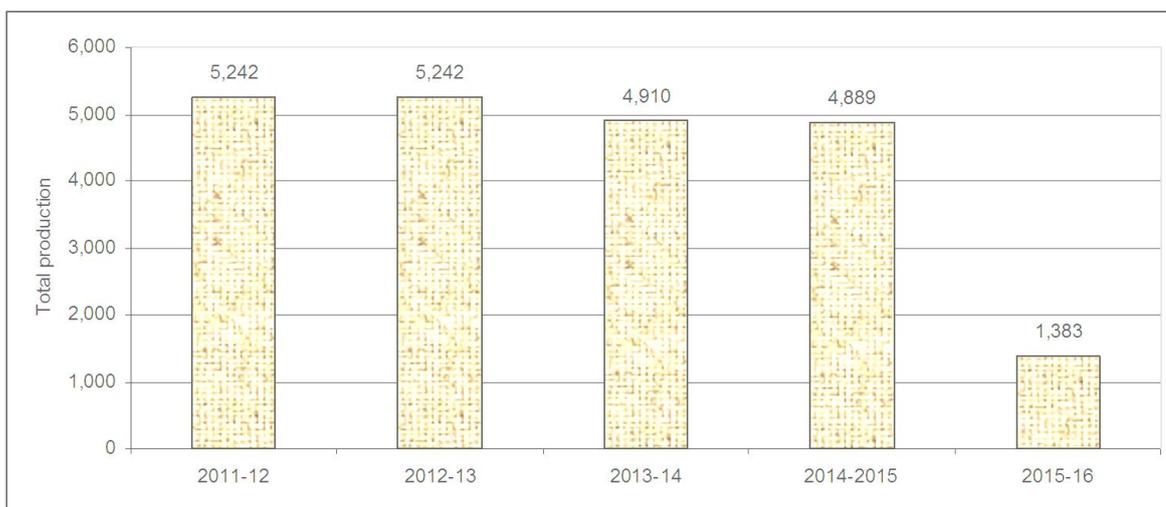
The largest cultivated areas of rice are Nanmon, Lone Sant and Chaungwa village tracts, around Indaw Gyi Lake, and soil fertility is suitable for rice and seasonal crops production. These areas are located on the way to Hpakant and rice and agriculture products are transported to jade mine market places and gold mine areas around Indaw Gyi area. These areas are located in the northern part of watershed areas of Indawgyi Lake. Around Indaw Gyi Lake, there are (6500) acres in Lonesant, (5616) acres in Hepu, (5318) acres in Nammon, and (5318) acres in Chaungwa village tracts respectively. The second largest rice cultivated area can be found in Balu, Lemee, Inngone, Mamonkai, Kyargyigwin and Myothitkalay. These areas are huge valley plain in central part of Mohnyin Township and Namyin stream and other small streams flow through in these areas. This situation encourages the agriculture, especially the rice cultivation. The lowest rice cultivated areas can be found in the mountainous region and Mohnyin Myo area. In these areas, the rice land was less than 1,000 acres.

Agricultural cultivated area is gradually decreased because farmers' interested in other quick earning jobs such as working in gold mine, jade mine and amber extraction areas (Tharmahkan, Karmine, Indaw Gyi, Hpankant, and Tanai/ Hukawng Valley). Farmer face difficulties to get good quality seeds, fertilizer, pesticides, land tenure, limited finance, high transport costs, weakness of technology and access to markets. They have insufficient access to agricultural practice. These difficulties are pushing local farmers to go to mining areas for the purpose of working in companies which are large scale mechanical investment in gold and jade mine areas, some are cycle carry and odd job worker, etc. for their earning. There are many social and diseases problems such as malaria, dengue hemorrhagic fever, cholera, and young man mine erosion and drug are common in gold and jade mines. So local farmers go back home due to they are facing difficulties for earning in mining areas and go back home to practice agriculture again. This situation cause increase agricultural production.

Percentage of total Agriculture area is 8.33% and total rice cultivated area is (61.553) percent of the total land cover area in Mohnyin Township. It also has the highest percentage of sown acreage than the other crops lands.

**Ya Land:**Total Ya Lands in study area occupy the drier land and is the second largest area of agriculture land and it covered about (6,017) acres. It is usually found at the foot hill and upland area. Study area is mountainous and the Ya can be observed along hill slopes and small valley plains in riversides. Crops mostly grown in Ya lands are sesamum and monsoon groundnut. These are grown in rainy season (Jun-July) and harvest in winter (November- December). The sesamum and other pulses are grown on Ya land and harvest in hot season (April- May). Crops grow on Ya Lands are sugar-cane, dry rice, beans, sesamum, maize, mustard, potatoes, and vegetables.

Maize is grown to get corn-cobs seeds for home consumption. The average maize cultivated area from 2011-12 to 2015-16 was (1,958) acres. The highest maize grown acreages was (96) acres in 2011-12, (96) acreages in 2012-13, and the least acreage was (90) acres in 2014, 2015, and in 2016. The average annual matures acreages of maize was (211) acres. Total production was (4333.2) basket. Maize is grown during May and harvest in August.



**Figure (9): Yearly maize production in Mohnyin Township**

Source: Data obtained from Land use Department, Mohnyin Township

Mustard is grown mainly to produce oil. During the 5 years (2011-16), the average of mustard was (2,722.8) acres. The average yield is (11.25) baskets per acre, and the maximum yield is (11.30) baskets per acreages. The annual average production of mustard is (25,526.2) baskets. Mustard is grown on old matured Kaing lands/ flood plains and alluviums soil during September - October and harvest in February - March.

During the 5 years period from 2011-16, the average annual cultivated acreage of sesamum was (3,129.2) acres. The annual average yield is (53.05) baskets per acre, and the maximum yield of (12.07) baskets per acre. The annual average production of sesamum is **(39,057.6)** baskets. The sesamum is grown in September and harvested in December - January.

Panhan, oil seed crops is chiefly grown in Mohnyin Township.

The average annual sown acreage in Mohnyin Township, during the 5 years period, from 2011-12 to 2015-16 was (1,290) acres. The highest sown acreage was (161,290) acres in 2015. The annual average yield per acre was (8.27) baskets and the average of the total production was (10,668.6) baskets.

During the 5 years period from 2011-12 to 2015-16, the average sown acreage of sugar cane was (64) acres in 2011-12, and the least was (20) acres in 2015-16. The sugar cane cultivation is substituted by other potential cash crops due to no sugar mill.

Varieties of pulses such as green bean, soya bean, Green gram, pigeon pea, and pedesein are chiefly grown in Mohnyin Township. Green bean is the most important cash crop.

In Mohnyin Township, during the 5 years period from 2011-12 to 2015-16, the average sown acreage of Soya bean was (6,463) acres. The yield per acre was (19.934) baskets. It is grown during May to June, and harvest during in September and October. The sown acreage of other pulses, such as Matpe, Pedesein, amounted to only acres. They are also grown in Namyin - Namkaung chaung valley plain.

Vegetables are the most important seasonal cash crops in this township and are grown during the rainy and winter seasons. Potato, tomatoes, rozelle, cabbage, cauliflower, pumpkin, gourd, ripped gourd, cucumber, brinjal, bitter gourd, and coriander are chiefly grown. The land cultivated by vegetables is (474) acres in Mohnyin Township. They are grown nearly in every village tracts on subsistence basis but the surplus is sold in local markets is family household income generation.

Among the vegetables, the potatoes are the most important crop in Mohnyin Township. It is grown during September and October, and harvest in February. The average sown acreage of potatoes was (27) acres. In 2015-16, the sown acreage was (61) acres, and the yield per acre was (1,650) viss. Mohnyin Township is the chief potato growing areas. Among other crops, fruit is economic importance in Mohnyin Township. In 2015-16, the sown acreage of fruit was (360) acres. The important fruits grown in this township are dog fruit, lichi, oranges, mangoes, citrus fruit and pine apples, and are mostly grown in the orchards and in the gardens of private compounds.

**Table (1): Yearly crop sown acres in Mohnyin Township**

Year	Rice	Soya bean	Green pea	Sesamun	Sunflower	Panhan	Maize
2011-2012	82,930	9275	795	3,274	2011-12	1,290	96
2012-2013	81,958	8940	802	3,344	2012-13	1,290	96
2013-2014	82,633	8940	802	3,006	2013-14	1,290	90
2014-2015	84,566	2580	762	3,006	2014-15	1,290	90
2015-2016	85,029	2580	762	3,016	2015-16	1,290	90
Average	83.4232	6,463	784.6	3,129.20	Average	1,290	92.4

Sources: Land Records office, Mohnyin Township

**Table (2): Crops cultivation in 2011-12**

Crops Name	Cultivated acres	Yield per acre (Basket)	Total Production
Groundnut	10,696	50.64	5458050
Soya bean	9275	20.15	186891
Pulses variety	6915	19	131385
Sesamun	3274	10.5	34380
Mustrd	2269	11.2	25413
Panhan	1290	8.25	10643
Garlic	1428	1535	219792
Greenpea	924	10.7	9887
Sadawpe	795	10.35	8228
Onion	344	2579	887176
Potato	301	2941	-
Chilli	226	476	107576
Sweet Corn	225	24258	5458050
Sugar-Cane	64	24.24	1551
Sunflower	38	21.4	813

Sources: Land Records office, Mohnyin Township

**Table (3): Yearly agricultural crop production in Mohnyin Township.**

Year	Rice	Soya bean	Greenpea	Sesamun	Sunflower	Panhan	Maize
2011-2012	6,572,352	186891	8228	34,380	813	10,643	5,242
2012-2013	6,539,003	177727	8260	36,230	278	10,643	5,242
2013-2014	6,979,311	177727	8260	36,270	278	10,643	4,910
2014-2015	6,752,419	51290	273	31,733	31,733	10,707	4,889
2015-2016	85,478	51290	273	6,675	6,675	10,707	1,383
Average	5,385,712.60	128,985	5,058.80	390,057.60	7,955.40	10668.6	4333.2

Sources: Land Records office, Mohnyin Township

**Flood plain/ Kaing, kyun Land:** Total area of Kaing - kyun is (1,129) acres. Kitchen crops such as seasonal vegetables are mostly grown in the Kaing- kyun land. Cabbage, cauliflower, pumpkin, gourd, ripped gourd, cucumber, brinjal, bitter gourd, garlic, onion, ginger, chilly, carrot, beans, watermelon, and coriander are grown as market purpose.

**Garden Land:** The total garden lands occupied only (9,963) acres of Mohnyin Township. The garden lands include commercial orchards. In orchard lands, dog fruits, oranges, mangoes, citrus fruits (such as lemon) are grown and star apple, coffee, flowers and vegetables are grown in home garden lands.

**Taungya Land:** The total taungya lands are (75) acres. The taungya land can be found on the mountain slope and hill sides and rice or upland rice, maize (corn), sesamum, pulses and vegetables are grown. “Taunhya” cultivation or shifting cultivation is carried on during April-May and harvest in July-August.

**Fallow land:** The fallow land was (8,733) acres and it is greater than taungya.

**Labor force:** All the villagers, both men and women take part in cultivation and harvesting but it is especially carried out by women. They help one another; it is a joyous occasion where cultivation knowledge and experience is freely exchanged with one another. Rice sowing is also a collective work of the villagers and workers by money.

**Agriculture crops:** According to official classification on agricultural sector (State Administrative Department, Mohnyin), there are (7) classes can be studied as the following:

- a) Major crops include (10) varieties such as rice, maize, cotton, sesamum and groundnut, sugar-cane, soyabeans, sunflower, mustard, green bean, green gram, and etc.
- b) Long-term plantation include rubber, tea, betel-nut, coconut, c) Other cash crops: ginger, total cultivated area is (216) acres, total yield is (17,250) baskets.
- d) Utilization of machinery and e) Utilization of animal power: total animal of (31,531) heads of buffaloes and (66,899) heads of cows are using for agriculture.
- f) Local food and oil sufficiency.

The government has an agriculture planning to ward food and oil sufficiency of local people in Mohnyin Township. A long-term plan of cultivation is a sign of change to permanent agriculture. After reaping the rice, it is followed with cash crops like rubber, teak and etc. This permanent orientation is technologically feasibility, economically profitability, and environmentally sustainability.

Natural forest, soil, water play a key role in the livelihood of people.

**Table (4): Local food sufficiency in Mohnyin Township.**

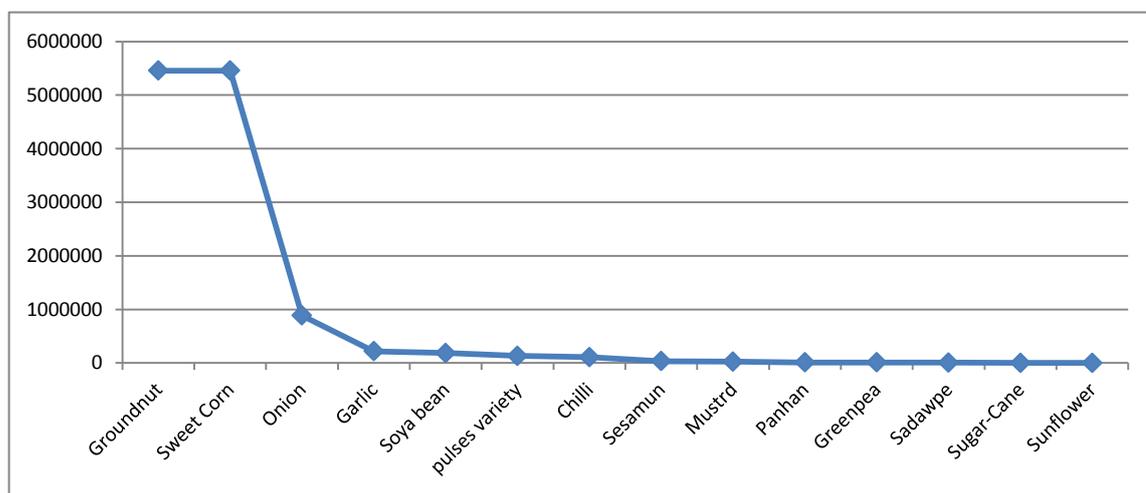
S. No	Variety	Year (2014-15)	Year (2015-16)	Progress
1	Population	200,314	203,606	3,065
	a) Urban residents	53,828	54,372	544
	b) Rural residents	146,486	149,007	2,521
2	Food need in basket	2,843,226	2,887,569	44,343
3	Cultivated acre of rice	108,718	109,484	766
	-Yield per acre in basket	79.45	79.52	0.07
	-Total yield in basket	8,637,299	8,706,146	68,847
4	Reserve in basket	543,590	54,7420	3,830
5	Used in basket	3,386,816	343,4989	48,173
6	Surplus/ need in basket	5250,483	527,1157	20,674
7	Food need in basket	4,706,893	4,723,737	1,6844
	Percentage of sufficient	255.02	253.45%	

Source: Government Office, Mohnyin Township (2016)

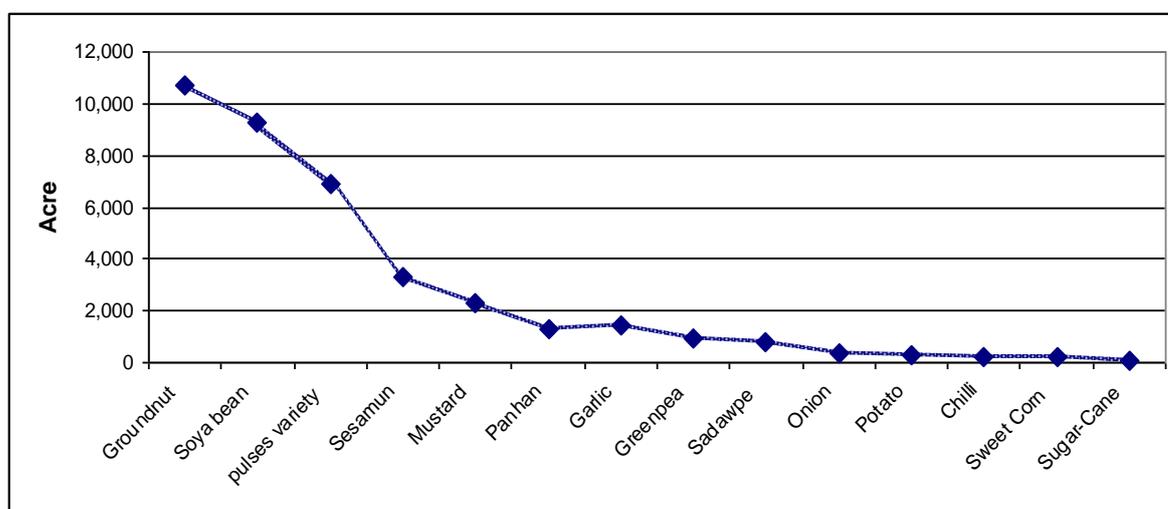
**Table (4): Local oil sufficiency (2014-16) in Mohnyin Township.**

S. No	Particular	Quantity	2014-15	2015-16	Progress
1	Population	Person	200314	203606	3065
2	Per consumption	Viss	6	6	-
3	Consumption need	Metric ton	2049	2255	206
4	Oil yield	Basket	2926	1761	(-)1165
5	Waste	Basket	53913.07	27782.40	(-)26130.67
6	Reserve in basket	Basket	31560.63	77171.25	45610.62
7	Usage	Metric ton	989	348	641
8	Surplus / need	Metric ton	(-)877	470	(-)406
9	Sufficiency	Percentage	149.02%	88.34%	

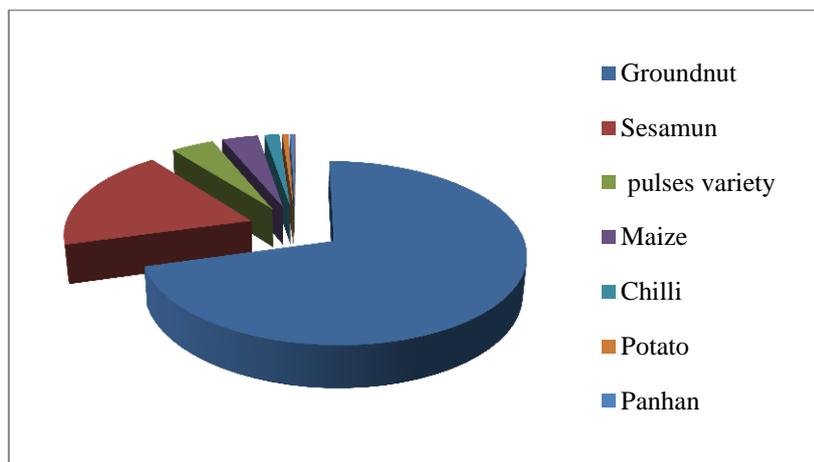
Source: Service Office, Mohnyin Township (2016)



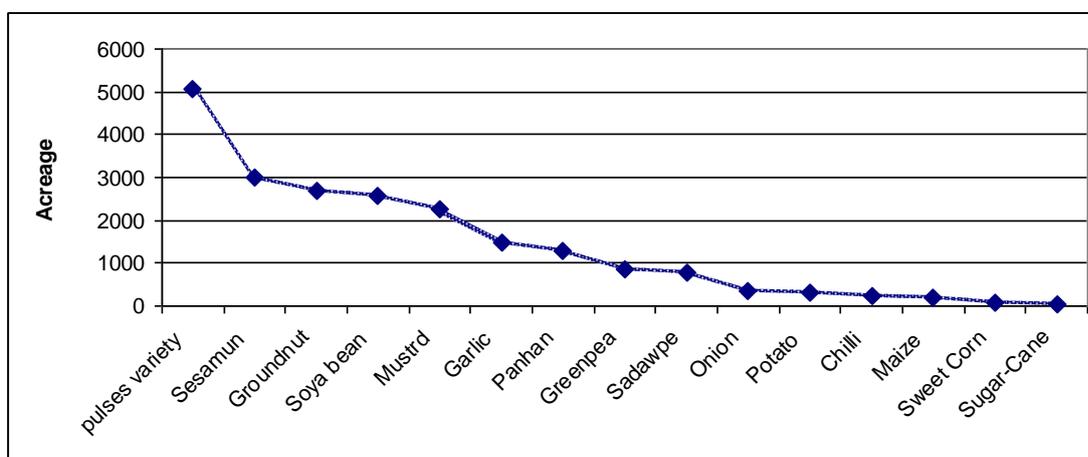
**Figure (10) : Crops production of Mohnyin Township (2011-12)**



**Figure (11): Crops cultivated acreage of Mohnyin Township**



**Figure (12): Crops production of Mohnyin Township (2015-16)**



**Figure (13): Crops cultivated areas in Mohnyin Township.(2015-16)**

Source: Agriculture Department of Mohnyin Township

## 7. Evaluation and Conclusion

### 7.1 Evaluation on agriculture:

It is rain feed agriculture practices. Decrease agriculture practice because farmers are facing difficulties to increase agricultural production benefits such as poor infrastructure, poor machineries and technical skill to operate agriculture, not enough financial support to buy good quality seeds, lacking irrigation facility and lack processing technology and to save from disease, flood damage, limited investment in farming are major source of leaving farms. Pull factor of people are working in jade mine, Hpankant, amber searching in Hukawng Valley for quick earning.

Agricultural potential are abundant water resources, natural pasture to raise livestock to obtain family diet (meat, eggs, and milk) and household income from farm products, wider alluvial plains, and aquatic fishing grounds and etc.

- Deeply identification on agricultural sector such as indigenous agricultural knowledge, techniques and resource utilization need to be carried out.

- Insufficient amount of application and labor, limited financial credits are major constrain of agriculture practice of farmers. Machinery agriculture transformation from rain fed system would be appropriate to promote agriculture in Mohnyin Township area. The people understanding on sustainable management on all types of agriculture and agricultural research will be bringing into sustainable goal.

- Farmers need training to manage commercial scale production of rice and other crops, (coffee, and agricultural related commodities like seasonal vegetables) due to they have close markets in mining areas.

- The people need to understand how to manage farming which is an important issue, because people mostly lack interested in agriculture. Much interest is needed to establish ideas for sustainable farming to change easily the people's desire for eco-friendly agriculture, nutrition, and security of land degradation. Extension field to produce oil crops, root crops, cereals and encouragement and preservation of agrobiodiversity in rain fed agriculture areas is needed.

- Need active participation and cooperation in farming activities and research to indentify both challenges and opportunities for sustainable agriculture and sustainability of IndawGyi Lake.

- Groundwater monitoring and arsenic measurement research and effective integrated planning and systematic irrigated farming are needed.

- According to observation people mostly in rural villages are working in jade mine and gold mines.

Potential agricultural area is high productivity due to physical feature; climate and soil fertility is appropriated.

The technical knowledge improvement of local people and the strength of eco-friendly farming and sustainable watershed management in IndawGyi area are needed. Proposal for sustainable management on agriculture development must take into consideration the need to promote sustainable land use. Sustainability is the basis for implementation of alternative agriculture and eco-friendly agroforestry models. Indigenous varieties of rice, crops and plants, will certainly contribute to a long cycle crop varieties with high levels of sustainability due to local climatic adaptation.

There are many possible models of eco-friendly agriculture and agro forestry systems resulting from combination of agricultural practice such as Le/wet rice varieties, Ya crops, and the taungya crops cultivation including seasonal, perennial and raising animals in various arrangements that offers foods and economic security for local farmers who produce them. Farmers have been substituting variety of fruit trees annual crops (taro, maize, chilli, pumpkin, mustard, buckwheat, potato, yam, beans, cotton and vegetables); perennial crops such as papaya, banana, tea, coffee, etc. These models are typical eco-friendly agriculture systems with reasonable levels of sustainability.

Research efforts for developing sustainable agriculture should be concentrated on good economic value and comparative local advantages for the development and maintained of integrated eco-friendly farming system.

Crop variety and local adapted animals show potential for development and will certainly contribute to sustainable agriculture. Development of sustainable agriculture will represent a feasible alternative to create new jobs, keeping labour, and agricultural products, increasing household income, decreasing social tensions and generating and incorporating technical knowledge towards environmental conservation or preservation of natural ecosystems in IndawGyi Lake area. The growing rice and agriculture crops are Hpakant, Myitkhina, Tanai, market potential.

### ***7.2 Impact on IndawGyi Lake:***

A major problem in the watershed of Indaw Gyi Lake is mainly soil erosion because the people cleared the forest for gold mining activities. Increase new comer population in IndawGyi area to search odd job and fishing for market purpose in mining area is needed to be considered. They stand mainly by fishing in Indaw Gyi Lake and by jade mine related worker. The impacts of human activities cause environmental risk. Research and innovation action plans is essential to support the implementation of appropriate land use systems responses to deforestation. Sustainable management on agriculture is an important factor related to watershed protection issues in Lake Area.

The local people should engage promotion of traditional forest reserves and the preservation of natural ecosystems for the present and future forest supply. The increase of agroforestry with innovative techniques and cooperative market systems will help of the success towards sustainability.

Soil erosion occurs from gold mines in western side of the lake throughout the village tracts. Its most serious consequence is a shallower the lake. Adequate attention to agricultural and environmental functions, such as research, training, information exchange, and local people participation and cooperation are highly interrelated activities and should be developed at different sectors. Logging and gold extraction is major challenges of the IndawGyi Lake because rapid run-off, serious erosion and deposition occur in IndawGyi Lake. The people need to understand how to manage agriculture and green, clean of the Lake environment is an important for socioeconomic and sustainable development.

### ***7.3 Conclusion***

Mohnyin Township is the southern part of Kachin State, northern Myanmar. Mandalay and Myitkyina Motor highway and rail way pass through the Mohnyin Township. This township is largest size in Kachin state and it has an area of 2,578.51 square miles (1,650,240 acres). The two mountains lie in parallel from north to south. The alluvial plain area can be found in northern and central parts of township which are important for agriculture.

Indaw Gyi Lake, the largest lake in Myanmar is situated in Mohnyin Township and flows from south to north and enters into Mogaung chaung in Mogaung Township. Lake water is not used for agriculture, but it is used for major fishing area.

Mohnyin Township is one of the most populated townships in the Kachin State. There is great difference in the density of population in each village tracts. In some village

tracts, the density is over, 1,000 persons per sq. mile, but in some village tracts, less than 100 persons per sq. mile. The main occupation is agricultural, animal husbandry and forest workers, fishermen and hunters.

Seasonal vegetables (potatoes, cabbage, cauliflower, pumpkin, gourd, etc.) are important cash-crop in Mohnyin Township. Rail road and motor routes are important for economic activities and infrastructure is better than before. Mohnyin Township is fairly well served with road and railway transpiration. Mohnyin - Mandalay road and rail road, Mohnyin - Myitkyina, Mohnyin -Tanai, Mohnyin-Phakant and Mohnyin- Thamakant road are significant in Township. Agricultural products and animals are exported to China as commercial scale that is carrying by brokers and illegal traders.

There are vast areas of agriculture potential fields. Mining activities is directly related to the IndawGyi environment and human health that major concern to decision makers and stakeholder organizations and individuals. The villages, along the road to Hpakant, and Mohnyin Myo are growing migrant who are fishing in the Indaw Gyi Lake is challenging the socio-economic activity.

Nature and Wildlife Conservation Division of Forest Department conserves this area. IndawGyi Lake, its catchments and Indaw Chaung are protected by the IndawGyi wildlife sanctuaries. IndawGyi Lake is high potential hot spot of eco-tourism for the future. As local people need to understand the systematic eco-friendly cultivation, management and technique should be discussed. In considering rain feed farming system, crops adaptation to physical conditions such as soil type, climate, and natural environment with minimum investment and maximum potential value are valuable.

According to field observation Le, Ya and gardens are mainly important in Mohnyin. There are potential agriculture areas can be studied along stream channel wide valley plains in Mohnyin Township and should be extent to agriculture area to increase crops production as change of agriculture pattern.

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# CLIMATE - SMART AGRICULTURE IN VIETNAM: OVERVIEW AND POLICY ORIENTATION

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## Abstract

*Climate change (CC) has been seriously affecting the agricultural production in Vietnam. Due to that, agriculture needs various methods to deal with the problem and some of which are applying Climate - Smart Agriculture (CSA) models vastly, using Ecosystem - based Adaptation (EbA) models, and integrating climate change adaptation in the orientation of agricultural restructuring towards value added and sustainable development. This article refers to the scientific basics of improving and broadening CSA models as well as how they are put into practice in Vietnam; at the same time, an overview of climate change policies in the agricultural sector has been issued and orientations for integrating the CSA into future Policy Frameworks and Action Plans.*

**Key words:** *Food Security, Climate Change, Climate - Smart Agriculture.*

## 1. Introduction

Food security and climate change are increasingly closely linked, as they are both influenced by a number of factors, including (i) population growth pressures, (ii) the demand for food, and (iii) the depletion of natural resources. Therefore, the difficulties and challenges in ensuring food security are increasing (FAO, 2011a). According to FAO estimates, agricultural output needs to increase by 60% by 2050 to meet world food demand (FAO, 2013). In order to address the above-mentioned pressures, agricultural production requires a shift to more productive production systems, the efficient use of inputs, less variability and the stabilization of factors. Outcome, resilient to risks, shocks and climate change in the long term. At the same time, reducing greenhouse gas emissions per unit of land or agricultural products, creating carbon sinks, contributes to mitigating the effects of climate change (FAO, 2013).

Climate-Smart Agriculture (CSA) is an approach that involves a variety of factors, such as enhancing technical and policy conditions and promoting investment to achieve sustainable agricultural development in specific contexts and localities. The CSA aims at simultaneously achieving all three pillars: (i) ensuring food security through increased productivity and income, (ii) increased adaptation to climate change in agricultural production systems, (iii) reducing / eliminating greenhouse gas emissions where feasible (FAO, 2010). Unlike traditional farming strategies and management, the CSA seeks to

integrate climate change responses into agricultural development plans and strategies, in particular seeking opportunities for short-term adaptation and long-term mitigation (Lipper et al., 2014). The issue is how a CSA model is appropriate to the local / regional ecological conditions, as well as what policies and measures need to be taken to effectively implement these models.

The government has approved the importance of connecting actions towards climate change, sustainable development, low carbon economical and agricultural development at the policy level. Many policies and strategies has been given in order to tackle national and regional situations. However, the difficulty in spreading CSA models is considerably great. This research will give the general basics of the theory and the practice of CSA development as well as agricultural policies dealing with CC. The obstacles in developing CSA and suggested plans for the future are also mentioned.

## **2. Research methods**

Methods used in the research consist of data gathering and consulting. Summarized information through reports and studies from companies and organization, NGOs, news from national magazines of FAO, CGIAR, CIAT, ICRAFT are also included in order to generate the overall view of CSA in both theory and practice in Vietnam. At the same time, in order to identify gaps in knowledge, resources, policies and institutions that inhibit the development of CSA models in Vietnam.

The consulting method is also used in order to select the fitting agricultural models based on three pillars aims mentioned above; discuss directly the current situation, shortcomings, policy gaps, and measures in broadening agricultural models for CC.

## **3. Results**

### ***3.1. Climate - Smart Agriculture***

#### ***3.1.1. Concept***

CSA is accepted by FAO since 2013 as an approach to maintain the food security for an expectation of over 9 billion people on the planet in 2050. The most commonly used definition is provided by FAO, which defines CSA as “*agriculture that sustainably increases productivity, enhances resilience (adaptation), reduces/removes GHGs (mitigation) where possible, and enhances achievement of national food security and development goals*”. In this definition, the principal goal of CSA is identified as food security and development (FAO 2013a, Lipper et al., 2014), while productivity, adaptation, and mitigation are identified as the three interlinked pillars necessary for achieving this goal. In terms of Vietnam, with the “*No Regrets*” approach, it is not necessary at all times, all three pillars are aligned when selecting CSA practices.

The three pillar of CSA consist of:

***Productivity:*** Increases productivity and income in a stable way from cultivating, raising to fishery without damaging the environment. This, in turn, will raise food and nutritional security. A key concept related to raising productivity is sustainable intensification.

**Adaptation:** CSA aims to reduce the exposure of farmers to short-term risks, while also strengthening their resilience by building their capacity to adapt and prosper in the face of shocks and longer-term stresses. Particular attention is given to protecting the ecosystem services which ecosystems provide to farmers and others. These services are essential for maintaining productivity and our ability to adapt to climate changes.

**Mitigation:** Wherever and whenever possible, CSA should help to reduce and/or remove greenhouse gas (GHG) emissions. This implies that we reduce emissions for each calorie or kilo of food, fibre and fuel that we produce. That we avoid deforestation from agriculture. And that we manage soils and trees in ways that maximizes their potential to acts as carbon sinks and absorb CO<sub>2</sub> from the atmosphere.

CSA are not only technological measures applying on a nationwide scale, they are also multifactor and attach to regional conditions. CSA mention courses of action in both inside and outside farms which are in chains. This is based on general views of including technic factors, policies, institutions and investment in order to reach the stable goal in agriculture and food security given the presence of CC. Below are some examples in operating CSA and the three main pillars on different scales.

**Table 1: CSA practice on different scales**

<b>Scale</b>	<b>Productivity</b>	<b>Adaptation</b>	<b>Mitigation</b>
Household	Subsistence, food, nutrition and income for each and every family member.	Altering and increasing the ability to withstand bad weather conditions in different regions.	Absorbing and storing CO <sub>2</sub> on farms, decreasing fossil fuel's input.
Region	Various land using systems provide subsistence, safety food and help maintaining ecological function and decreasing disaster's effects.	Maintaining ecological function: controlling water, protecting land and preventing erosion, contributing to forest services.	Contributing to REDD+ program, green growth, planting and recovering forests.
Nationwide (Vietnam)	Reassuring agricultural GDP, national food security aims, stable development aims.	Green adapting measures, reducing disaster's risks. National adapting plans.	Green growth policy contributes to NDC, lower carbon emission.
Global	Assuring food security for 9 billion people in 2050. Achieving the aim of balanced development for centuries.	Stable change. Achieving the aim of balanced development.	Keeping the rise of the Earth's temperature below 2 degree Celsius.

*Source: Synthesized by ICRAF, 2017.*

### *3.1.2. The main features of CSA*

CSA addresses climate change: Contrary to conventional agricultural development, CSA systematically integrates climate change into the planning and development of sustainable agricultural systems (Lipper et al., 2014).

CSA integrates multiple goals and manages trade-offs: According to the theory, CSA have to aim at 3 main goals, which are productivity increase, withstanding improvement and emission deduction. On the way of deploying CSA, there is often a trade in selections. Accordingly, it is important to detect overall factors, consider the cost and effect of each choice based on the aim which is decided (FAO 2012b; FAO 2013a).

CSA maintains ecosystems services: The ecology provides humans with services such as manufactures, foods and clean air. CSA use scenery approach based on rules of stable agriculture, however, they manage and plan in an overall way.

CSA has multiple entry points at different levels: CSA should not be perceived as a set of practices and technologies. Moreover, they include input points from the process of developing practice and technologies to the process of forming models and climate change's background, insurance mechanism, value chain and improvement for policy and institution. Therefore, CSA are not only the technology at general level but also the synthesis of a number of invading methods for the food system, scenery, value chain or the policy.

CSA is context specific: What is climate-smart in one-place may not be climate-smart in another, and no interventions are climate-smart everywhere or every time. Interventions must take into account how different elements interact at the landscape level, within or among ecosystems and as a part of different institutional arrangements and political realities. The fact that CSA often strives to reach multiple objectives at the system level makes it particularly difficult to transfer experiences from one context to another.

CSA engages women and marginalised groups: To achieve food security goals and enhance resilience, CSA approaches must involve the poorest and most vulnerable groups. These groups often live on marginal lands which are most vulnerable to climate events like drought and floods. They are, thus, most likely to be affected by climate change. Gender is another central aspect of CSA (Huyer et al., 2015).

## ***3.2. Challenges of agriculture given the context of Climate change in Vietnam***

### *3.2.1. Effects of Climate Change in Vietnam*

According to the average emission scenario RCP 4.5 (similar to B1 scenario) of climate change and higher sea level set up for Vietnam by the Ministry of Natural Resources and Environment, average temperature per year all over the world in 2050 will increase 1.3 - 1.7 degree Celsius, and until 2100 this figure would go up 1.7 - 2.4 degree Celsius. Overall annually rainfall tend to increase from 5 - 20 degree Celsius. Average sea level rise worldwide measured around the coast in Vietnam would be 23 cm (increases from 14cm to 34 cm) in 2050. This number would reach 55cm (increases from 33cm to 75cm) in the year of 2100.

Climate change is the most visible when viewed from the increase of extreme weathers and disasters, moreover from numbers and intensity. Many storms have bizarre trajectories so it is considerably hard to predict and rainstorms seasons would end later than usual. Droughts happen regularly in the Central regions in Vietnam affecting larger area with higher intensity. According to a report of The Centre Steering Committee in Preventing Disasters, many disastrous events have happened continuously from the beginning to the end of 2016. Not only that, they were reported in all regions throughout the nation with great intensity, broad area, unusual and severe. For instance, icy weather in the Northern provinces, droughts and soil salinity with history's highest record in the Mekong River Delta, South Central Coast and Central Highlands. 10 storms and 7 tropical depressions went into the South China Sea, 6 of which directly hit the land causing serious floods together with some other weather forms. These events happened continuously throughout the Central Regions and especially severe at Quang Ninh (2015 - thunderstorms, high winds and heavy rains), the Northwest Regions (2017 - effects were similar to that of Quang Ninh), the Mekong River Delta (rains against the season).

### *3.2.2. The effects of Climate Change on food production and food security*

Food security in Vietnam at present or in the future is based on agricultural activities, especially the rice plants. However, in the following year not only agricultural activities but also crops production will encounter problems due to the fact that the need for food security will increase, effects from CC will worsen and natural resources will degrade.

CC are causing more damages to the ecologies, food production, food in general and making it more difficult to approach food sources. Food security will be seriously threatened if no measures are taken into account.

Effects of CC can be direct or circumstantial when bringing in agricultural production. That in Vietnam can be reduced 2 - 15% (Zhai and Zhuang, 2009). Severe weather conditions like floods, droughts, salinization... could reduce about 2.7 tons of rice per year in 2050 (Yu et al., 2010). Agriculture in the Mekong River Delta and North Central Coast would be heavily affected by rise in the sea level (Nguyen Huu Ninh et al., 2007). Effects from higher sea level would be mostly on rice production, fishery, lower but still considerable on industrial crops and grazing in Vietnam. With the appearance of CC, broadening production and food export will meet higher risk from unusual weather, especially severe ones.

### *3.2.3. The importance of improving CSA development in Vietnam*

Nowadays, in order to adapt to severe weather, people from many regions have had some adjustments in cultivating times and technologies to help crops yield. They have also reduced damages from bad weathers by using plant types which can withstand severe conditions. Some reliable methods in irrigations, composts and fertilizers have been carried out. With mangrove lands, apart from choosing plant types, efforts in dredging trenches

and desalination have been increased. There has also been an increase in technologies to prevent epidemics, changing diets and adjusting the scales. In particular, many synthetic production systems together with a variety in types of plants and cattle are being recovered and developed.

Therefore, with CC and natural resources degradation, it is essential to replace old – fashioned systems. This will ensure productivity growth and economic efficiency, decrease greenhouse gas and strengthen adapting ability.

Putting CSA into practice at different levels and regions in Vietnam will bring certain effective outcome:

(1) CSA brought about a sustainable frame in agricultural production for farmers even with the clearer presence of CC. In developing countries such as Vietnam, agricultural productivity tends to be lower and riskier due to shocks and CC. Consequently, CSA bring about an approach that can increase productivity despite higher risks from CC.

(2) Available methods in agriculture are highly competitive in abatement cost compared to other industries like energy, transportation and forestry. Therefore, the benefits exist for a long time and it is highly likely to reach the aims.

(3) CSA have many commons with sustainable agricultural approaches. This means dealing with CC does not requires eliminating or reinventing everything we have made in recent decades. In particular, CSA are based on a majority of existing technologies and sustainable agricultural measures (sustainable agriculture, sustainable intensification, conservation agriculture).

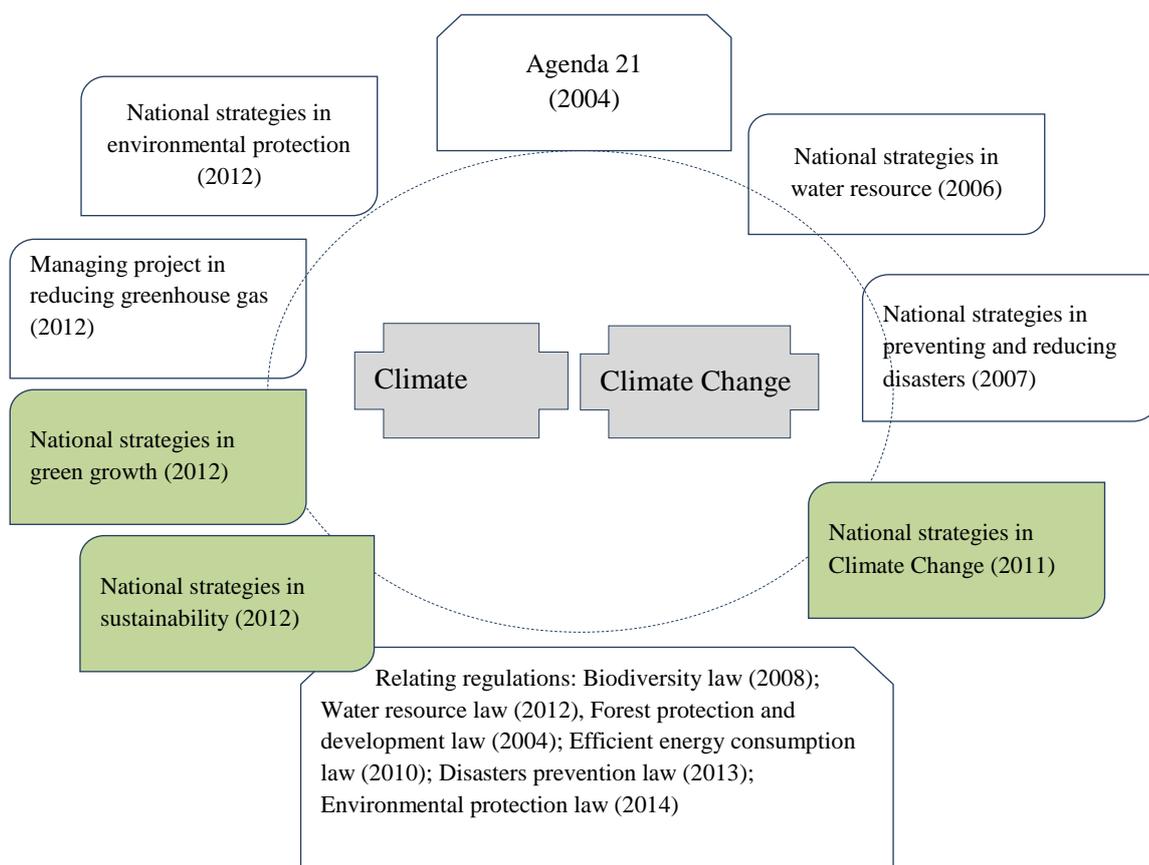
(4) Moreover, CSA are differentiated from other methods by focusing on CC, specific in dealing with challenges in adaptation and deduction and at the same time maintaining food security for everyone. In general, CSA is sustainable agriculture together with the recovery ability. They also find ways in reducing greenhouse gas emission. (CSA = Sustainable agriculture + Recovery ability - Emission).

(5) Different from general intensive agriculture, CSA will (i) reduce cost, increase efficiency, decrease pollution and greenhouse gas, (ii) recover and protect lands and forests, (iii) save water, increase plant productivity, decrease soil deficiency, (iv) raise the ability to cope with disasters, epidemics and disadvantages of the climate, (v) and finally prevent the situations where production cannot be consumed, improve profits and productivity (Pham Thi Sen et al., 2015).

### ***3.3. Policy orientations and guidelines to actuate CSA in Vietnam***

#### ***3.3.1. CSA in national policy frames***

Up to this point, Vietnam has issued many documents directly or indirectly relating to coping with CC. This is to reduce and adapt to climate change, sustainable development, include economic and society into protecting the environment.



**Figure 1: Strategies frame for dealing with Climate Change in Vietnam**

*Source: Synthesized by IPSARD, 2016*

The national strategies to deal with Climate Change and Green Growth Strategy (GGS) are the two main policy frames coping with CC in Vietnam. Strategies and measures in agriculture are becoming more specific, synchronous and complete. They aim at both adaptation and mitigation. The course of actions of the Ministry of Agriculture & Rural Development to deal with CC from 2011 to 2015 focused on (i) effects of CC assessment, rise in sea levels and (ii) inclusion of Climate Change into plans, policies, strategies to develop branches, aspects and regions. The priority projects were (1) building constructions for preventing salinity in cities, populated areas (25 thousands billion dong as a cost), (2) improving dam systems (10 thousands billion dong as a cost). Together with the plans for courses of action, Ministry of Agriculture & Rural Development also launched a scheme for cutting down greenhouse gas in farming. Farming accounts for 43.1% of total greenhouse gas pollution in Vietnam (MONRE, 2010). The aim of this scheme was to move agricultural production into a green, safe and less emission way, at the same time maintain sustainable development and national food security, reduce poverty and effectively prevent CC. All the activities to reduce greenhouse gas emission included in the scheme are specific for each branches of agriculture, raising, fishery, forestry, irrigation and farming.

**Table 2: Policy frame of agriculture for dealing with Climate Change**

<b>Times</b>	<b>Documents' names</b>	<b>Proof for enforcement</b>	<b>Applied periods</b>
2008	Agricultural <i>action frame</i> adapting to Climate Change from 2008 to 2020	Report from steering committee of Agricultural Climate Change adaptation plans program	From 2008 to 2020
2011	<i>Action plans</i> of Agriculture & Rural Development dealing with Climate Change from 2011 to 2015 and visions for 2050.	Climate Change in National Environment program (2008)	From 2011 to 2015 with visions of 2050
2011	<i>Instruction for including Climate Change</i> into building; launch strategies, plans, programs, schemes to develop Agriculture & Rural Development from 2011 to 2015	Action frame in 2008 and agricultural plans for action dealing with Climate Change in 2011	From 2011 to 2015
2011	<i>Reduce greenhouse gas</i> in agriculture and farming until the year of 2020.	Agricultural plans for action dealing with Climate Change in 2011	From 2011 to 2020
2013	<i>Climate Change National plans of action</i> of Ministry of Agriculture & Rural Development from 2012 to 2020	Climate Change National plans for action from 2012 to 2020	From 2012 to 2020
2016	<i>Plans of action</i> dealing with Climate Change in Agriculture & Rural Development from 2016 to 2020, with visions of 2050 <sup>1</sup> .	Decision 2139/QĐ-TTg; Decree 08/NQ-CP Decree 24-NQ/TW by Central Executive Committee XI	From 2016 to 2020 with visions of 2050

*Source: Synthesized by IPSARD, 2016.*

### 3.3.2. Some drawbacks in agricultural policy to deal with Climate Change

Despite the fact that including CC in policy frames has become a crucial factor in planning actions and choosing priorities for adaption in regional economic development, there are still problems remain. Moreover, “CSA” is a new term for policy planners and scientists. Many industries and public societies are also unfamiliar with this. IPSARD (2016) has pointed out some drawbacks in completing the agricultural policies for coping with Climate Change.

- Lacking the budget current has lowered the ability in local government to actively tackle CC;

<sup>1</sup> According to decision 819/QĐ-BNN-KHCN date 14/03/2016 of Ministry of Agriculture & Rural Development approved *Plans of action* dealing with Climate Change in Agriculture & Rural Development from 2016 to 2020, with visions of 2050

- Vertical and horizontal coordination have not been effective as there were overlaps in responsibilities between ministries and departments. Employees taking part in CC aspects have been concurrently holding many positions due to business or job change;

- Raising awareness of CC for relating parties has not been adequate, therefore measures for dealing with Climate Change are considered too passive;

- Including CC into projects and plans for developing economic and society has not received enough attention. Not only that, it misses specific directions;

- Adapting methods on a large scale for severe weather conditions and soil salinity are absent;

- Forecasting, predicting activities and warnings were not highly reliable.

### *3.3.3. Decisions and policies to actuate CSA in Vietnam*

Policies for actuating CSA must be set upon specific principles. Firstly, they must assure the effective use of natural resources without depleting them. Secondly, agriculture must be smartly developed alongside CC. Moreover, this development needs to be green growth and contributive to providing food, materials, woods and fabric for people, at the same time contributive to economic development, poverty reduction, ecology endurance and Climate Change prevention. CSA are methods which can effectively make use of resources and endure unfavorable weather. Additionally, they emit less carbon dioxide into the environment.

The key factor in implementing suitable policies and strategies, broadening technologies and practices for CSA is the ability to understand obstacles in applying them. This includes tradeoffs between investment cost in short term to bring effects in the long run and both distinct and mutual benefits. There are obstacles in managing policy and finance, together with restriction in the ability to approach input resources and output markets (FAO, 2012). Various crucial requirements are set for an environment that can improve CSA and closely coordinate with CC, agricultural development and food security building process (FAO, 2010). Consequently, CSA need to be included in important adaption program launched by the government and Ministry of Agriculture & Rural Development. The priorities are suitable with the agreement and support of the society for CSA development. This process needs to match with national view of countering Climate Change in the long run. Some examples are National Adaption Programs (NAP), Nationally Determined Contribution (NDC).

According to Tran Dai Nghia (2017), the process of inserting CSA into policy frames and action plans should be done in the following steps:

- Step 1: Checking plans, schemes and policies relating to Climate Change Adaption (CCA) and CSA in order to point out the suitable policy frame, gaps and relationship between agents taking part in building key policy frames.

- Step 2: Preliminary investigation: from canvass results, planners from local areas gather general data and information on the process of building the policy frame decided in the above step.

- Step 3: Choose the most suitable frames for including CCA and CSA in local areas. Next, agents enrolling in building those frames are analyzed for the inclusion based on given data and information.

- Step 4: Analyze details of the content, build procedure for policy frames, digitize related parties as well as roles, duties, subjects enrolled, problems and challenges, drawbacks and opportunities for inserting CCA and CSA into this policy frame, especially with projects which are currently carried out or will be carried out in the future.

- Step 5: Based on the results from step 4 the main subjects enrolling in building the frames will discuss to (i) identified problems, gaps, challenges and opportunities investigated from step 1 to step 4 then (ii) compare reality with the procedures carried out according to the regulations in building policies. Finally, the aim of the discussion is to (iii) identify specific steps for building suitable policies, find out priorities for CCA and CSA's inclusion.

- Step 6: Give out proposals for CSA's inclusion activities as well as time frames and subjects taking part in the activities.

### ***3.4. Typical CSA models in Vietnam***

A research done by Caitlin Corner - Dolloff et al., (2016) used Climate-Smart Agriculture Prioritization Framework (CSA-PA) process in Vietnam. They investigated 807 farms and used 111 practice situations in all over the country. The practice situations were analyzed twice by a CSA dataset. In the first period, specialists evaluated, scored and picked out 13 situations with the most potential (11 of which were on plants, 2 of which were on cattle) then in the second period they carried out detailed investigations to fully understand the selections. 8 practice situations were chosen to analyze the cost and effect which were being studied by the Institute of Policy and Strategy for Agriculture and Rural Development in period three. Economic evaluation was made in specific production systems in regions with great importance to agriculture and vulnerable with CC. Some examples are Red River Delta, Mekong River Delta and South Central Coast. The research showed shrimp and crop rotation model, overall planning for rice, a combination of growing crop and growing mushroom were among the most effective and least risky selections. In the fourth period, which are currently being carried out, agents will be drawn towards making investment lists in priorities and plans of action for CSA.

#### ***3.4.1. Rice-Shrimp rotation model in Soc Trang***

Rice-Shrimp rotation is a popular CSA model in the Mekong River Delta. Shrimp farming takes place in dry seasons from February to August while crop farming is done in rain seasons from September to January yearly. Soc Trang province in My Xuyen district has the largest areas for Rice-Shrimp. The result of cost - effect analyse of the two crops model and the Rice-Shrimp rotation model was negative in the Net Present Value (NPV) of rice crop while NPV of shrimp - crop was positive, given that domestic labour was considered. However, if domestic labour was cropped out, NPV for both choices would be positive. Despite that the Internal Rate of Return of the rice crops system was relatively lower than that of the shrimp - crop one (IPSARD, 2016). In addition, Rice-Shrimp

rotation model can provide lots of benefits for the environment and the economy due to sustainable rise in income and food security. For the environmental aspect, this system helps decrease the amount of fertilizer used in crops and reduces risks of epidemic for shrimp. Moreover, it improves the efficiency of land use and it possesses higher ability to withstand risks. Not only that, this system can maintain crops even when salt concentration in land reaches 6% and 10% for shrimp's growth.

#### *3.4.2. ICM<sup>2</sup> in rice using 1M5R model in Nam Dinh province*

This CSA model is popular among Giao Hai in Giao Thuy province, Nam Dinh. This model was developed following the success of 3G3R<sup>3</sup> campaign. This model encourages farmers to use the 'must' seeds. 'Five reduce' means reducing water, materials and loss after cultivation or fertilizer and pesticide use. In this model crops are grown in 2 seasons per year, which are Winter - Spring season from February to June and Summer - Autumn one from July to October. 1M5R<sup>4</sup> has been applied for 15 households in the province since 2015. One of the benefits was fertilizer, water and labour reduction. However, rice production has only increased slightly compared to the original cultivating method.

The results from currency analyse between the original model and 1M5R were positive for the NPV of 1M5R system and negative for the original one since the amount of seeds, fertilizer, pesticide as well as labour used in 1M5R model is less than that of the original one. Apart from that, using 1M5R model has decreased greenhouse gas emission by 5.3 billions CO<sub>2</sub> per ha per year, which equals 588.000 vnd, compared to original cultivating methods.

#### *3.4.3 Mushroom from rice straw in Soc Trang province*

Hay after cultivation is usually burnt on farms when using original method, as a result the amount of greenhouse gas in the atmosphere increases. However, hay on farms in the Mekong Delta has been collected to grow mushroom recently. This act provides income for households and reduces emission at the same time. Soc Trang has wide areas for cultivating mushroom.

According to IPSARD's results in 2016, currency between original two - season cultivating methods and mushroom from rice straw model in Chau Hung in Thanh Tri province, Soc Trang was positive for NPV of both mushroom - crop and crops model. In practice, the mushroom - crop model has higher IRR. Additionally, with the variation of crops and mushroom products the farmers are less likely to receive damages from severe climate (droughts, salinity). Using hay for mushroom will contribute to the process of reducing greenhouse gas and managing pollutants.

### **4. Discussion and conclusion**

It can be considered that there are many science acts in climate change adaption and mitigation in the agricultural aspect these days. CSA is a new term in the world as well as in Vietnam, even though agricultural models relating to CSA have been carried out in

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<sup>2</sup> ICM: Integrated Crop Management

<sup>3</sup> 3G3R = Three Gains and Three Reductions (also known as 3G3T)

<sup>4</sup> 1M5R = One Must Do and Five Reductions (also known as 1P5G)

Vietnam for a long time. Many researchers, policy planners, agricultural employees and farmers themselves tried to include CSA into agriculture in the past, but they have difficulties in understanding and isolating them from other related terms. Awareness of CSA is relatively low at both national and regional level, especially at specific aims and policies for carrying out CSA, cultivating acts, encouraging investment and using new technologies. Therefore, it is important to connect researchers and scientists' work based on scientific proof. These policies can create operation structure to help the models, or give out guidance for farmers who take this into account. Using and handing over new technologies and CSA has brought about great disadvantages to the farmers like agricultural products not being balanced and missing their output markets. Finance investment in new technologies is no doubt too low. Moreover, there were not enough written documents for changing into smart agriculture systems from original ones and the intensity of carrying out CSA is not high enough has made CSA models more difficult to be broaden.

With given situations, some suggestions for applying CSA into practice are (i) building understanding of CSA through researches and evaluations in the past and possible ones, (ii) improving skills for policy planners, researchers, agricultural employees through training programs, (iii) building the frame for CSA's course of action at national level so as to merge knowledge and action of agents, (iv) institutionalizing the enrollment of factors contributing to finance and technology, (v) encouraging finance for broadening the use of CSA and tackling CC, and finally (vi) creating opportunities for local investment into activities for CC adaption.

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# DEVELOPING THE SOCIETY AND THE ECONOMY IN SUSTAINABLE ECOLOGICAL MODEL IN VIETNAM

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## **Abstract**

*Nowadays, many countries consider the sustainable ecological model as an inevitable trend in their socio-economic development. During its development process, Vietnam is affected by unfavorable factors due to the global climate change. Therefore, it is requested to select a sustainable socio-economic development strategy as one of the priorities for the development. However, the success of this development model in Vietnam depends on many factors. This article analyses the theories and practices of the pillars for a sustainable ecology model. Then, some basic solutions are recommended to contribute to socio-economic construction and development in the sustainable ecology model in Vietnam today.*

**Keywords:** Environmental protection, green economy, ecology model, sustainable development, democratic institution.

## **1. Introduce**

In the history of its development, it seems that this is the first time humanity has faced to the great threats and challenges in the development caused by the influences of its own uncontrolled actions. The predictions that the development of the humanity is confronted with the disintegration of social and natural ecological structures seem to become a reality for all nations over the world, especially countries that are directly affected by climate change as Vietnam. This article bases on the analysis of the real situation, then recommends some solutions to construct and develop the society as well as the economy in the sustainable ecology model - a development model regarded as one essential trend associated with specific conditions in Vietnam today.

## **2. Research methodology**

- General methods: *Analytical method*: including quantitative and qualitative analysis; *Synthesis, abstraction, generalization, systematization* of some theoretical and practical issues related to the content of the article.

- *Interdisciplinary approach method*: Using the philosophical method to study, evaluate some research results of some sciences related to the topic of the article such as ecology, ecological ethics, ecological economics, etc.

- This article which is one of the research results of the topic sponsored by Vietnam National University, Hanoi (VNU) with code QG... was conducted by Assoc. Prof. Ph. D Pham Cong Nhat and his colleagues.

### 3. Research results

Sustainable ecological model is a new term in ecological sciences that describes an artificial ecological structure that includes natural, social and human factors existing and interacting, assisting each other in order to achieve a stable, long-term (sustainable) development goal. Developing the society and the economy in the sustainable ecology model is also a concept used by many countries in recent years. This concept which refers to the construction and development of a particular country's socio-economy bases on a sustainable ecology model and three basic pillars: green economy, sustainable environmental protection and democratic institution.

According to the economists, green economy is defined as an economy which mitigates environmental risks and ecological scarcity and aims at the sustainable development without impairing the environment. On the one hand, the green economy is closely related to ecological economics. On the other hand, it also has some connections to politics<sup>5</sup>. The report of the green economy of the United Nations Environment Program (UNEP) in 2011 also states that "to be green, an economy must not only be efficient, but also fair. Fairness implies recognising global and country level equity dimensions, particularly in assuring a just transition to an economy that is low-carbon, resource efficient, and socially inclusive"<sup>6</sup>... A green economy is an economy or model of economic development basing on sustainable development and knowledge of ecological economics. The primary goal of green economy is to create jobs, ensure sustainable economic growth and prevent environmental pollution, global warming, resource depletion and environmental degradation. One of the distinguishing features of green economy is the emergence of green labeling and eco-labeling methods that have appeared when the consumers have to face the friendly measurements for the environment and sustainable development. Many industries are beginning to apply these standards as an effective way to promote the green practices in a globalized economy.... Green economy development is considered as one of the basic pillars of socio-economic development in the ecological and sustainable model.

First, environmental protection and sustainability is to protect the natural environment so that it is always clean and to ensure that every organism can survive there. In the ecological sciences, the concept of sustainability (originated from sustainable and ability) is the property of biological system to maintain the limitless diversity and productivity. Principle of organization for sustainability is the sustainable development including four interconnected sectors: ecology, economics, politics and culture<sup>7</sup>. By approaching it continually and dynamically, the result of this process can form a

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<sup>5</sup> Lynn R. Kahle, Eda Gurel-Atay, Eds (2014). *Communicating Sustainability for the Green Economy*. New York: M.E. Sharpe. ISBN 978-0-7656-3680-5.

<sup>6</sup> UNEP, 2011, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, [www.unep.org/greeneconomy](http://www.unep.org/greeneconomy)

<sup>7</sup> James, Paul; Magee, Liam; Scerri, Andy; Steger, Manfred B. (2015). *Urban Sustainability in Theory and Practice*. London: Routledge & Liam Magee; Andy Scerri; Paul James; Jaes A. Thom; Lin Padgham; Sarah

sustainable system<sup>8</sup>. However, sustainability is first manifested in the natural environment. Therefore, environmental protection and sustainability must first contribute to constructing and preserving the nature sustainably. The natural environment itself is a perfect ecosystem, but since the appearance of human beings and their excessive intervention, the natural environment has become unbalanced, polluted, which threatens the survival of every living organism. Protecting the environment (first of all is natural environment) sustainably is a very important premise of constructing and developing the society and the economy in a sustainable ecological model.

*Democratic institution* is the system of institutions, values, norms of freedom and democracy that incorporate the principles of organization and operation of democracy that guarantees human rights and the ability to self-protect human rights of each individual. The democratic society is a social framework founded on democracy - a state regime built on positive political ideology whose official goal is to create a system of adequate mechanisms and legal environment through reformed and progressive measures. In a democratic society, all activities of the state and citizens are governed by a democratic system, in which the ownership of the people is respected and ensured by the legal system through the tool that is mainly the rule of law. As the present democratic institutions apply universal suffrage for their voting system<sup>9</sup>, it is necessary to mobilize people's participation, social criticism, and fight for social progress. In fact, now a democracy is based on three main pillars: *first, the market economy* is the economy operated by the influence of market rules with many economic components which exists competitively and equally. A perfect market economy is often regarded as the backbone of the democratic society. *Second, the rule of law*, is the form of the State building the law to manage society and putting itself under the law. In the state, the rule of law is always placed on the top with the principle "People have the right to do all that the law does not prohibit and use the law to protect their legal rights and benefits. State agencies and cadres, civil servants can only do what the law allows. All management decisions of the State must be transparent"<sup>10</sup>. *Third, democratic society*, it is the society run by democratic institutions within the framework of a complete rule of law. In democratic society, all thoughts, aspirations and voices of the people are respected. The state was born not to protect the interests of the faction but to be a tool for the people to implement their mastery. Democratic society is also one of the important objectives in socio-economic development in the sustainable ecology model at the present.

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<sup>8</sup> Wandemberg, JC (August 2015). *Sustainable by Design*. Amazon. p. 122. ISBN 1516901789. Retrieved 16 February 2016.

<sup>9</sup> Rex Martin: *A System of Rights*. Print publication date: 1997. Print ISBN-13: 9780198292937. Published to Oxford Scholarship Online: November 2003

<sup>10</sup> Nguyen Tan Dung (2014), "Hoàn thiện thể chế, phát huy quyền làm chủ của Nhân dân, thực hiện thắng lợi nhiệm vụ năm 2014, tạo nền tảng phát triển nhanh và bền vững" (*Completing institutionalization, promoting people's right to mastery, successfully implementing tasks of 2014 and creating foundation for rapid and sustainable development*). 2014 New Year's Message. Online newspaper of the Government of the Socialist Republic of Vietnam. Updated on 1st January.

Developing a sustainable society and economy in the sustainable ecological model is one of the essential trends of many countries in the world, including the ones that are suffering many impacts of global climate change trends such as Vietnam.

In Vietnam, from the 8th Congress (1996), the Communist Party of Vietnam has started to set goals for the strategy of constructing and developing the social-economy in the direction of "rapid economic growth, high efficiency and sustainability go with solutions for social problems, security and national defence ensured, consolidation of national security and defense, improvement of public life..."<sup>7</sup>. The viewpoint of Vietnam's socio-economic development has been affirmed in the documents of the 9th, 10th, and 11th Congresses, especially in the 2011-2020 socio-economic development strategy. That is "rapid development associated with sustainable development, sustainable development is required throughout the Strategy"<sup>8</sup>. At the 12th Congress, the viewpoint of constructing and developing the social-economy in a sustainable ecological model was concretized once again by the Communist Party of Vietnam with the strategy "renew the growth model". Therefore, "Model of growth in the coming time will prefer the combination of intensive and extensive development with more concentrations on intensive development, whose goal is to raise the productivity and competitiveness by effectively exploiting scientific-technological advances, increasing labour productivity, improving the quality of human resources, being active in international integration, developing rapidly but sustainably, harmonizing short-term and long-term goals as well as economic growth and cultural development, exercising social progress and equality, being eco-friendly, and ameliorating the material and spiritual life of the people"<sup>9</sup>... Particularly, the Politburo, the Central Committee of the Communist Party of Vietnam has recently issued Resolution no 23-NQ/TW on 23<sup>rd</sup> March 2018 on *Orientation for constructing the national industrial development policy until 2030 with the vision to 2045*. One of the primary guiding viewpoints emphasized by the Resolution was: "Make use of as much as possible the country's advantage in the period of golden population; exploit thoroughly the achievements of the Fourth Industrial Revolution, the advantages of the trade in order to develop effectively some key industries with the strategies, competitive edge; develop decisively the information technology industry, electronic industry; develop centrally the processing and manufacturing industry; develop considerably the intelligent manufacturing industry; focus on developing the green industry"<sup>10</sup>. According to the analysis above, sustainable ecology model is urgent and essential for Vietnam's current society and economy.

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<sup>7</sup> Vietnamese Communist Party (1996), *Van kien Dai hoi dai bieu toan quoc lan thu VIII (8th National Party Congress Documents)*. Vietnam's National Political Publishing House, Hanoi, p.82.

<sup>8</sup> Vietnamese Communist Party (2006), *Van kien Dai hoi dai bieu toan quoc lan thu XI (11th National Party Congress Documents)*. Vietnam's National Political Publishing House, Hanoi, p.98.

<sup>9</sup> Vietnamese Communist Party (2016), *Van kien Dai hoi dai bieu toan quoc lan thu XII (12th National Party Congress Documents)*. Vietnam's National Political Publishing House, Hanoi, p.87.

<sup>10</sup> Vietnamese Communist Party (2018), Resolution No. 23-NQ/TW of the Politburo to *orient the policies on national industrial development until 2030, with a vision toward 2045*. VOV Online Newspaper, updated on 23<sup>rd</sup> March

Being a developing country carrying out industrialization and modernization, in recent years, Vietnam has been recognized as one of the countries with fast socio-economic development pace in the region and over the world. After more than 30 years since the reform of Vietnam, the country's socio-economic development has generally been improved, the people's material life has been gradually improved, and the spiritual and social life has been developed progressively. The development of Vietnamese society and economy has had development achievements which are worth encouraging. However, due to many objective and subjective reasons, Vietnam's socio-economic development in the past few years also has created many challenges to the demands of socio-economic development in a sustainable ecological model. In terms of economy, due to the limitations of science, technology and the quality of the labor force; the current level of production in Vietnam is still backward and unstable. It can be seen clearly in the field of agricultural production.

Vietnam is one of the countries with advantages in agricultural production, yet it does not know how to make use of this strength. Although the labor force in the agricultural sector is relatively crowded (accounting for 41.9% of the country's labor force in 2016)<sup>11</sup>, labor productivity is low due to the limited qualifications of labor and backward technology. Therefore, agricultural contributions to the overall growth of the economy are insufficient and unsustainable. (In 2016, the growth rate of the agricultural sector was only 1.36%, much lower than 2011; the contribution ratio of agriculture accounted for only 16.32% in the general structure of the economy)<sup>12</sup>. Industrial production and service have made major contributions to the Vietnamese economy. However, in reality, the growth of the Vietnamese economy over the past time mainly relies on exploitation, and export of raw materials. Highly sustainable industrial sectors such as financial services, transportation, tourism, information technology, etc have developed but not firmly.

In Vietnam, the environmental protection in a sustainable way is facing lots of challenges. Due to limited public awareness of environmental issues and inadequate legal system, especially the law on environmental protection, over the past few years, we have accidentally prioritized the mode of production and the life style which is unfriendly to the nature. This is one of the main causes leading to current difficulties in protecting the ecosystem in Vietnam. Some key environmental indicators even fall below average compared to other countries in the area and in the world. According to the latest study published in early 2016, the overall ranking of Vietnam after measuring five indicators, was at 131st in the world, lower than China at 109th place, Syria at 101st, and the United-States at 26th. Finland, a country in Northern Europe, ranked top in the chart. Specifically, in terms of wastewater treatment, Vietnam scored 19.8/100 points, ranking in 124th place among 139 countries. Regarding forest cover, with a score of 23.97/100 points, Vietnam was at 100th in the total of 116 countries. Whereas, this Southern Asian country was near

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<sup>11</sup> General Statistics Office of Vietnam (2016), *Press release announcing socio-economic statistics of 2016*. Online newspaper, updated on 28th December.

<sup>12</sup> Communist Review (2017), *Vietnam socio-economic overview in 2016*. , updated on 11th June.

bottom in Climate and Energy rankings, placed at 105th out of 113 countries<sup>13</sup>. Continuous environmental degradation along with natural disasters increasingly linked to climate change have been causing significant human and material damage as well as putting huge pressure on the nation's sustainable development.

During the past years, “the socialist rule of law has been progressively improved and perfected; its effectiveness and efficiency have been increased”. However, in order to have a real democracy accelerating the sustainable socio-economic development, many shortcomings and challenges need to be overcome. Viewpoints and perceptions towards social democracy are, in general, still controversial. Moreover, there are great difficulties in implementing people's mastery in economic, political and social fields due to an adequate system of mechanisms, policies and laws. “The mastery of people in many areas and fields is still violated. At times, the exercise of the democracy is limited or just a formality in some places; it is also reported that some people distort the democracy and use it as a pretext to disrupt the national unity or disturb national security, social order and safety”<sup>14</sup>. In addition, many pressing social problems are going on, such as fall back into poverty, youth unemployment, increasing social evils and criminal offences. These issues along with corruption and red tape, which are escalating and become more sophisticated, are leading to the erosion of social trust, hindering the renovation and the sustainable socio-economic development.

All these drawbacks and challenges prove that to attain the core objectives of the national strategy for sustainable socio-economic development as analyzed above, Vietnam should take the following measures comprehensively:

*Firstly*, Stimulating Vietnam's "Green Growth Strategy" in every sectors of the economy will be a good way to go. One of the goals of this strategy is to accelerate the economic restructuring, make the best use of natural resources, and reduce greenhouse gas emissions by researching, applying green technology and developing infrastructure. As a result, Vietnam can improve economic efficiency, respond to climate change, contribute to the poverty alleviation, and create driving force for the sustainable development of the economy. The standpoint is that green growth is by the people and for the people, society will develop in harmony with natural environment in order to reduce the poverty, enhance citizen's material and spiritual life. To do so, it is necessary to restructure the economy and improve the institutions in a way that encourages economic sectors to employ effectively natural resources to make high value added. Besides, the country should restrict and then eliminate the industries exhausting natural resources and polluting the environment. In the short time, the exploitation and production of raw materials (petroleum, coal, rare ores, etc.) need to be slow down if technique and technology cannot meet the requirement of a green economy. Vietnam should also study, apply and update widely modern technology in the country as well as in the world to be more effective in the use of resources and friendly

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<sup>13</sup> Data go with *Tien phong Newspaper (2016)*, Online version, updated on 9th April.

<sup>14</sup> Vietnamese Communist Party (2016), *Van kien Dai hoi dai bieu toan quoc lan thu XII (12th National Party Congress Documents)*. Vietnam's National Political Publishing House, Hanoi, p.168.

to the environment. Additionally, it is essential to strengthen the propaganda on the active role of the economic sectors and every single individual in establishing a green economy nationwide. In company with the improvement of the laws and policies, the country needs to build an appropriate machinery of government in charge of managing and running the green economy in every field.

*Secondly*, promoting the strategy for durable management and protection of the environment should be integrated into Vietnam's actions. To be precise, departments, branches, administrative agencies and enterprises have to implement fully and properly viewpoints, guidelines, policies of the Party and the State on environmental management and protection, which is basis for sustainable development. The perception about the relationship between economic growth and ecological protection must be changed. Economic growth is not always the priority over the measures against potential polluting sources and polluted areas. Importance should, in addition, be attached to the investments in research and application of environmental protection technologies. Regarding international relations, it is a must to intensify global cooperation in training and developing Vietnam's human resources, applying world's advanced technologies, which are adaptable to enterprise's situation, in ecological protection. Entrepreneurs, moreover, should be ready to renovate their production technologies to be more modern, eco-friendly, and resource-saving. Meanwhile, the government has to revise, amend, supplement and finalize policies on management of investment in science and technology for the good of the environment. As a result, the policies supporting investments at any price must be removed because they can turn Vietnam into a landing field for outdated technologies. In the short term, Vietnam had better concentrate on curbing and minimizing new sources of pollution, especially, on controlling the projects that discharge a great volume of sewage into environment, polluting manufacturing sectors such as steelmaking, mining, thermal power, paper production, and textile dyeing, controlling the discharge of seriously polluting factories as well as those with outdated technologies. For the contaminated areas, there must have methods for amelioration and rehabilitation. Simultaneously, Government should increasingly invest in environmental infrastructure and technology. For the time being, more attention needs to be paid on enhancing capacity to respond to climate change and reducing greenhouse gas emissions; encouraging scientific research, development and application of ecological technology; intensifying and diversifying investments in environmental protection; strengthening the propaganda in order to raise public's awareness of the importance of environmental protection. In the long term, it is crucial to finalize the legal system for environmental protection. By which, Vietnamese society and economy will have a legal basis for its sustainable socio-economic development.

*Thirdly*, renovating Vietnamese social institutions in the pursuit of democracy and progress which meet the demand for ecologically sustainable socio-economic development certainly plays an important role. This should be even considered a key solution to ensure the success in the strategy of sustainable socio-economic development. To realize this, Vietnam's first mission is to reform its leadership style towards political system. On the one hand, the country consolidates Party's leadership; on the other hand, it builds a

mechanism for democracy, an insurance for the effectiveness of the political system. Then, Vietnam's socialist model, which is based on democracy, rule of law, and modernity, is continued and perfected as emphasized in the Resolution of 12th National Party Congress: "In its organization and operation, the Government has to promote democracy, conform to the requirements of the rule of law, produce positive changes, and obtain better results. Building the rule of law socialist state must be carried out synchronously in legislative, executive, judicial aspects, and be carried out synchronously with the renovation for a streamlined, effective and efficient political system along with economic, cultural, and social renovation." Continuing to complete the mechanism for legal and constitutional protection"<sup>15</sup>. Additionally, it is necessary to keep renewing the operation of institutions of the state, namely Vietnamese Fatherland Front, Ho Chi Minh Communist Youth Union, associations and unions. Pursuing the democracy and reality, these organizations create a real democratic society to encourage the active participation of Vietnamese from all classes in the establishing and pushing the socio-economy based on the sustainable socio-economic development model

*Finally*, continue to enhance the implementation of Vietnam Sustainable Development Strategy until 2020 with the vision to 2030.

In order to complete these missions, Vietnam's viewpoints and solutions are:

*Viewpoints:* Human beings are the center of sustainable development. The government should consider the role of people as the key subject, resources and targets of sustainable development, aim to fully meet the material and spiritual demand of people of all strata, make the country wealthy and strong, the society democratic, equal and civilized; develop an independent and self-reliant economy with active international integration for sustainable development<sup>16</sup>. Sustainable development is the requirement lasting throughout the process of national development; Sustainable development is the common work of the whole Party, people, authorities at all levels, ministries, agencies, localities, enterprises, social organizations, communities and individuals; Sparingly and effectively exploit natural resources, particularly non-renewable resources, preserve and improve living environment; build a learning society, environmentally-friendly lifestyle, sustainable production and consumption. Besides, science and technology are the foundation and driving force of national sustainable development. Modern, clean and environmentally-friendly technologies need to be widely applied in production fields.

*Solutions:* Continue to improve institutional system and national administration quality for sustainable development; enhance investments and effectively use State-funded capital to implement the Strategy for Sustainable Development in Vietnam by 2020 with the vision to 2030; Accelerate dissemination and education to raise the whole society's awareness of sustainable development; Intensify the role, responsibility and participation of businesses, socio-political organizations, social-professional organizations, non-

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<sup>15</sup> Vietnamese Communist Party (2016), *Van kien Dai hoi dai bieu toan quoc lan thu XII (12th National Party Congress Documents)*. Vietnam's National Political Publishing House, Hanoi, p.175.

<sup>16</sup> Vietnam Government Portal (2012), Decision No.432/QD-TTg of the Prime Minister. *Approval of sustainable development strategy of Vietnam period 2011 – 2020*. Updated on 12nd April.

governmental organizations, and residential communities in deploying, consulting, criticizing and proposing sustainable development policies; Amplify the role and effects of science and technology, push up technological renovation to implement sustainable development; Expand international cooperation in the fields of information exchange, science and technology for sustainable development, develop environmental economics (waste treatment, energy-saving technology, low-carbon, and waste renewal technology, etc.)

#### 4. Conclusion

Constructing and promoting sustainable socio-economic development are not only an objective tendency, but also an urgent requirement of Vietnamese economic development. Based on the features of socio-economic development in the country as well as the negative impacts of climate change on a global scale, in the past years, Vietnam has actively prepared and deployed the strategy for sustainable socio-economic development, which has gained enormous encouraging results. However, in order to achieve successfully this socio-economic development strategy and the resolutions of the Party and the State of Vietnam, it is essential to implement synchronously the key solutions analyzed in the article above. The most important factor is still the right attitude and determination of every levels, branches and individuals in transforming Vietnam's strategy for sustainable socio-economic development from vision into reality in the upcoming years<sup>17</sup>.

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# AUDIT OF MINERAL RESOURCES FOR SUSTAINABLE DEVELOPMENT IN VIETNAM: RECOMMENDATIONS FOR THE STATE AUDIT AND INTERNAL AUDIT

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## **Abstract**

*Natural resources have long been argued to be an important input for economic growth. Vietnam is rich in natural resources but it has been claimed for excessive usage. Sustainable usage is thus called for. Regarding mineral resource exploitation and usage in Vietnam, there remain many problems however. Audit for mineral resources has recently been raised by the State Audit of Vietnam. The paper aims at analysing the current status of audit of mineral resources in Vietnam then providing recommendations on audit of mineral resources for sustainable development purposes.*

**Keywords:** Audit, mineral resources, sustainable development

## **1. Introduction**

Natural resources have long been argued to be an important input for economic growth (Badia - Miro edited, 2015). Vietnam is very rich in natural resources, both in terms of quantity and kinds. However, recent research results show that economic growth of Vietnam depends heavily on capital in general and natural resources in particular (Nguyen Van Hau edited, 2012; Vu Van Phuc edited, 2012; Vo Tri Thanh and Nguyen Tri Dung, 2012). Reforming economic growth models of Vietnam thus focuses on increasing the efficiency of capital usage. In the context of limited mineral resources, efficient usage of mineral resources helps increase economic growth at the present and preserve resources for the future generations thereby serving sustainable development. In practice, management of mineral resources in Vietnam reveals many problems such as extracting mineral resources without licences, extracting mineral resources more than quotas granted, underreported extraction volume, insufficient recovering methods generating adverse impacts on environment and civil livelihood, late submission of environment tax and natural resource fees...

Audit of managing natural resources has been conducted every year by the State Audit of Vietnam (SAV) and internal auditors of mining corporations. Given the existing

problems in mineral resources management in Vietnam, research on the practice of audit of mineral resources is conducted so as to identify and suggest improvements for mineral sustainable management.

## **2. Method**

The authors use literature reviews, and interviews of state auditors and internal auditors to gather information on research issues.

State auditors interviewed are the head of Auditing Departments/ Regional Offices of the SAV. They are in charge of making decisions to select the Department of Resources and Environment in cities and provinces to be audited. They also evaluate the necessity of the audit and approve audit plans and contents, verify audit evidences and draw audit opinions and recommendations. Other state auditors interviewed are senior auditors in the State Audit headquarter in Hanoi. They describe the audit practice and challenges in auditing the theme. Internal auditors interviewed are working at the mining corporations of Vietnam.

Literature review is used with documents on managing and using mineral resources, audit files and audit reports of the SAV and internal auditors of mining corporations.

## **3. Results**

Literature review helped the authors summarize the legal framework for auditing mineral resources in Vietnam.

Audit of mineral resources is stipulated in the Law on State Audit and other documents of the SAV. According to the 2015 Law on State Audit, the SAV has functions of evaluating and asserting the true and fair presentation of financial statements, compliance to rules and regulations and the economy, efficiency and effectiveness<sup>1</sup> (3Es) of management and usage of public assets and finance (Article 4 of the 2015 Law). As mineral resources are national assets and managed by the state so the management and usage of mineral resources should be objects of the SAV. The State Audit, rather than independent audit or internal audit, is in a right position to verify the management and usage of mineral resources for the sustainable development strategy of Vietnam.

Relating to the management and usage of mineral resources, auditees include (i) managing entities and (ii) extracting and using companies. Managing entities comprise the Ministry of Natural Resources and Environment, the Ministry of Construction, the Ministry of Industry and Trade, the Ministry of Finance, the People Committee in cities and provinces, the Department of Natural Resources and Environment, the Department of Construction, the Department of Industry and Trade, the Department of Tax in cities and provinces. Extracting and using companies include large corporations such as the Vietnam National Coal and Mineral Industries Holding Corporation Limited, Vietnam National Oil and Gas Group, Petrol Vietnam and other smaller mineral exploring, extracting, processing

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<sup>1</sup> Effectiveness of an activity means the degree that outcomes of the activity meet the target, efficiency of an activity means the relationship between the output and input of such activity, economy of an activity means saving inputs for such activity while outputs achieve the target (Nguyen Quang Quynh et al. 2009; Nguyen Quang Quynh - Nguyen Thi Phuong Hoa et al. 2017; Moeller 2009; Pickett 2010)

and trading companies. These companies can be state owned companies, foreign invested companies, or private companies.

At the SAV, Department 2 conducts audits of economic Ministries such as the Ministry of Finance, the Ministry of Industry and Trade, the Ministry of Construction, the Ministry of Natural Resources and Environment. Department 6 audits corporations funded totally or partly by the national budget. Regional Office audits the budget of local People Committees (in city/province and lower levels), companies and investment projects funded totally/partly by the local budget. The selection of auditees is on the rotation basis, every 2-3 years the auditee will be included in the audit plan.

Following the international trend concerning about audit of extractive industries which is led by INTOSAI and basing on the current demand in Vietnam, the SAV early organized many international and national conferences in audit of management and usage of minerals. Supreme audit institutions of countries that are rich in minerals were invited to discuss and to share experiences to the SAV. Very shortly then, in the mid of 2012, the General Auditor of the SAV issued Decision 719/2012/QD-KTNN dated April 24, 2012 on auditing management and usage of minerals. This Decision covers a wide range of important aspects from audit objectives, audit contents, auditees, materiality, audit risks, audit methods to collect audit evidences, working papers, audit files and audit report forms. Hence, this Decision is a very comprehensive framework and provides an excellent guideline for state auditors to conduct audits of management and usage of minerals. The stipulations in Decision 719/2012/QD-KTNN are much in line with international practices which are summarized and suggested by INTOSAI Working group on extractive industries - WGEL.

Specifically, objectives in auditing management and usage of minerals are stipulated to include: (i) evaluation of the economy, efficiency and effectiveness (3Es) in management and usage of minerals, (ii) in time detection of corruptions, waste and mistakes in management, licence issuance, extraction and trading of minerals by managing entities and companies, identification of responsibility of individuals; (iii) informing auditees about mistakes and correcting management of minerals, tax and fee collection, and informing authorities to deal with violations, and correcting policies on management and extraction and trade of minerals, (iv) providing the Standing Committee of the National Assembly with statistics that help the Standing Committee oversight management, extraction and trading of mineral resources. General contents of audit of management and usage of minerals by the State Audit are to verify and assess the management, licence issuance and the practice of mineral extraction in relation with environment protection; compliance of management and extraction of minerals in localities; regulation issuance of local authorities in management, licence issuance, extraction and processing of minerals in localities; licence issuance for exploration and extraction in locality; implementation of plans and environmental preservation; regulation compliance in extraction and processing minerals; tax compliance of extracting and trading mineral resources. Hence, the audit contents are very comprehensive, based on the features of managing and using mineral resources. With these audit contents stipulated, it can be

seen that auditors will evaluate much the effectiveness of management, and then reliability of information concerned, the economy and efficiency of using mineral resources. After describing the general audit contents, Decision 719/2012/QĐ-KTNN also points out audit contents at each auditee so as to provide detailed guidelines for auditors.

*Practice of auditing management and usage of mineral resources for sustainable development in Vietnam by the State Audit of Vietnam and internal auditors of mining corporations.*

Using the literature review over audit files and audit reports, and interviewing state auditors and internal auditors of mining corporations, the current practice of auditing management and usage of mineral resources in Vietnam has following features:

Financial audits are conducted to all the auditees aforementioned. Auditing the Ministry of Natural Resources and Environment (MNRE), the Ministry of Industry and Trade, the Ministry of Construction, the Ministry of Finance, the General Department of Geology and Minerals (GDGM), Department of Survey and Mapping, Institute of Geoscience and Mineral Resources, Hanoi University of Natural Resources and Environment is conducted on a rotation basis of every 2-3 years by Department 2 of the SAV. The audits have so far basically been financial audits. Auditors check the reported expenditures and revenue in the financial statements for their reliability and compliance to the public finance regulations. In this aspect, auditors have been also concerned with economy and effectiveness of spending and revenue. Actual expenditures are compared with budgeted expenditures and overspendings or out-of-budget spending will be claimed back to the state budget. Reported revenue is verified for the possibility of omission or understatement.

Nonetheless, evaluation of effectiveness of MNRE and other such auditees in doing their functions such as resource projection, licencing, supervision, etc. remains limited. Auditors did not assess how high the results achieve the established targets. Assessment for efficiency of resources used by MNRE and other managing entities has not been carried out as well. This is partly because Department 2 has to cover many other Ministries, partly because evaluating effectiveness and efficiency are very complicated relating to many aspects and assessment criteria to be used, and they remain new to the SAV. Theoretically speaking, identification of comprehensive, suitable and feasible assessment criteria for effectiveness and efficiency of each auditee still a thorny issue in operational and integrated audits. In summary, auditors mainly assess the reliability of financial statements and economy, and compliance to financial regulations but not 3Es of managing entities yet.

The local People Committee in cities and provinces, the Department of Natural Resources and Environment (DNREs), the Department of Construction, the Departments of Industry and Trade, the Departments of Tax in cities and provinces are subject to be audited by the Regional Offices of the SAV. There are 13 Regional Offices throughout the country and they are together responsible for audit all cities and provinces of Vietnam. Auditing these Departments is not conducted on a yearly basis but based on judgment of necessity and materiality by the Head of the Regional Offices. The audits are mainly

financial audits similarly to the audit of MNRE and other national managing entities. Auditors assess the reliability of reported expenditures and revenue and the compliance to public finance rules.

Corporations and national companies that extract and use mineral resources are subject to be audited by Department 6 of the SAV. Major corporations in this field are Vietnam National Coal and Mineral Industries Holding Corporation Limited, Vietnam National Oil and Gas Group, Petrol of Vietnam, and other state-owned companies operating in this area. Department 6 audits corporations, and so far mainly their financial statements. Auditors therefore focus on the reliability of reported financial statements, including reported revenue, reported expenses, reported profit and reported tax and fees payables. Tax and fee payables include corporate income tax, value added tax, mineral levies (stipulated in Resolution 712/2013/NQ-UBTVQH) and environment fees (Decree 74/2011/ND-CP). Auditors verified the fairness of extraction volume reported, the correctness of unit prices applied, recorded revenues, and expenditures, profit and tax and levies payables. The appropriateness of tax rates and types has not been addressed yet.

Compliance audit conducted by Department 6 at corporations remains limited. Actual extraction volume of corporations was assessed in comparison with the licence granted. However, other industrial regulations, technology used, environmental impacts were not focused on. This may be due to the complexity of technical issues and no experts to be incorporated in the audit team yet.

Mineral exploring and using companies that are funded by local budgets are subject to be audited by SAV's Regional Offices. The audits are much similar to the audits conducted by Department 6. Regional offices select auditees based on assessment of necessity and materiality. Audits are mainly financial audits and audits of compliance to public finance regulations and licences granted.

Since 2012, the SAV has been starting operational audits on managing and using minerals. The operational audit aims at 3Es purposes: evaluating economy, efficiency, and effectiveness (Nguyen Quang Quynh et al. 2009, Nguyen Quang Quynh – Nguyen Thi Phuong Hoa 2017). In 2012, the integrated audit on management and usage of mineral resources were started in a sample of 15 localities. In 2013, the operational audit on licence issuance during 2009-2012, management of mineral extraction by the MNRE and local People Committees and DNRE, recovering and preservation of environment, compliance to government regulations of local authorities in issuing local regulations was conducted for all cities and provinces. The auditors found and withdrawn licences that were out of date; ceased licences that were issued by unauthorized persons; recommended authorities about closing mines and environmental rehabilitation; reported resources levies and environmental fees and late and inappropriate submission, management and usage of revenue from mineral operations.

Regarding internal audit at mining corporations, internal auditors have mainly conducted compliance audit, such as audit for compliance with exploitation quota, environmental regulations, labour safety regulations, etc. This is because of many

regulations over mining companies and compliance will be a concern of top management. Operational audits have not been conducted yet. Efficiency of technology used, efficiency of processing etc. have not been done. Independence of internal auditors remains weak as they belong to the Board of Directors, not the Board of Management.

#### **4. Discussion and Conclusion**

In the practice of Vietnam, not only licencing and extracting mineral resources reveal problems, but also the use of minerals, preservation and habilitation of environment, ... The operational audit over mineral resources should therefore be enhanced. Rampant exports of raw minerals without deep processing as stipulated in the Mineral Strategy and environmental impacts of mineral processing activities require the SAV and internal auditors to expand their scope of operational audits. In future operational audit of management and usage of mineral resources, the Ministry of Industry and Trade should be included. Given the good philosophy in Circular 41/2012/TT-BCT of the Ministry of Industry and Trade on limiting export of raw mineral resources and advanced extracting and processing technology should be used, the enforcement seems rather weak (Phong Lam, 2013). Therefore, the SAV should give *a priority* on auditing how does the Ministry of Industry and Trade conduct its inspection over mineral exports; and how are the findings of inspection dealt. Other contents such as auditing the planning of minerals with criteria for processed products, advanced technology used, and exports of minerals can be included. This also holds true with internal auditors. This may help achieve the objective of efficient and economical use of mineral resources of the Strategy for Minerals, thereby preserving mineral resources for the future generations.

The mineral royalties and environmental fees stipulated by the Ministry of Finance. Right now the mineral royalties in Vietnam are claimed to be at the very high level as compared with international practices, but the purpose of increasing state revenue has not been achieved due to the tax avoidance (Hong Lam, 2015). Hence, the SAV should focus more on the effectiveness and efficiency of tax inspection. SAV may also cooperate with internal auditors of mining corporations to verify the mineral extraction amounts and types, and tax payables corresponding.

The Ministry of Construction should be added in the audit of management and usage of mineral resources. Given the widespread extraction of limestone for cement production and illegal extraction of sand in some provinces generating adverse impacts on environment and civil livelihood surrounding, there is a question for planning and oversight of construction material extraction. The SAV and internal auditors should audit the planning for exploring, extracting and using raw materials for construction; audit the management of the Ministry of Construction on extracting, processing, exporting raw materials for construction and cement production; audit the preservation of environment, landscape and labour safety during extracting raw materials for construction.

Regarding usage of mineral resources of extracting and processing companies, the SAV should emphasize more on the inspection of local People Committee over technology used and labour policies of exploring and processing companies. These contents have not

been addressed yet. Since large extracting corporations funded by the state are audited by the SAV, other groups such as foreign extractive and processing companies and Vietnamese private companies are not auditees of the SAV. Hence, the SAV should focus more on the regulation and rule compliance of these companies by having scrutiny over the inspection and punishment of local People Committees and local authorities.

Besides, the use of environment fee collected which are left for local People Committees should be verified by the state auditors as well. According to Decree 74/2011/ND-CP on environment fee of mineral extraction, 100% of environment fees from non-oil minerals is left to locality to prevent and limits adverse impacts on environment of mineral operations, recover degradation and pollution due to mineral operations, preservation and rehabilitation environment. 100% of environment fee from oil and gas extraction is submitted to the central budget for environment preservation and investment stipulated in the Law for Environment Protection and the Law for State Budget. Thus, auditors have to examine the compliance in using these environment funds. Auditors may be concerned with appropriateness of rates as well, especially when there is high inflation.

Similarly, money from granting rights to extract mineral resources will be left 100% and 30% for local authorities if licences are issued by local and central authorities, respectively. This money left to local authorities is to serve basic inspection of mineral deposits and to protect mineral resources in locality. Compliance in using this fund should be covered by the SAV in the future.

In short, for sustainable development, extraction and usage of mineral resources in Vietnam should be verified and improved. The paper analyses the practice and gives some recommendations to the SAV and internal auditors in mining corporations in the hope that they can contribute more to the sustainable extraction and usage of mineral resources in Vietnam.

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# A SOLUTION OF MANAGEMENT INFORMATION SYSTEM IN GREEN ENVIRONMENTAL MANAGEMENT IN VIETNAM

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## **Abstract**

*Making a green environment in cities in particular big cities like Hanoi, Ho Chi Minh is one of essential issues in development. The concept of green environment here includes tree in the parks, and other green spaces in the cities. Building a green environment management system is necessary for many sections in the cities in order to share the data and useful information. The paper mentioned to the fact of management in green environment at the moment in Vietnam. Therefore, a solution of building a management information system (MIS) in urban green management is proposed. The framework of system shows how data and information can share in the system. Some requirement steps for building system are also analyzed in order to take advantage of using Internet of Things (IoT) to manage it efficiently.*

**Keywords:** green environment; management information system MIS; green trees; cities.

## **1. Introduction**

Vietnam has got about 795 urban (35.2% urbanization) in 2017 (Nguyen Van Thuy, 2017). The rapid of urbanization rate might lead to overload urban infrastructure, causing bad impacts on the environment. In recent years, urban environmental management has made remarkable progress. Many policies and regulations on environmental protection have been improved. The investment and mobilization of environmental protection resources has been strengthened. Many projects, programs on environmental quality have been improved or deployed. The quality of the air and water environment in some cities in Vietnam has been improved markedly. However, besides the achieved results, there are still limitations and challenges in the planning, controlling, and monitoring of environmental system such as green environment in cities which cause environmental pollution, especially in urban areas. The green environment is broadly understood as all the pieces of trees (streets, parks, trees, flowers in families, flower gardens, lawns, urban forests and open water, etc.). The green environment improves the tropical climate, especially meaningful in the sunny season in Vietnam. In cities context, the most necessary requirement for green urban management is the green of streets and parks (in short, urban greenery) as they relate to planning, budgeting for preservation and development in cities every year. For example, according to VTC News (2017), Hanoi lack significant green environment particular with green trees. The average rate of green trees in Hanoi is about 2-3 m<sup>2</sup> per person whereas the minimum rate is about 10 m<sup>2</sup> per person (United Nation standard requirement). Some developed countries this rate is about 20-25 m<sup>2</sup> per person.

The characteristics of green management particular to trees can be seen as follows.

- The number of trees is very high in alternative locations because they are distributed in different areas in the cities.
- The trees will be changed in number or size, or high, etc. by the time.
- There is a variety of species. Their ages are totally different because they will growth over time. As the public transport sectors in the cities have used the unit price for maintaining green trees through species, structure of trees, etc., therefore, the data of trees needs to be updated monthly or annually.

By above complex characteristics, the tool, which supports the management of green environment, is essential. It can help public transportation sector manage, monitor, and control the green trees in the cities.

In addition, the green environment in the cities usually goes in company with other entertainment areas such as recreation venues, fitness venues, relaxing places. Therefore, a management information system might help the authority officers to plant right trees in right places in order to enrich the life in the society, encourage the nature love from citizens. Significantly, a city having many green landscapes is of course often associated with tourist attractions.

Moreover, in cities' development, green trees are in planned with many urban issues such as electricity lines, drainage pipes, underground cables, water supply pipes, etc. Therefore, building a management information system will be needed to share information to other systems as well as providing essential information for authority officers in making decision of cities infrastructure development plan.

To conclude, the public transportation sector in the cities, which manages a huge number of green trees, needs taking advantage of information technology especially Internet of Things (IoT) in theirs works such as building a management information system.

The paper has structure as follows: The general introduction is shown in section 1. The fact of green environment in particular green trees in some cities is represented in section 2. The main contribution as a solution of building MIS is proposed in section 3 in terms of a framework proposal. Discussion and conclusion will be represented in the last section.

## **2. Green Environment in Some Cities in Vietnam**

In Vietnam, the distribution of green environment particular green trees is not equitable in many places in the cities. For example, in Hanoi, there are a big number of huge trees in the old districts whereas young trees are located in the new districts (Pham Anh Tuan, 2017). There also exists of unbalance of growth trees in the old streets compared to the new streets. The old streets have a little number and small trees compared to the others have shady and nice green trees. Moreover, according to Pham Anh Tuan (2017), the new streets have good quality of green trees for cities' environment such as dracontomelum; nacre; flamboyant; etc. These species of trees are adaptive to green environment in the city. Even in each street in Hanoi, the number of species planted by the

authority's office and local citizens often is contradicted. The local citizens have just plant the trees like filling the gap to make shady. Sometimes, they plant incorrect species compared to city regulation because this is individual favorite. This creates a confusion image of the street. There is confusion not only in the variety of plants, but also in the variety of ages, heights and morphological characteristics. For example, the distribution of alternative species of trees in some districts in Hanoi can be seen in Table 1.

**Table 1: Variety of species in some districts**

Index	No of Streets	Species				Sum
		<=6	7-12	13-18	>18	
1	Streets in BaDinh District	10 (17.86%)	28 (50%)	11 (19.64%)	7 (12.5%)	56
2	Streets in ThanhXuan District	21 (32.81%)	30 (46.88%)	9 (14.06%)	4 (6.25%)	64

(Soure: Pham Anh Tuan, 2017).

According to Vu Le (2017) about the news from the Department of Construction Hanoi, Hanoi city has planted about over 462,000 trees. It leads to reach 46.2% of the program target of 1 million trees since 2016. Hanoi also has called and received the participation of socialization in planting trees of many organizations such as the People's Committee of Dien Bien donated 500 white banana; Vingroup Group donated 400 mango trees; VPBank donated 2,578 camphor trees and 1,181 date palm trees; Mobiphone Telecommunications Corporation 1,000 trees; AEON Group donated 190 cherry trees; Viet Hung Investment and Urban Development Joint Stock Company donates 10,000 oil palm trees. Also, in the first 10 months of 2017, the city has planted more over 327,000 trees in alternative species.

Other big city like Ho Chi Minh city, there has been an about 61% of green trees having over 6m high (type 2 and type 3) (Che Dinh Ly, 2007). There exists variety of species in around 44.399 trees in different streets. According to the Department of Transportation, the state of urban greenery and the management of urban greenery, are as follows ( De an TPHCM,2011) :

- City has 72.334 street's trees. There is a un-distribution in districts. For example, One-District has 20.1% of street's trees whereas Three and Five Districts, Tan Binh, Binh Thanh have amount of 9-10%.

- The unbalance of species also is existed in the old and new districts. The old ones have uniformed species whereas the new ones have not. For example, Six District has about 19.000 trees in 140 streets. However, almost trees in here are derived from local citizens with alternative species.

- Ho Chi Minh City also has 609,18 hectares of park-land. The area of public trees used for the city is about 0.85 m<sup>2</sup> / person. This rate is only 0.23 m<sup>2</sup> / person in the old district whereas the new urban area have 0.28 m<sup>2</sup> / person, and the suburban area has 2,59 m<sup>2</sup> / person.

Ho Chi Minh city has objective of achieving the needed requirements of daily life, entertainment in order to raise the cultural and spiritual life of the citizens. In detail, the average area is 7 m<sup>2</sup> / person, in which the urban area is 2.4 m<sup>2</sup> / person, the new urban area is 7.1 m<sup>2</sup> / person, the residential area is 12 m<sup>2</sup> / person. The plan of forest land and green trees of the city up to 2020 with a vision to 2025 can be seen in Table 2 as:

**Table 2: Plan of green trees development in Ho Chi Minh city.**

*Unit: hectare*

Species	Current state (2009)	Plan of development			Note
		2015	2020	Plan 2025	
<b>Total area of green trees and parks</b>	<b>869,37</b>	<b>3.250</b>	<b>5.790</b>	<b>6.500</b>	
Streets' trees	260,19	350	400	500	
Public green trees	609,18	2.900	5.390	6.000	

(Source: De an TPHCM, 2011)

The standard of trees in some cities in Vietnam compared to alternative countries can be seen in Table 3. It is clear that, the number of trees per person in Vietnam is too low compared to other cities in world's countries.

**Table 3: Some specifications of green trees in big cities in Vietnam compared to other cities in the world.**

Index	Vietnam cities	Standard Requirement		Index	Countries	Standard Requirement (m2/person)
		Fact	Construction Specification			
1	Hanoi	2	>=7	1	Paris (France)	10
2	Ho Chi Minh	3.3	>=7	2	Moskva (Russia)	26
3	Hue	3.5	>=6	3	Washington (USA)	40
4	Da Nang	0.9	>=6	4	London (UK)	26.9

(Source: Le Xuan Thai & Le Van Khoa, 2015)

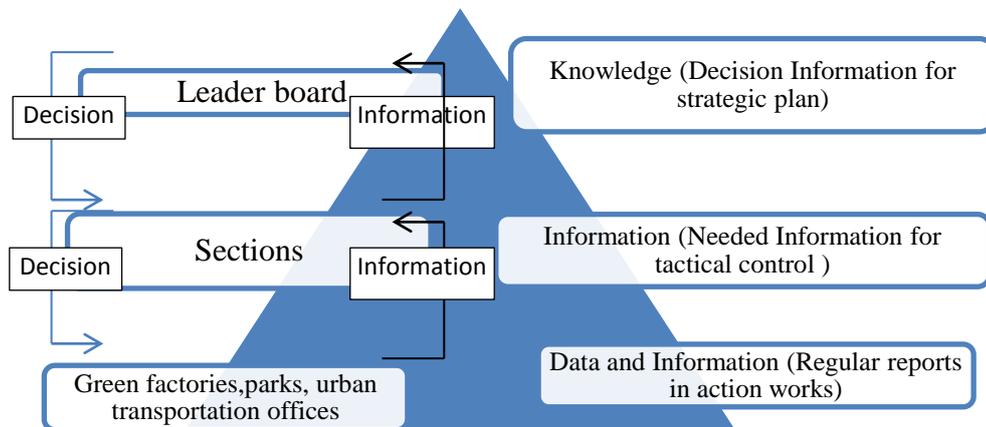
### **3. Management Information System for Green Trees management in the Cities in Vietnam**

#### **3.1. System Requirement and its functions**

In general speaking, any system should have three levels of management as: strategic management; tactical control management and operational management. For example, in a company, leader board will perform in strategic managements, the departments will work as the tactical managements, and the sections in each department will work at the operational level. Alternative levels in company management lead to have alternative quality of information e.g reports in the system. For example, while the leaders need system to produce information which help them to make strategic decision, the departments only need the regular reports to perform the action plan from the leader's board.

Moreover, with the help of industrial revolution 4.0 in the IoT, the system needs to be convenient to the users in different level reports. For example, the reports or the system interface have to be adaptive alternative output devices such as mobile phones, tablets, or special equipment, etc.

The requirement levels for management information system for green trees management can be seen in Figure 1. The highest level of leader board needs knowledge which is provided from lower levels such as departments or sections. Basing on their knowledge, leader board can make strategic decision which directly effect to the departments. The decision making by the department is performed by the sections in the organization.



**Figure 1: Alternative levels of management and needed quality of information**

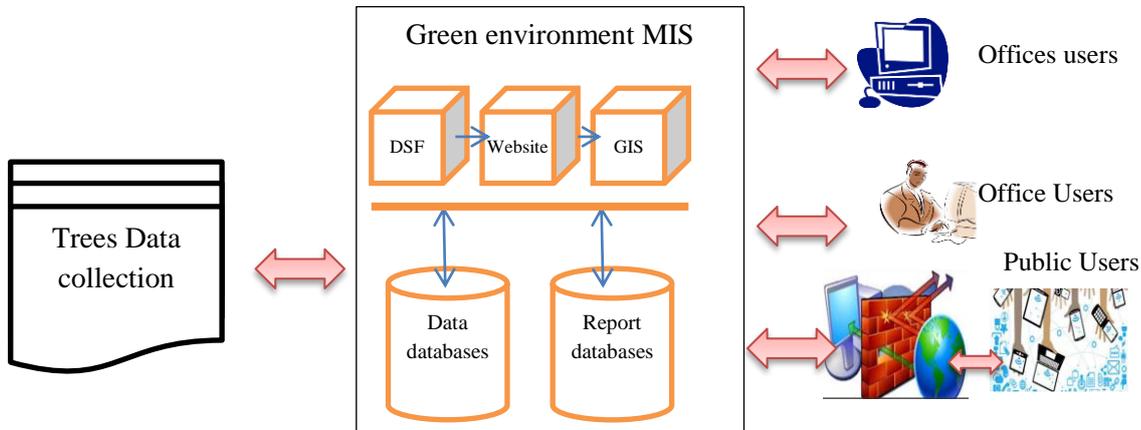
In the MIS for green environment here, the leader boards are from provinces' public transportation department. The sections, which is underlying directly managed of public transportation department, contain alternative offices such as: management public areas section, parks and green trees companies, and districts people committee. The lowest level of management in the MIS system is green factories, park companies, and urban transportation offices.

The requirement MIS functions can be seen as follows:

- Easy to check and update green trees' information by any devices such as from office computers or mobiles or other internet connected devices. This is taken from the advantage of IoT.
- Concentrated databases of data and reports. These are served users depending on the right access to the system.
- Have collections of green trees documents such as species, nature history, etc. in order to serve the environmental education, introduction and broadcast to tourists or specific researchers.
- Easy to share and connect the data to other systems in the cities such as electrical companies, water supply companies, etc.

### 3.2. Green Environment MIS

Base on the requirements in above section, the information flow in the MIS for green environment can be seen in Figure 2.



**Figure 2: Framework of green environment MIS.**

The detail works in green environment MIS can be seen as follows:

Tree data is collected from the streets, park, and public areas to save to the databases in the system. The collection can be done by assigning each tree with one tree-code for the first time. Then, these codes will be used in the system like tree identification for checking, updating, and querying, etc.

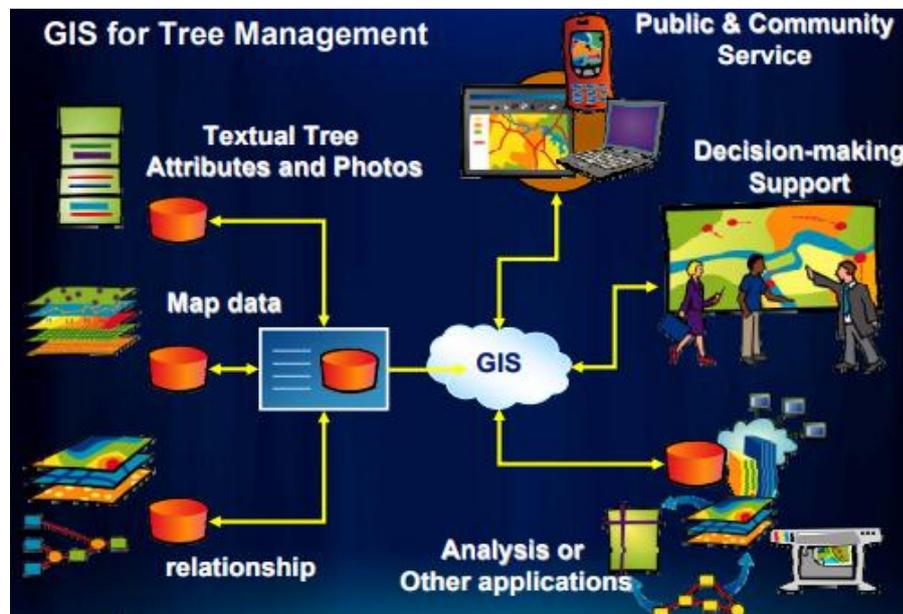
In the system, the core blocks are Decision Support Functions (DSF); Website; and GIS. These control blocks interact to Database (Data and Reports) to produce the needed queries or reports for users in general. The detail can be seen as follows.

- **DSF (Decision Support System Functions):** The DSF in the system is all functions adapted to alternative management levels in section 3.1. For example, the leader board requires highest level of information/reports in the system whereas the normal officers might need queries of tree summarization such as count of tree species, or image of tree distributions in specific area, etc. Therefore, DFS has to include alternative functions to serve different types users with different needs. Obviously, these alternative users will have alternative rights to access to the system.

- **Website:** This block means that the functions in DSF have to be represented in both office application and websites as app- mobile (application in mobile or portable devices). This allows users can easily to access (with their rights) to the system to get needed information from anywhere and at any time. The security solution for system is also needed to ensure system security is performed. For example, the requirement of personal identification will be asked whenever users would like to access to the system. The websites are coded and certified via SSL (secure Socket Layer) certificate. This certificate ensures the coded link between server and web browser. Therefore, the data exchanged between them is safe. This block also can be seen as the applying advantage of IoT in management.

- **GIS:** This is a use of Geographic Information System to manage the tree in the digital map. The arborists need to assess and evaluate adequate sites to growth the new

trees, for example. Adequate tree density can be achieved if a spatial distribution is properly visualized, analyzed and monitored. Other example, with a map of tree, arborists can easily visualize and determine which parts of the city need to growth the trees because of lack tree. Based on the system report, they can propose a new tree management program. Additionally, by accessing to the system by using Website, the users can map and collect data on particular city areas or trees using smartphones or tablets. The model example of GIS management can be seen in Figure 3.



**Figure 3: GIS model for Tree management**

(Source: Esri china, 2011)

### **The steps in green environment MIS**

The objective is building a MIS with high performance to help officials monitor, plan, predict the green trees in the cities. There also includes other functions to serve the other sectors related to the field as well as public users. The detail suggestion steps are as follows.

- **Step 1:** Plan a pilot system is used to manage the green trees in city streets and parks which are needed to manage by officials.
- **Step 2:** Build a pilot system plan for a typical city such as Hanoi, or Danang, etc. This is because these cities have an adapted infrastructure for the system.
- **Step 3:** built a database with tree data derived from districts' sections such as park companies. The data includes figures, pictures, and/or digital map of streets, etc.
- **Step 4:** Build the green environment MIS system
- **Step 5:** Train the staffs and publish information about the system
- **Step 6:** Expand the system to other cities after evaluating the pilot project.

### **4. Discussion and Conclusion**

Green environment management information system (MIS) includes street trees and parks management. It requires to manage complex data (different species, locations, high levels, etc.) and relevant to many other sections in alternative departments in the city. The purpose of building green environment MIS is essential. It does not only to have an efficiency of management in alternative levels but also it can share the information to

many users such as other officials or public people like tourists. The system need to update regularly by the use of technology advantage like IoT. This IoT also can be used for the convenient in both users and administrators.

The green environment MIS contains many system components such as alternative functions to serve internal or external management works with different right access levels. The websites component is to serve to use of web browser via IoT devices such as mobile or computer or tablets. The GIS, which is to visualize the trees, is used to produce visual reports for users. For example, by using GIS component, the trees or tree density are represented as images or visual reports. These make to be convenient and attractive to the users.

To build the green environment MIS is an interdisciplinary approach that requires a combination of urban tree-planting knowledge, practical green management requirements, information technology, database management, geographic information technology (GIS), programming experts, etc. Therefore, there is a co-operation between IT experts, arborists, architects, etc. to plan the system.

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# EFFECTS OF GREEN CONSUMPTION ON PEOPLE IN BINH DUONG PROVINCE

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## **Abstract**

*Protecting the environment while maintaining economic growth has been a big issue in many developing countries including Vietnam. According to Gardner & Stern [1], environmental issues such as global warming, climate change, etc., are by nature closely linked to human behaviors. In addition to the Government and businesses, individual consumption behaviors also have a role to play in environmental protection.*

*Therefore, this research focuses on factors affecting green consumption intentions of people in Binh Duong province, using the Theory of Planned Behavior (TPB) approach. The research is based on results of direct survey with consumers in Binh Duong province.*

**Keywords:** *Environment, Green Consumption, Binh Duong Province, Climate, Behavior*

## **1. Introduction**

As environmental protection is a great concern in many countries, green consumption has become a tendency in the century. The more consumers are interested in environmental protection, the more they pay attention to green purchase. Awareness on environmental protection has remarkably changed behaviors of consumers.

Presently, green consumption is very popular in Vietnam in general and in Binh Duong in particular. Economic growth in Vietnam has resulted in serious decline of natural resources and increase of pollution. Green purchase, green consumption, and raising awareness on environmental protection are considered effective solutions to this problem. Support of the Government and determination of businesses are essential for promotion of green consumption in Vietnam. Green purchase of consumers also plays a key role.

As pollution and food safety become a key concern in Vietnam, many organizations and private businesses have started producing and trading in green food products. However, how to transfer awareness into action on green consumption depends very much on various factors, both subjective and objective factors. In practice, there is still a big gap between green purchase intention and actual behaviors in Binh Duong province.

## **2. Theoretical Bases and Research Models**

### **2.1. Theoretical Bases**

#### **2.1.1. Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB)**

TRA was first developed in 1967 by Fishbein, revised and expanded by Fishbein and Ajzen in the following decades. The theory focuses on personal behavioral intention.

Accordingly, trust, attitude, intention and behavior are closely linked to each other and might be used to predict what a person might do or might not do. Intention is understood as a plan or ability to perform in a specific manner in a certain circumstance. In order to understand behavioral intention, it is important to point out personal efforts in taking an action. TRA looks at personal attitude to behaviors and subjective norms. TPB was derived from TRA by Ajzen and Fishbein. According to TPB, behavioral intention is affected by attitudes, subjective norms, and perceived behavioral control as an additional element to TBP model. Basically, perceived behavioral control means personal awareness on ease or difficulty of a certain behavior in controlling perceived behaviors, which might indirectly affect such behavior. This mainly creates difference between behavioral intention and actual behaviors.

### *2.1.2 Consumer Behavior Theories*

Kotler believed that marketing factors (product, price, location, and promotion) and external factors affect consumer awareness, combining with consumer characteristics in making certain purchase decisions. Marketing experts must understand what is happening inside the customer's awareness affected by external factors in making purchase decisions. Kotler introduced a 5-stage model of consumer goods purchase process including aware of the goods, searching for information, assessing options, making purchase decisions, and performing purchase behavior. It is noticed that consumer intention often occurs before consumer behavior. As a result, factors affecting consumer behavior also affect consumer intent. This forms the backdrop for identifying factors affecting green consumption intention based on researches on green consumption behaviors using the following theories.

A green product is an ecological and environmental-friendly product. A green product might also be a product causing pollution or damages to natural resources but is recycled or reserved (Vazifehdoust and ctg,2013)

Green consumption was first mentioned in 1970 (Peattie, 2010 ) and a number of studies have expanded the term since then. However, green consumption is still a relatively new conception relating to acts of purchasing products which are friendly to the environment, not causing harm or being good for the health of human beings, and acts of using products in a manner that causing least harm to the environment.

Consumer intention: consumer intention reflects trust of consumers in series of consumer behaviors (Ajzen and Fishbein, 1980). According to Ajzen (1985), consumer intention is considered a personal driver in planning and making decisions on performing a certain behavior. Ajzen (2002) assumed behavioral intention as an intermediate condition in performing a behavior. Behavioral intention implies a personal willingness in performing a certain behavior.

Green consumption behavior: there are various definitions of green consumption, mostly based on definitions of consumer behavior and green product. In general, green consumption behaviors consist of a series of behaviors ranging from purchasing green products to using green products in a manner friendly to the environment (for example, energy saving, recycling, reuse, using green packaging and treatment of wastes)

### *2.1.3 Interest in Environmental Issues and Green Consumption Intention*

Interest in environmental issues reflects a personal tendency and interest in environmental issues. This is very useful in forecasting perceived behaviors relating to environmental issues including green purchase (Kim and Choi, 2005). Studies by Mainieri and ctg (1997) and Roberts (1999), Kim and Choi (2005), Samarasinghe (2012) confirmed a positive relation between interest in environmental issues and green intention and behaviors. It is logical to believe that people with green consumption intention are also interested in environmental issues as such interest guides them in making positive actions in transferring behavioral intention into green consumption intention.

### *2.1.4 Awareness on Environmental Protection and Green Consumption Intention*

This is personal assessment on good and bad behaviors. It is explained and assessed by behavioral results. According to Ajzen [10], if a person has a positive attitude to a certain behavior, it is very likely that his/her intention to perform such behavior is higher. Some researches also show positive attitudes towards green consumption behaviors [12,13,14]. Consequently, H1 assumption is proposed. Accordingly, personal attitude towards certain behaviors has positive effects on green consumption behaviors.

Subjective norms: subjective norms mean confidence in other people supporting or not supporting personal behaviors [15]. Results of a research by Vermeir & Verbeke [16], Chen [17 ] confirm positive effects of subjective norms on green consumption intention. As a result, H2 assumption is proposed. Accordingly, subjective norms have positive effects on green consumption behaviors.

Perceived behavioral control: perceived behavioral control consists of two elements: controllability and consumer perception on effectiveness of controllability, i.e. ease and difficulty in finding and purchasing products [18]. Many researches also find out that personal confidence in behavioral control has positive impacts on consumer intention. [19]. Consequently, H3 assumption is proposed. Accordingly, controllability has positive effects on green consumption behaviors.

### *2.1.5 Awareness on Green Products and Green Consumption Intention*

Awareness on green products is personal knowledge on factors relating to green products including patterns, sizes, etc. Consumers are also able to distinguish between green products and traditional non-green products based on their environmental-friendly features and places of production and delivery. Lack of knowledge on green products and their features is one of key issues in green consumption behaviors. According to a research of Hessami and Yousefi (2013), awareness on green products has positive effects to green consumption intention.

### *2.1.6 Social Impacts on Green Consumption Intention*

Social impacts play a key role in increasing awareness on green products of consumers in general and those in Binh Duong province in particular where most of the population are immigrants with low awareness and income, resulting in changes in green

consumption intention and behaviors. According to Sinnappan and Rahman (2011), Hessami and Yousefi(2013), there is a positive relation between social impacts and green consumption behaviors, which can be found in Binh Duong province.

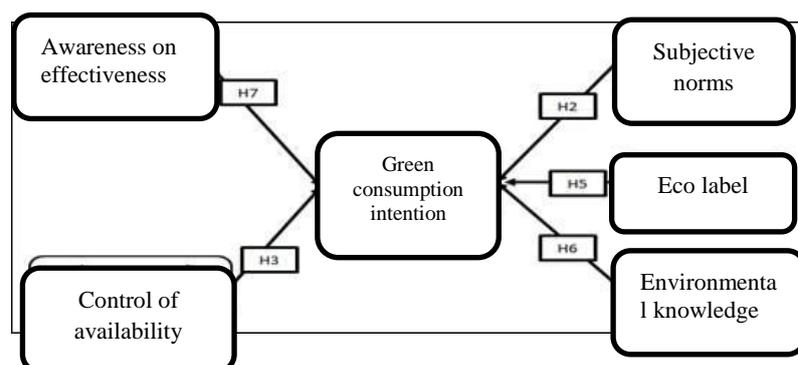
In order to understand more about factors affecting green consumption intention, this research looks at two additional factors including:

Eco-labels or environmental labels are descriptions on productions to provide information on environmental impacts during production and use of such products [21]. A research by Rashid [11] shows eco-label programs are applied in many Asian countries such as China, Japan, Malaysia.... Eco labels affect consumers with information on impacts of their purchase behaviors to the environment and how eco labels has positive impacts on green consumption behaviors and intention of people in Binh Duong province. According to a research by Loureiro & Lotade [22], consumers in developed countries are willing to pay higher prices for products with eco labels. Thøgersen points out importance of visibility, understandability and reliance of eco labels in affecting green consumption behaviors [23]. Eco labels are considered useful tools for consumers to minimize environmental impacts and pollution [24]. Some researches show that awareness on eco labels does not automatically guide consumers in making decisions on green consumption and most consumers find it difficult to link environmental issues with products [31]. In Vietnam, the Government approved a program on eco label issuance on 5 March 2009 for businesses registered for ISO 1400.

Environmental knowledge: the knowledge includes information, definitions and links between the environment and its eco system [26]. The knowledge also reflects awareness on environmental issues of individuals, links between aspects of the environment, and awareness on environmental protection for future generations [18]

## 2.2 Research Methodologies

The research has two phases: preliminary quantitative survey with 180 consumers in Binh Duong province in June 2017 and the official research in August 2017. Preliminary measuring scale consists of 35 variables as follows: 4 variables on personal attitude impacts on behaviors of Do valle et al[30], 4 variables on subjective norms of Vernier & verbeke[16], 5 variables on control of availability of Sparks & Shepherd [31], 4 variables on perception of consumers on behavioral effectiveness of Roberts [32], 5 variables on environmental knowledge of Kwek [33]. Rizwan [34].



### 3. Results and Discussions

#### 3.1 Research Results

##### Verifying the measuring scale

After removing variables such as CCQ04 (subjective norms), KS11 (control of availability) and NST24 (eco labels), analysis of reliance of the measuring scale shows that all requirements are met with Cronbach's alpha > 0.6 and other values ranging from 0.630 to 0.836. Analysis of principal component and Varimax rotation factors of 30 independent and dependent variables leads to results as follows: KMO coefficient (0.735) meets requirements while data is proved appropriate with Sig. = 0.000 using Barlett approach.

Five variables on eco labels of Kwek [33], Wang [35], Kong [36]. Based on preliminary research results, two statements in the measuring scale are adjusted and two new variables on eco labels are added to align with four researches. The official survey questionnaire includes 33 variables using 5-point Likert measuring scale and two definitions on green consumption behavior and eco label. Questionnaires are directly distributed to consumers aged 20 and older in Binh Duong province. 210 out of total 220 distributed questionnaires are responded, 17 of these are invalid due to lack of information.

Five independent variables and one dependent variable are extracted with total variance of 59.538. Specifically, for control of availability measure - reducing from 4 variables to 3 variables, for environmental knowledge measure - reducing from 5 variables to 4 variables, for eco label measure - preserving 6 variables, for subjective norm measure - preserving 3 variables, for new factors combining personal attitude with consumer behavior and perception on behavioral effectiveness - reducing from 8 variables to 6 variables, as these two factors relate to awareness on effectiveness of green consumption on environmental protection, they are considered awareness on effectiveness factors. With respect to the dependent factor, i.e. green consumption intention - reducing from 4 variables to 2 variables. Therefore, assumption H7 is proposed. Accordingly, awareness on effectiveness has positive effects on green consumption intention.

Verifying research models and assumptions:

Regression analysis results in adjusted R<sup>2</sup> of 0.194. This means variance of the dependent variable of green consumption intention explained by independent variables is 19.4%.

**Table1: Regression analysis results - green consumption intention in Binh Duong province**

		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Standard error	Beta		
1	Constant	0.512	0.494		1.036	0.302
	<b>Eco label</b>	<b>0.217</b>	<b>0.089</b>	<b>0.181</b>	<b>2.447</b>	<b>0.015</b>
	<b>Awareness on effectiveness</b>	<b>0.236</b>	<b>0.096</b>	<b>0.174</b>	<b>2.448</b>	<b>0.015</b>
	Subjective norms	0.106	0.069	0.109	1.529	0.128
	<b>Environmental knowledge</b>	<b>0.283</b>	<b>0.083</b>	<b>0.231</b>	<b>3.405</b>	<b>0.001</b>
	Control of availability	0.053	0.077	0.051	0.689	0.492

While results are low, they are still meaningful in explanation of relation between research model and green consumption intention as the purpose of the research is using TPB approach with additional eco label variables. As F value of Sig. = 0.000, the research model is in line with observed data. Statistics from Table 1 show that 3 out of 5 independent factors have positive effects on green consumption intention. Consequently, H5, H<sub>6</sub>, H<sub>7</sub> assumptions are supported by this research.

### **3.2. Discussions**

Research results show that green consumption intention is affected by three factors: environmental knowledge ( $\beta = 0,283$ ), awareness on effectiveness ( $\beta$

$= 0,236$ ) and eco label ( $\beta = 0,217$ ). Environmental knowledge and awareness on effectiveness having positive effects on green consumption intention are similar to results of the research conducted by Giang & Tran [6]. Subjective norms and control of availability have no effect on green consumption intention. The research also finds out that eco label has positive effects green consumption intention.

Results of the research confirm that environmental knowledge forms the backdrop for green consumption intention. Awareness on effectiveness combines attitude and perception. Consumers' environmental knowledge on positive effects of green consumption on the environment will affect their green consumption intention. Consumers in Binh Duong province have similar community activities like other Asian countries relating to green consumption [38, 39]. As eco label links environmental knowledge with awareness on effectiveness of consumers, it has certain effects on green consumption intention. This is new compared to results of the research by Giang & Tran [6] but similar to those of Kwek [33]. Subjective norms and control of availability have no effect on green consumption intention due to the nature of surveyed groups mostly young people aged under 35 (60.6%) with post graduate qualifications (74.6%). They have deep knowledge, independent thoughts not affected by other people as well as are able to update information promptly and easily. This is confirmed in the research of Hoang&Nguyen [3].

### **4. Conclusions and Recommendations**

According to the research, environmental knowledge, awareness on effectiveness, and eco label are the top three factors affecting green consumption intention of people in Binh Duong province respectively. Based on comparative research of average value of three factors including environmental knowledge (3.6), awareness on effectiveness (4.09) and eco label (3.07), the author makes recommendations. As value of eco label is lower than that of the remaining two factors and eco label combines environmental knowledge and awareness on effectiveness, the research focuses on making recommendations on programs to promote eco label in Binh Duong province, aiming to increase awareness on green consumption intention and help consumers to understand importance of production, use and performance of green consumption behaviors in order to protect the environment and public health. These programs should aims at affecting the community as a whole but not each individual [23]. The Government must improve trust of the people on eco label

through publication of information and making process for eco label registration transparent, establishment of mechanisms for monitoring business activities after registration; making eco label more visible and understandable to consumers through eco label design competition to help consumers understand environmental-friendly characteristic of the products and promote eco label to consumers, businesses especially those providing green consumption products. Eco labels must be more visible and understandable to consumers, focusing on communication, advertising, organizing trade fairs for green consumption, aiming to distinguish green consumption products with normal electricity products through production, use and recall of products, highlighting the information on eco labels.

Besides positive contributions, the research also has certain limitations. Firstly, relating to sample representation, as samples are taken for the purpose of convenience, most of surveyed people have post graduate degrees aged under 35 years old. Secondly, it is not enough that the research only focuses on 6 factors affecting consumption intention. As a result, adjusted R2 is only 19.4%. Therefore, in order to improve the research, new factors affecting the model should be added such as activities of the Government [33], culture, business information [40], etc.

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# CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL PROTECTION

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## **ABSTRACT:**

*India has a history of having a compassionate attitude towards environment. But with the passage of time the ethical values towards society have degraded as a result of which judiciary intervened so as to protect the environment. A concept known as corporate social responsibility emerged in the light of right to pollution free environment and the constitutional duty to protect and improve the environment. In order to realize the constitutional objective of protecting environment the concept of Corporate Social Responsibility was recognized in the legislative enactments. The paper introduces the concept of Corporate Social Responsibility and the Constitutional commitment towards environment protection. Judicial decisions bring into light the conception of Corporate Environment Liability by streamlining the defaulting institutions. India is a welfare state. But with the passage of time Indian government has adopted liberalization, privatization and globalization. Public sector has slowly shifted to private one. Therefore, the new concept of Corporate Social Responsibility [CSR] means a corporate sector shall perform such welfare function towards society which is necessary for maintaining the social interest of the society. In the words of 'Carroll' and 'Buchholtz', the corporate social responsibility encompasses the economic, legal, ethical, and philanthropic expectations placed on the organizations by the society at a given point of time. According to Brown H.R., social responsibility is defined as, "the obligation of a businessman to pursue those policies, to make those decisions or to follow those lines of action which are desirable in terms of objectives and values of the society. Some scholars have defined CSR as a social commitment of a businessman or a social obligation or moral or ethical responsibility or a corporate social philanthropy. In the words of Mahatma Gandhi, business entrepreneurs are trustees and not the owners of the social wealth and they have to spend a part of it for social causes. To describe the principle of trusteeship he quoted, enjoy the wealth, and take the minimum which you need, leave the rest to the welfare of community." It cannot be considered as charity.*

**Key words:** ethical values, judiciary, realize, protecting, welfare, philanthropic, policies, wealth, community.

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## **1. Introduction:**

A robust and thriving development sector is central to India's quest for equitable, inclusive and sustainable growth. India's development sector has evolved substantially over the last few decades and is now witnessing unprecedented interest and investments across the value chain. With the passage of the Companies Act, 2013 the mandate for corporate social responsibility (CSR) has been formally introduced to the dashboard of the Boards of Indian companies. The industry has responded positively to the reform measure undertaken by the government with a wide interest across the public and private sector, Indian and multinational companies. Building a society which provides equal access to opportunities negates disparities and, is a collective responsibility.

The emerging concept of corporate social responsibility goes beyond charity and requires the company to act ethically in the company's business affairs. The triple bottom line approach to corporate social responsibility emphasizes the company's commitment to operating in economically, socially and environmentally sustainable manner. CSR is based on the idea that successful profitable corporations should take the responsibility for social issues and manage their business in such a way that maximizes profit and stockholder wealth while also contributing to the resolution of the social problems. The concept involves notions of human welfare and emphasizes a concern with the social dimensions of the business activity that have direct connection with the quality of life in the society. The word responsibility implies that business organizations were believed to have some kind of obligation towards the society in which they functioned to deal with the social problems and contribute more than just economic goods and services. It is a concept whereby the companies integrate social and environmental concern in their business operations and in their interactions with the stakeholders on a voluntary basis. The main function of an enterprise is to create value through producing goods and services that society demands, thereby generating profit for its owners and shareholders as well as the welfare of the society, particularly through the ongoing process of job creation. Social responsibility implies the acceptance of a moral imperative to recognize the duties and obligations arising from a company's relationship with customers, suppliers, employers, shareholders and society at large beyond consideration of profit. It refers to business decision making linked to the ethical values, compliance with the legal requirements and respect for people and communities and environment. Constitutional Commitment vis-à-vis CSR Philanthropy and CSR is not a novel concept for Indian companies, however a few organizations are likely to struggle. The role of civil society in fuelling this change is bound to be extremely important. With the new corporate resources in their tool bag much will depend on their ability to innovate and adapt. India has inherited a culture of tolerance, no, violence, equity and compassion for animate objects. In olden times, they were the part of daily life and synthesized with religion. Therefore, the fundamental ethics of behavior with each other was to live in harmony with each other because it was well realized that each one of them is dependent on one another and destruction and damage to the other is the

Distraction of self and is complementary to each other.

The idea of environment had never been in the minds of the founding fathers of the Indian constitution. Consequently, the expression environment was initially not found in the constitution. The abovementioned philosophy of peaceful co existence with nature got mentioned, in one way or the other, in the Indian constitution.

## **2. Concept of corporate social responsibility:**

The expansion of right to life under Article 21 of the Indian constitution inspired the judiciary to open the new vistas in this regard. However, it took a long time for the apex court to pronounce explicitly that the right to life under article 21 of the Indian constitution contains a right to healthy environment, although the high Courts had gone ahead much earlier. Imposition of damages on the defaulting industry for causing disturbance to the water is justified on the touchstone of right to life, and duty to protect and improve environment. The right to healthy environment is the product of judicial interpretations adding new dimensions to the right to life in Articles 21 of the constitution of India. On the other hand, 42nd amendment to the constitution has imposed the duty on the state and the citizens to protect and improve environment, by adding article 48 A to the directive principle of state policy and 51 A (g) as a fundamental duty. These insertions have acted as the foundations for building up environmental jurisprudence in the country. Corporate sustainability essentially refers to the role that companies can play in meeting the agenda of sustainable development and entails a balanced approach to economic progress, social progress and environmental stewardship. The Companies Act, 2013 has introduced the idea of CSR to the forefront and through its disclose-or-explain mandate, is promoting greater transparency and disclosure. Schedule VII of the Act, which lists out the CSR activities, suggests communities to be the focal point. On the other hand, by discussing a company's relationship to its stakeholders and integrating CSR into its core operations, the draft rules suggest that CSR needs to go beyond communities and beyond the concept of philanthropy. It will be interesting to observe the ways in which this will translate into action at the ground level, and how the understanding of CSR is set to undergo a change. The judicial role of eighties played an important role in reaching new horizons of jurisprudence in India, more so in the area of environmental protection. The verdict in *Municipal Council, Ratlam v Vardhichand* is a land mark. The residents of Municipality were suffering for a long time from the pungent smell emanating from open drains. The apex court identified the responsibilities of the local bodies towards the protection of the environment, and developed the law of public nuisance in the Cr. P.C. as a potent instrument for the enforcement of their duties. Justice Krishna Iyer had made a

Thorough examination of two issues:

a. The municipal Legislation which casts the duty on the municipalities to clean the roads and clean drains.

b. The provision in the Indian Penal Code, which prescribes the punishment to a person contravening with

The direction of the magistrate.

In *Vijay Singh Punia v State of Rajasthan* imposing 15 percent of the turnover of the dyeing and printing industries as damages for causing water pollution Rajasthan High court observed:

The emission of untreated waste water by the industrial units is depriving the citizens the access to unpolluted ground water which is essential for the existence. Not only the ground water has been affected by the way industrial units have been operating, but their working has also affected the quality of vegetables and crops which are grown in that area... For enforcing the rights under Article 21 of the Constitution and compelling the persons to discharge their fundamental duties under Article 51 A (g) of the Constitution, the courts exercising extraordinary jurisdiction can impose damages on the polluter for the restoration of the ecological balance and also for the victims who have suffered the intrusion upon the environment and ecology of the former.

### **3. Environment protection measures:**

Irrespective of whether a company is polluting or none polluting, protection of environment should be the concern of every socially responsible organization. Each company must take steps to make sustainable use of resources, establish a healthy and safe working environment, maintain ecological balance, take proactive steps to minimize waste generation and preserve environment.

### **4. Corporate business ethics:**

Ethics is a set of principles or standard of human conduct that govern the behavior of individuals or organizations. Using these ethical standards, a person or group of persons or organizations regulate their behavior to distinguish what is right and what is wrong as perceived by others. It is not a natural science but a creation of human mind. All human societies have ethical systems that define what is meant by right and wrong, fairness, justice, truthfulness and similar ideas dealing with morality and rightness. Individuals who live in those societies learn more from childhood what is considered as ethical and unethical. Business is increasingly challenged to consider ethics when it makes decisions. They need to find out the balance between economics and ethics. Society wants the business to produce the needed goods and services but it also expects the business to conduct its economic operations in an ethical way.

#### **Model Environmental Policy**

The company's commitment towards is absolute. The company believes in sustainable development by ensuring that the activities are in harmony with environment. The company in the process of various steps of manufacturing is committed to achieving excellence in environmental performance and towards this

Objective shall:

Adopt appropriate operational practices and suitable technologies to monitor, control and minimize the

Impact of its activities on environment.

Continually improve its performance by setting the objectives and targets to prevent or reduce pollution

And waste and minimize the use of resources.

Comply with all relevant legislative and regulatory environmental requirements.

Develop and maintain a highly motivated workforce trained for effective management of environment and

Emergency situation.

Provide relevant information on environmental policy to the concerned authorities and interested parties and ensure that the policy is understood, implemented and explained by the employees at all levels within

The organization.

Evaluate and modify environmental management practices keeping in view regulatory requirements, community concerns and technological advancements.

Major areas defining Corporate Social Responsibility

Corporate social responsibility has much broader implication for a nation as a whole. The growing popularity of corporate social responsibility is premised on the belief that the modern corporations have the financial resources, human capital, and a global influence to advance the progressive causes. Some of the areas which

Define CSR are as under.

a. Community development: this includes socially oriented activities which are primarily of the benefit to the general public like corporate philanthropy, housing construction, financial health services activities among

Employee's food programmers and community planning and development.

b. Human resources: this area includes social performance directed towards the well being of the employees such as improvement of employment practices, training programmed working conditions and provision for

Job enrichment schemes.

c. Product of service contribution: this includes consumerism, product quality and product safety.

d. Physical resources and environmental contribution: These activities are directed towards alleviating or preventing environmental pollution and conservation of scarce natural resources and the disposal of solid

Waste is included in this area.

Corporate social responsibility reduces the dependency on the Government for the social change. It is also about training young minds and also helping the future generations organize themselves for the greater good.

## **5. Corporate environmental liability:**

The notions that the individuals, by extension also the corporations, bear the solemn responsibility towards the environment is not new. The Stockholm Conference referred in Principle 1 to man's 'solemn responsibility' to protect and improve environment. Subsequent formulations have preferred to emphasize the individual character of this obligation. Thus the world charter for the nature talks of the duty of 'each person' to act in accordance with the terms. The draft principles on Human Rights and environment states that that 'All persons have the duty to protect and preserve the environment.' None of these instruments creates legally binding obligations for individuals as such. But they do provide a justification for using criminal

Responsibility as a means of enforcing international environmental law.

It is only when the accident of magnitude and impact of Bhopal gas leak disaster took place, those environmentalists, social workers; general public and government institutions started thinking about the new ways and means of preventing similar tragedies in the future. This process leads to the legislative and administrative activism. The perception of the global concern about the environment is of recent origin. As Caldwell observed, "at the beginning of the twentieth century, neither the environment as an integrative ecological concept nor the biosphere as a planetary life support system was an object of public international concern."

The Bhopal gas leak accident, one of the worst industrial disasters in the human history, occurred approximately two years before the Supreme Court evolved the rule of absolute liability. It is not possible for the court to make quick decisions relating to compensation to the victims of the accidents like those of Bhopal gas leak. The interests affected are various; the intensity of damage and suffering varies from one victim to another. Assessment of the compensation for the loss, mental agony, suffering and death has been

An arduous task.

In *M. C. Mehta v Union of India*, the Supreme Court formulated the doctrine of absolute liability for the harm caused by the hazardous and inherently dangerous industry by interpreting the scope of the power under article 32 to issue directions and orders, 'whichever may be appropriate' in 'appropriate proceedings'. According to the court this power could be utilized for forging new remedies, and fashioning new strategies. In *Deepak Nitrate Limited v State of Gujarat* the Supreme Court held that the liability should not be fixed without any nexus to the extent of fault. The compensation should have a relationship with the harm suffered rather than the capacity of the industry.

*Indian Council for Enviro- legal Action v Union of India* tells the tragic story of village Rajasthan. Its loving environment became highly polluted by the sludge that was left out even after the rouge industries licensed to produce 'H' acid. The Supreme Court directed the central Government to determine and recover the cost of remedial measures from the respondents. Section 3 of the Environment Protection Act expressly empowers

the central government (or to delegate, as the case may be) to 'take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of environment.

Scientific uncertainty may sometimes be a mirage. Polluter's often try to hide themselves behind the need of scientific certainty. Precautionary principle does not book this hide and seek the policy of the polluters and the potential polluters. The 'polluter pays' principle and the precautionary principle were accepted as a part of legal system in the Sludge Case and the Vellore Citizen's Forums Case

In *T. Dhamodar Rao v Special Officer, Municipal Corporation of Hyderabad*, the Andhra Pradesh High court referred also to Article 51 A (g) and 48 A and prevented the conversion of open space to a residential complex. The court noted that the protection of environment is the duty of the citizens as well as the obligation of the state. In *Mohd Hazi Rafeeq v State of Uttaranchal*, the Uttaranchal High Court referred to Article 48 A and 51 A (g) in order to stress the duty of the state to preserve and protect forest even at the

Cost of business interest of the petitioner.

In *Rural Litigation Entitlement Kendra v State of UP* Supreme Court of India accepted the letter written to the court as a writ petition. This case was pronounced by the court as the "first case of its kind in the country involving the issues relating to environment and ecological balance..." the letter was written by RLEK, Dehradun a voluntary organization. The epistolary jurisdiction has been invoked by the courts in other cases also as the matters involved were of vital importance. In *Municipal Council, Ratlam v Vardichand Shri Vardichand* filed a case for removing unhygienic conditions amounting to public nuisance, as Article 47 makes it paramount principle of governance that steps are taken for the improvement of the public health as amongst its primary responsibility. The court observed: "The officer in charge and even the elected representatives will have to face the penalty of law if what the constitution and follow up legislation direct

Them to do are defied or denied wrongfully"

## **6. Conclusion:**

The need to understand and act upon the concept of corporate social responsibility has gained momentum in the recent past not just in the legal precept but also in the judicial activism. The argument for the individual rights and by extension those of corporations and position of NGO's stands apart as perhaps the strongest of the environmental claims. The pragmatic point is that the addressing the position of individual and other legally significant entities directly, international law facilitates wider participation in cusses of national governance, and more effective approach to the enforcement and implementation of law, primarily through the use of national legal systems. Besides the constitutional and legislative duty it becomes an ethical duty not only of individuals but of the corporate houses to protect and improve the quality environment. Right to pollution free environment could be achieved by realizing common but differentiated responsibility at every strata of the society. It has been made an obligatory duty of the occupier to disclose the information

include health hazards and the measures to overcome such hazards in manufacturing, transportation, storage, and other processes to the workers, chief inspectors, local authority and the general public in the vicinity. Such information shall include characteristics of wastes and the manner of their disposal. It is also the duty of the occupier to draw up an “on site emergency plan” and detailed “disaster controlled measures” and to make

Them known to the works and the nearby dwellers.

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2. S. C Shastri “Corporate Social Responsibility vis-a -vis Protection of Environment In India: A Legal perspective,” Journal of Faculty of Law Mody University of Science and Technology 2014, p 1

3. Section 135 (1). Every company having net worth of rupees five hundred crore or more, or turnover of rupees one thousand crore or more or a net profit of rupees five crore or more during any financial year shall constitute a Corporate Social Responsibility Committee of the Board consisting of three or more directors, out of which at least one director shall be an independent director.

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6. Rogene. A. Buchholz, Business Environment and Public Policy, 1992 p. 21

7. Jatana Renu and Crowther David, “Corporate Social Responsibility- Theory and Practice with Case Studies”, 2007 p. 223

8. Id at 294

9. Corporate Social Responsibility in India has traditionally been seen as a philanthropic activity, and in keeping with the Indian tradition, it was an activity that was performed but not deliberated. As a result, there is limited documentation on specific activities related to this concept.

10. S.C. Shastri, Environmental Law, 2012, p.8

11. Article 48 A: the State shall endeavour to protect and improve the environment and safeguard forests and wild life of the country. and Article 51 A –(g): it shall be the duty of every citizen of India, (g) ... to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for the living creatures.

12. Protection of life and personal liberty:- no person shall be deprived of his life and personal liberty except according to procedure established by law.

# SOCIAL SCREENING AND CONSERVATION NEEDS ASSESSMENT OF BA BE NATIONAL PARK

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## **Abstract**

*This study analyzes the pressures of community livelihoods around Ba Be National Park for conservation. The study also assesses the conservation needs of the community - a new approach to conservation. Although there are many support from the government and international organizations for the community, people's life is still very difficult, the poverty rate is high. Without measures to support livelihoods and benefit sharing from conservation, biodiversity in this area continues to decline.*

**Keywords:** Ba Be National Park (Ba Be NP), Conservation needs assessment (CNA).

## **1. Introduction**

Ba Be National Park is in the Western of Bac Kan province, about 70 km from the centre of Bac Kan province and 250 km from Hanoi. Ba Be Lake is a precious natural heritage with ancient Karst geological structures, a complex system of rivers and streams, limestone mountains and water bodies. In this national park, there is tropical evergreen forest located on the limestone mountains, representing the typical ecosystem in the Northeast of Vietnam.

In 1990, in a survey for building technical proposal of Ba Be national park, they found 354 species of flora and 265 species of fauna. Now, 1281 species of flora and 553 species of fauna have been found. Together with Ba Be Lake, many other sightseeing places and with a cool climate in every season, Ba Be national park has natural potential for developing eco and adventure tourism.

There are 613 households with 3,559 people living inside the national park. The core area of the national park is 10, 048 ha, the buffer zone is 28,200 ha, including 5 communes with 15,420 people. Ba Be Lake is the center with 500ha. Every year, there are about 20,000 domestic and foreign tourists.

The local community lives both inside and outside of the national park. Their lives depend on natural resources mostly. The major products are fire wood and non timber forest products. There are also some people who hunt wild animals and log timber illegally for additional income. Tourism also provides jobs for many local people such as boat driving, guesthouse and guide service.

Although the National park's authority has been preserving biodiversity and natural landscape values, they are reduced by human and calamity. Preserving and promoting

these values requires a fund and a comprehensive and scientific managing plan between many relevant organizations, from the Central to local authorities and to the local people, especially the support from projects. Lack of these has caused the limited capacity of the National park authority.

This study aimed to assess the impacts of livelihood activities on conservation in Ba Be National Park. Reinforce the relationships between MB of Ba Be NP with local communities in views of management, conservation and sustainable natural resources use in NP. Identify potential impacts from proposed activities of Vietnam Conservation Fund to local communities and determine mitigation measures

## **2. Method**

The methods applied to social screening as well as conservation needs assessment are as follows:

1. Hold workshops referring to conservation needs assessment in communes living inside and near by Ba Be NP to consult and discuss about identified threats as well as threats occurring in implementing CNA.

2. Conservation needs assessment and establishment of models with participations of local people, organizations, agents, women unions of communes and villages at sites to discuss about the threats to ensure the unanimousness.

## **3. Results**

### ***3.1 Economic activities***

#### *Agriculture:*

The major cultivations are wet rice plantation, slash and burn agriculture, the medium income each year (calculated for all ethnic minorities groups) of local people is about 394 kgs of rice/person, the period of food shortage of poor households is from 2 to 4 months in a year. Cash needed for other expenditures of each households such as, furniture, clothes, school fees... earned from sale of agriculture products and products exploited from forest. When people can not depend on forest, all the money will be made from agriculture production (rice, farm products and by-products) and other incomes brought by the State (if any). The whole area of core zone only has 448 ha agriculture land, average area is 0.73ha/household and 0.12 ha/person. Besides, areas of agriculture are mainly one-crop fields, lands for planting farm products in deposited banks of rivers, streams and estuaries falling into the lake. Most of the area just can be cultivated for 1one crop as well as many places always deposited with sand so the productivity will be very low. Although the livelihood of local people entirely depends on agriculture in the context of land shortage and land quality as well as irrigation system indicates its weakness that cause a lot of difficulties to local people. To solve this problem, it is impossible to extend the area of agriculture land. It should be a plan to move the local

people to another area, settle the residential areas together with ways of creating jobs, generating income for households.

Husbandry in the area is still not developed. Major animals are: Cow, buffalo, goat, pig and chicken. Traditional grazing, local breeds with low productivity and veterinary support is not taken into consideration seriously. Because people do not invest in husbandry so the cattles grow slowly and mostly serve for the needs of households. The grazing area is getting smaller , it is suggested that traditional husbandry should be changed due to the lack of food in dry season, lack of knowledge of modern techniques in husbandry, lack of markets, grazing is not suitable for current condition, cages are not well enough to feed animals, poor households are in short of capitals for investment in breedings, techniques, foods and do not know how to process the food for animals, fine foods, poor veterinary network, constant epidemic diseases, lack of inoculation's awareness.

This area comprises a system of rivers, streams which create a lot of opportunities for exploitation, aquaculture but the methods applied to this area are not suitable. Uncontrolled and unplanned fishing leads to the depletion of water resources, extinction of some rare, precious species and environmental pollution. Fish is the source of food and money for households in the village which is being used up due to the unsustainable exploitation. Although the NP and relative shareholders have made a lot of efforts, fishing by mine and electricity is still carried out. Therefore, local people hope that the authorities and organizations will pay attention to this issue to stop offenders from exploiting as soon as possible. This action would offer sustainable income to local people and protect ecological environment. Furthermore, local people also want to sign contracts of lake protection to prevent outsiders from fishing illegally. (other communes/villages)

In this area, agriculture accounts for the largest proportion of household's income. Land is not enough for agriculture and loss of crops due to flood in low lands which are adjacent to rivers and streams leading to the burden of encroachment in NP. Local people often encroach on cultivated land which is near the living area and accessible agriculture land. In mountainous areas, the land is insufficient for wet rice cultivation so local people often take lands from special use forests for swidden.

#### *Forestry:*

People are living inside strictly protected areas and outside NP have been causing stress for conservation in NP. To dealing with this matter, there are common governments' policies, NP has introduces a lot of solutions, economic-social development programmes such as, forest protection contracts for local communities in Nam Mau, Khang Ninh, Cao Tri, Quang Khe and Nam Cuong Commune. Every year, NP signs forest protection contracts of more than 5000 hectares with over 400 households in protection, restoration-oriented protection, afforestation in ecological restoration zones. Thanks to these activities, households would have more incomes and their awareness of natural resources and environment would be raised, the stress for the core zone of NP could be reduced.

**Table 1: Land use of communes in nature reserve and buffer zones.**

Unit: ha

Commune Kinds of land	Nam Mẫu	Khang Ninh	Cao Trĩ	Cao Thượng	Quảng Khê	Hoàng Trĩ	Đông Phúc	Nam Cường	Xuân Lạc
Total natural area	6.478,94	4.434,41	2.424,98	3.906,65	5.491,42	3.526,90	5.898,97	3.235,00	8.421,00
Agriculture land	176,22	855,26	250,15	155,14	330,49	241,45	517,66	315,85	508,64
Forestry land	5.657,71	2.754,94	985,22	807,46	4.566,82	2.451,26	5.105,80	1.368,88	4.498,42
Specialised land	474,45	24,44	30,61	30,28	41,54	47,14	83,31	32,08	350,52
Residential land	8,45	28,14	12,38	25,77	22,88	15,12	20,34	20,26	6,14
Bush and bare land	25,66	728,08	1.094,76	2.841,05	470,93	725,76	87,85	1.497,93	2.988,03

*Source: Ba Be NP*

In NP, there is no activity of forestry production. Therefore, exploitation is mainly harvesting forest products unplannedly. In the past, major forest products exploited from forest are timbers, animals for food and house-building, sometimes these products can be considered as goods. Since Ba Be NP was established, forest rangers have co-operated with local communities to take part in forest protection groups so logging and hunting of wild animals are supposed not to occur. Recently, local people mainly harvest NTFPs for their daily life.

*Products exploited from forest:*

Harvest firewood: Households living in core zone use about 100-150 kgs of dry firewood per month because they are poor and do not have enough money for using other resources such as gas and coal. Local people go to forests to take branches and bodies of dry wood, sometimes they even cut and take green trees. Firewood used for cooking mash accounts for over 60% harvested firewood. Therefore, it is necessary to find ways to save firewood, train on advanced techniques of pig husbandry without mash,..Thanks to the appearance of electricity, a great amount of firewood has been saved due to the usage of electrical equipments for cooking and lighting. ..

Exploitation of timber: This seems not to appear anymore. Even some local people illegally exploit timber for using at home and sale. The major kinds of trees that are often exploited are *Burretiodendron hsienmu*, *Toona sinensis*, *Dracontomelon duperreanum*, *Zenia insignis* Chun..This is an illegal and unsustainable exploitation which cause effect on forest resources conservation. Exploitation occurs in most of villages, however, this would reduce because of strict management of forest rangers and propaganda.

Exploitation of bamboo shoot: Bamboo shoot, mushrooms, wood-ears harvested by local people to use and sake, not only people living inside the NR but also outsiders harvest it.

Medical herbs: People living in the area and neighbouring zones often collect many kinds of medical herbs for curing diseases and sale. One significant factor which affect to medical herbs is the demand for collection of precious trees such as *Anoecilus roxburghii* hayata, *Fibraurea recisa* Pierre...of wholesalers collecting goods to sell in other places or China.

Hunting animals in forest: All faunas, for instance, animals, snakes, geckos, birds.. are objects for hunting. Local people hunt by many ways: Hand-made gun, trap. Although hunting gun has been confiscated and banned not to use but a few ethnic minorities (Dao, H'mong) illegally go to forest for hunting animals.

*Tourism and commercial services:*

Thanks to the supports from some projects conducted in NP, MB has co-operated with local authorities to set up models of community-based ecotourism that work effectively. Typically, services of homestay in Tay's stilt-houses, co-operatives of transportations by boat in villages which are adjacent to the lake, especially in Pac Ngoi village, Nam Mau Commune. As a result of this, living standard of local people has been improved and their awareness of environment and ecology has been raised substantially. The models should be reinforced and duplicated. However, households who participate in these models mainly the ones who live near the lake and the usage of motor boat with diesel engine has the potentiality of pollution because of lubricant as well as the noise can make wild animals feel embarrassed.

**3.2 Activities affect to NP.**

The life of ethnic minorities in NP mostly depends on natural resources that are available in forests, some of them live on slash and burn agricultura. Natural resources of NP provide local people with foods, materials, medical herbs.. Although, the NP was established, illegal slashing and burning agriculture, exploitation of forest products, hunting and trapping wild animals, fishing, harvesting NTFPs have not yet resolved. Activities which cause effects on forest products and landscapes of NP are as follows:

- Hunting for wild animals, fishing by electricity and mine causing the decrease of some kinds of species, some other species are in danger of extinction and the life of animals living in the forest seems to be chaotic.

- Building houses of residential people has encroached and extended the area of NP which creates the separation of landscapes and biodiversity reduction.

- Illegal exploiting of timber, firewood affects defectively forest products breaking forest layers, destroying forests and some of floras are in danger of extinction. Due to these activities, habitats of animals are lost and the balance of biology is damaged.

- Grazing cattles in the NP affecting the growth and development of forest trees and disturbs the life of wife animals.

- Plant trees for food is the encroachment of short-term afforestation and habit of using fire are direct threats to the forest resources and biodiversity that cause the detachment of landscapes, erosion of land.

- Exploitation of NTFPs such as, medical herbs, bamboo shoots, honey, ornamental trees, calamus bousigonii... leads to the scarcity or danger of extinction of some species.

The indirect reasons of these actions are the increasing number of population, essential demands of local people and markets, poverty, manners and customs and limited awareness of communities on nature conservation.

To protect forest resources effectively, it is necessary to have laws together with socio-economic development programmes in buffer zones to improve living standards as well as the awareness of local communities on forest protection and development, biodiversity conservation.

### ***3.3 Some notices of the relationship between communities and biodiversity.***

At present, there are many people living in Ba Be National Park, mostly ethnic minorities with low intellectual standard and their life depends on natural resources. The ethnic minorities still reserve their own cultural characters which creates the diversity in the region attracting more and more visitors.

Up to now, Ba Be MB, local authorizations and local communities has made a lot of efforts to increase biodiversity, protect and restore the forest system on limestone mountains with the areas of rare, valuable species of faunas and floras. In addition to this, the investment in building the Nature reserve also help to create jobs, improve the living standard of local people through economic development programmes in buffer zones, forest protection, restoration and afforestation programmes, tourism services as well as the sustainable and reasonable usage of natural resources.

Thanks to the process of development and submission of scientific records of the world heritage to UNESCO Committee, Ba Be NP's values has been recognized by foreign authorizations and agencies that attracts more tourists to come.

Communities in villages adjacent to Ba Be NP often have large populations with limited awareness on environment, poor application of advanced techniques to production and high demand for natural resources of forest and lake (lack of information, poor awareness on forest protection and environment). These reasons has created many threats and challenges to the conservation in NP. The most visible activities namely exploitation of firewood, NTFPs, hunting for animals, using mine and electricity for fishing. Water of the lake is polluted by the garbages of visitors, wastes from motor boats (petroleum, lubricant), trashes of local communities and other exotic substances in fishing. In addition to this is the depositing process of the lake due to the erosion caused by agriculture production in the estuary of the main river flowing into the lake.

### ***3.4 Potentiality of impacts from local communities to the changes in management activities.***

Proposed activities of Ba Be NP including working with at least 04 prioritized villages in the NP:

- Raising awareness, knowledge of communities about NP, the meaning of conservation and the role of NP in potentiality of maintaining and improving the living standard of local communities.

- Attracting local communities to participate in forest protection and management, biodiversity monitoring through co-management, regular exchanging information and feedback between MB and local communities.

- Reinforcing the ability of self-management of activities exploiting and using water surface for community groups, determine the boundary of legal land for use, consultations with communities on the demand and ways of using natural resources as the next step of developing BSM getting approach to the sustainable natural resources use which Vietnam Conservation Fund phase I has conducted activities as agreed on using natural resources of water surface.

There is no result on the implementation that cause the restriction on using traditional natural resources in prioritized villages, therefore, there would be no mitigation or compensation measures for activities in the plan. They would be developed as parts of proposal submitting to Vietnam Conservation Fund in the future.

Patrolling and other improvements in law enforcement will be guided directly to infringers and people who are exploiting natural resources for commercial purpose. There would be no mitigation and compensation measure for these people.

**Table 2: Summarize on the potential social impacts of the investment**

Activities	Potential impact of the investment	Level of impact	Measures to mitigate the impacts
Strengthening the capacity of MB for biodiversity monitoring and law enforcement.	Improved capacity for biodiversity management together with law enforcement on forest and biodiversity management and development will create restrictions on illegal exploitations for livelihoods of communities.	Limit on the lowest level of negative impact caused by community to the NR.	Dissemination, propaganda, monitoring the law enforcement of law materials, attracting local communities in managing, using NT and biodiversity monitoring; encouraging communities to use NR sustainably.
Raising awareness on biodiversity conservation for local communities.	Communities have knowledge about regulations on biodiversity conservation, forest protection to implement.	High	Contents of propaganda suit with the knowledge and conventions, customs of local communities, propagandizing regularly, forms of propaganda are suitable for ages and genders.
Biodiversity monitoring	The result will not tell the truth if the conductors are not trained to gather information during patrolling and monitoring.	Average	Integrating this activity into forest patrol and protection.
Developing BSM	Impacts on the livelihoods of some households depending on the forest resources.	Average	Propagandizing, reinforcing the capacity of self-control for communities as well as their participation in co-management; suggesting for sustainable use of NR.

*Source: Author*

## **4. Conclusion and recommendations**

### ***4.1. Conclusion***

Ba Be NP has a diversified ecosystem, forests on limestone that is typical for the North-Eastern of Viet Nam and the world, inland wet area is of international importance with diversified systems of faunas and floras including a lot of endemic rare, valuable species as well as some endangered species. The values of landscapes, biodiversity, cultural characters of NP are precious assets that should be preserved and developed.

There are a lot of people living in core zones and buffer zones of Ba Be NP and their life mostly depends on the natural resources of NP. Therefore, it is said if we want to conserve Ba Be NP, we should make more investments in developing economy for communities, particularly paying attention to the benefits of people living in SUF as well as attracting them to the management of NP. Only when the people get benefits from SUF and settle their life could the threats of hunting, illegal exploitation reduce..

It is necessary to have prioritized solutions to protect important species through conducting surveys, developing plans and monitoring. Besides, it is said that propaganda and education should be promoted, training on strengthening the capacity of local communities and professional staffs.

### ***4.2. Recommendations***

Due to the limit time, the collection of information concentrates on the consultations with different organizations, agencies, communes' people's committees and local communities on matters addressed in CNA; major threats, matters relating to local communities and potential solutions.

In views of values of biodiversity, culture, difficulties and challenges as stipulated in the report, MB is really in need of the support from organizations, projects to help Ba Be NP fulfill their duty in forest management and protection.

It is suggested that all local authorizations, Bac Kan Provincial People's Committee, particularly Viet Nam Conservation Fund support Ba Be National Park in conserving biodiversity, co-operating with communities, developing economy and using natural resources. Combination of funds as planned in the programme using for the conservation of NP, especially paying attention to the communities relating to major threats to help them have a stable life as well as avoid illegal activities through patrolling with the participation of communities and sustainable use of natural resources. Ba Be NP hopes to get support from Vietnam Conservation Fund to implement activities of raising management capacity of MB in biodiversity and human impact monitoring, law enforcement, propaganda, training on raising awareness on forest and environment protection, reinforcing the participation of communities in protection, development and sustainable use of natural resources, biodiversity monitoring.

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# ECONOMIC ANALYSIS OF REMOVING PBDE AND PFOS UNDER STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS IN VIETNAM

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## **Abstract**

*On the way to international integration, Vietnam has ratified many international conventions in the field of environment including Stockholm Convention on Persistent Organic Pollutants (POPs). POPs are persistent in the environment and have negative impacts on the environment and human health. POPs listed in the Stockholm Convention needs to be minimized, replaced or removed. This paper analyses the social cost and benefit of removing PBDE and PFOS, which are among the newly listed POPs since 2013. The health and economic benefit of PBDE and PFOS removal in Vietnam is estimated at USD 58 million per year, which is greater than the cost estimated at USD 4 million. Thus removing PBDE and PFOS is beneficial from the social perspective.*

**Keywords:** *economic analysis, persistent organic pollutants, Stockholm Convention*

## **1. Introduction**

On the way to international integration, Vietnam has ratified many international conventions in the field of environment. Vietnam ratified the Stockholm Convention on Persistent Organic Pollutants (POPs) on 22 July 2002, becoming the 14th Party of the Convention. The Stockholm Convention on POPs (hereinafter referred to as Stockholm Convention) is a global treaty to protect human health and the environment from persistent organic pollutant. The Stockholm Convention regulates to reduce or eliminate producing, using and/or releasing of 12 POPs including Aldrin, Chlordane, Dieldrin, Endrin, Heptachlor, Mirex, Toxaphene Polychlorinated Biphenyls (PCB); DDT [1,1,1-trichloro-2,2-bis (4-chlorophenyl) ethane]; Polychlorinated dibenzop-dioxins (PCDD), Furans (Polychlorinated dibenzofurans) and Hexachlorobenzene (HCB). From 2009 to 2013, Conference of the Parties (COPs) of the Stockholm Convention has approved to add 11 new POPs to A, B, C annexes, including:

- Annex A: POP pesticides (Lindane, Alpha-HCH, Beta-HCH, Chlordecone, Endosulfan); Industrial POPs: (Hexabromobiphenyl, Pentachlorobenzene, TetraBDE, PentaBDE, Hepta and OctaBDE, Hexabromocyclododecane<sup>1</sup>);

- Annex B: Perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride (PFOS)

- Annex C: Pentachlorobenzene.

The Prime Minister of Vietnam signed Decision No.184/2006/QĐ-TTg dated 10th August 2006 approving the Vietnam's National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (NIP) and submitted to the Conference of the Parties of the Stockholm Convention in 2007. Vietnam has implemented many activities listed in NIP 2006, including implementation of obligations related to the development of policies and regulations on POPs management, capacity building in POPs management, Best Available Techniques (BAT)/Best Environmental Practices (BEP) for reduction of unintentional POPs, safe treatment of POPs stockpiles etc. Adding new POPs in Stockholm Convention requires Vietnam to review and update the NIP.

Vietnam has regulations forbidding 13 POP chemicals including Alpha hexachlorocyclohexane, Beta hexachlorocyclohexane, Lindane, Endosulfan which are new POPs. For PFOS which is a new listed POP, at present, Vietnam has no particular regulation on the management of its production and use. This is a challenge for the government and the community to control and limit risks of POPs and to implement the commitment towards Stockholm Convention. New policies are being developed and it is an urgent need for the government to have more information the economic aspects of new regulation.

This paper focused on economic analysis of removing two of the new POPs namely Poly-BDE (PBDE) and Perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride (PFOS) in Vietnam. These two compounds are popularly presented in daily life as they exist in electronic products, garments and vehicles.

## **2. PBDE and PFOS in Vietnam**

POPs (i) are persistent the environment, (ii) become widely distributed geographically, (iii) accumulate in the fatty tissue of humans and wildlife, and (iv) have negative impacts on human health and/or on the environment. Exposure to POPs can lead to adverse effects on human health, biodiversity and the environment. PBDE and PFOS are among the new POPs that Vietnam should eliminate according to the Stockholm Convention since 2013.

### **2.1. PBDE and its impacts**

In the 20<sup>th</sup> century, manufacturers started to replace the traditional materials such as wood, metal, cloth, etc. by oil-based products such as plastics and Polyurethane foam (PU foam). The new materials are more combustible. Therefore, it was necessary to control the flammability for these products. PBDE is a substance mixture that functions as fire

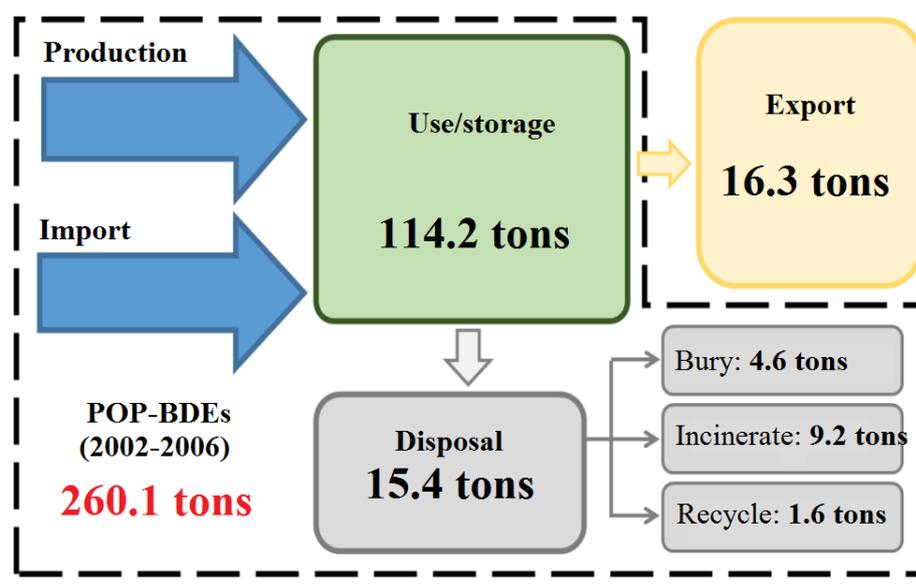
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<sup>1</sup> In May 2015 three POPs (polychlorinated naphthalene, hexachlorobutadiene, pentachlorophenol) were added

retardant and is used broadly in electronic equipment, car seat, carpet, etc. There are three types of commercial PBDE including commercial Pentabromodiphenyl ether (c-PentaBDE), commercial Octabromodiphenyl ether (c-OctaBDE) and commercial Decabromodiphenyl ether (c-DecaBDE). According to user's manuals, c-Octa BDE is mainly used in acrylonitrile-butadiene-styrene (ABS) polymer. ABS is mainly used in cover of electrical and electronic equipment, specially CRT monitor, household and office appliances such as photocopier, printer. 90% of c-PentaPDB is to treat PU foam.

The first PBDE inventory in Vietnam was carried out in 2006. It appeared that the residual PBDE in the environment was rather high. The inventory of PBDE was based on the widely used electrical and electronic equipment and waste such as television, computer, laptop, mobile phone and fixed telephone, printer, photocopier, radio, audio frame, refrigerator, air conditioner, washing machine, etc. PBDE mainly concentrated in the stage of use/storage and production. From 2002 to 2006, PBDE in the production stage tended to decrease and PBDE in the export stage tended to increase along with time. However, the quantity of PBDE in all stages of the life cycle tends to increase. During the period of 2002 to 2006, the total amount of POP-PBDE in electronic equipment in Vietnam was 276.4 tons including 260.1 tons from domestic activities and 16.3 tons from exported equipment; the average amount of POP-PBDEs from domestic activities in Vietnam in the inventory stage was 52 tons per year and the annual disposed volume was 3 tons (Tu Binh Minh et al, 2015).

**Figure 1: POP-PBDEs cycle in electronic equipment in Vietnam from 2002 to 2006**



*Source: Tu Binh Minh et al. (2015)*

In 2015, MONRE did a survey on PBDE content in dust, plastic, sediment and fish samples in some locations of Trieu Khuc village in Hanoi and Bui Dau village in Hung Yen province. The results showed a high content of PBDEs in waste storage and recycling areas. The content of PBDE in sediment samples from waste-contained rivers was similar. Meanwhile, the contents of PBDEs in dust, deposit and fish samples differed across the

locations. For example, PBDEs in dust sample at Trieu Khuc - a plastic recycling village was 1.050 - 33.840 ng/g; and the content at Bui Dau - an electronic solid waste recycling village was 1.560 - 19.590 ng/g. Therefore, the risk of PBDE emission and surplus in recycling areas is rather high that should be controlled tightly (MONRE, 2015).

In Ho Chi Minh City, the total residual PBDE was found in sediment at a significant level. The concentration of total PBDEs in the sediment taken from areas inside and outside the city and Saigon - Dong Nai estuarine was respectively 54.5 - 119.0 ng/g, < 0.02 - 10.63 ng/g and < 0.02 - 0.065 ng/g. PBDE had accumulated in the sediment in Ho Chi Minh City for a long time (MONRE, 2015).

There has not been an assessment on negative impacts of PBDE in Vietnam. The following impacts are from international studies/researches:

**Human health:** PBDE is found in human body cells all over the world including blood, fat and breast milk. When the mother is exposed to PBDE, her breast milk will contain PBDE. A research in Sweden shows that the PBDE content in the breast milk doubles after each 5 years from 1972 to 1997. Until the 1990s, after removing PBDE, the PBDE content decreases from 3.7 ng/g of milk to 2.62 ng/g of milk (Washington State Department of Health, 2006). Therefore, the infants are seriously affected by PBDE pollution. PBDE is considered as a factor reducing IQ in the children, thus pregnant women should be protected from PBDE exposure (Chen et al, 2014).

PBDE is discovered in food chain, indoor dust and air. Food chain is the main channel through which people exposed to PBDE. Food containing PBDE includes pork, beef, poultry, fishes and dairy products. Some recent studies show that indoor dust/air contributes the biggest part in PBDE exposure, especially for small children and the infants who are exclusively formula-fed (Washington State Department of Health, 2006).

Research works in many countries show that workers of companies in manufacturing and recycling PBDE-contained products can be exposed to PBDE at the workplace. Electronic waste recycling areas have the highest PBDE content in the air, especially the places for disassembling wastes like computer, printer, TV, microwave and plastic parts which are taken separately. In Sweden, workers disassembling electronic items have high content of PBDE in blood (Sjodin et al, 1999). Their blood contains Penta-, Octa- and Deca-BDE. Hospital cleaner, computer staff, and firefighter are also exposed to PBDE due to contact with furniture, electronic equipments and fire fighting foam during the working process (Shaw et al. 2012). Women participating in waste recycling and children living in the recycling areas have high risk of PBDE exposure.

**Environment:** There are many studies showing that PBDE accumulates in the natural environment, causing environment degradation and affecting human health. PBDE is found in air sample in city, rural area and remote area of Great Lakes (USA), in areas far away from industrial parks in Sweden or coastal area in Korea (UNEP, 2007b). Even the air in Indian Ocean also contains PBDE (2.5 pg/m<sup>3</sup>). For water environment, Ontario Lake in Canada has the total PBDE content of 6 pg/m<sup>3</sup> (UNEP, 2007b). Sediment samples in this

lake contain hexa and hepta-BDE with the content from 0.5 to 4 µg/kg. Soil samples in the Europe have the total PBDE content from 0.61 to 2.5 µg/kg (UNEP, 2007b). C-OctaBDE is found in many aquatic species in Great Britain and Japan. HeptaBDE is contained in eggs of falcon in Sweden. Carps and perches in Detroit River in USA are infected from PBDE (UNEP, 2007b).

## ***2.2. PFOS and its impacts***

PFOS is present in imported products such as fire fighting foam, insecticide and other products such as carpet, textile and garment and toy. Although Vietnam does not produce PFOS, materials containing PFOS for production are imported. Thus some products containing PFOS are considered as Vietnamese goods. For example, according to Greenpeace organization (2013), Mamnut gloves made in Vietnam and exported to Europe have PFOS concentration of 9.5 µg/m<sup>2</sup>, 1 µg/m<sup>2</sup> higher than the regulated level. Jackets made in Vietnam under the brand of Jack Wolfskin and Schöffel have PFOA content at 6.3 µg/m<sup>2</sup> and 6.2 µg/m<sup>2</sup>, respectively. PFOA is a substance that is not yet included in the list of POPs but currently evaluated in the POP Reviewing Committee. Using PFOS in firefighting foam and surface treatment (e.g. synthetic carpets, textiles furniture), furnishings etc. in Vietnam is common. The inventory of PFOS is preliminarily assessed in Vietnam with samples of surface water and fish collected from recycling areas, reproduction areas, canals, waste water reservoirs, etc. in Hanoi, Bac Ninh and Da Nang. The result shows a relatively high concentration of PFOS at the locations near production and recycling areas (MONRE, 2015).

PFOS can negatively affect the human health and the environment.

**Human health:** Young men and women who expose to PFOS and related substances are likely to have problems with their reproductive health (UNEP, 2007a). A research in Denmark indicates that PFOS (and PFOA) content reduces sperm quality in men (UNEP, 2007a). When a pregnant woman is exposed to PFOS, this substance may be transmitted to her fetus and further to her breast milk after she gives birth (UNEP, 2007a), which exerts negative influence on the development of the infants.

PFOS is present in paper package/hard cover, interior furniture, medical equipment, insecticide, electrical and electronic equipments, fire fighting foam, paint, cleansing agent, rubber and plastic, etc. (UNEP, 2007a). Therefore, their users may have their health affected badly. Workers on metal plating lines, assembly lines or semiconductor production lines face the similar risks because PFOS is used in the industrial process of these fields.

**Environment:** PFOS and related substances accumulate and cause pollution to underground water and surface water, which impacts salt water, fresh water and terrestrial ecosystems through food chain. PFOS in fire fighting foam is important since it is largely released to the environment when fire fighting foam is used.

## **3. Methodology**

Due to the lack of data in Vietnam, the costs of using, producing and removing PBDE and PFOS in this analysis are estimated by the transfer method. Reference to case

studies in some countries where POP inventory and solutions for moving and/or replacing PBDE and PFOS are available is used. The environmental benefits are identified while the health benefits and economic benefits are estimated. Because the time of removing PBDE and PFOS has not been decided, the actual annual costs and the benefits were calculated with no discount factors.

#### **4. Economic analysis of removing some new POPs**

##### ***4.1. Estimating the cost***

###### ***4.1.1. Polybrominated Diphenyl Ethers (PBDE)***

To minimize and remove PBDE, the government intends to:

a) Control the import and export of chemicals in PBDE group in Vietnam by focusing on electrical and electronic products, fire-resistant materials, vehicles and household appliances.

b) Assess the production and the inventory of chemicals in PBDE group; periodically report as requested under Stockholm Convention.

c) Safely manage and minimize the use of chemicals in PBDE group in production and business, apply BAT/BEP in safely classifying, collecting, transporting, recycling and treating materials and wastes containing PBDE; control the safe recycle and treatment of chemicals in PBDE group and assure not to recover PBDE for reuse; assess and review exemption registration and purposeful use of products, materials containing PBDE in Vietnam.

d) Monitor the PBDE content in the environment, products, materials, wastes and polluted areas in order to assess the associated risks and implement methods for environmental health management.

###### ***4.1.2. Social costs for minimizing and removing PBDE***

***Cost for establishing technical standards:*** Technical standards are required to control PBDE. The actual cost for establishing one standard in Vietnam is 3 million VND. There are two groups of technical standards, one for imported products and the other for waste and waste treatment. The number of standards needed is not decided yet but it can be seen that the total cost for establishing the standards is rather small for the whole society.

***Cost for measuring, monitoring PBDEs:*** Two tasks which are (a) to assess the production and the inventory of chemicals in PBDE group; periodically report as required under Stockholm Convention and (d) monitor PBDE in the environment, products, materials, waste and polluted areas in order to assess risks and implement methods for environmental health management require periodical sampling, testing and reporting. The cost for testing PBDE in water is VND 3 million for one sample. This cost includes costs of materials, wages and administration cost. It is supposed to have 2 reports on PBDE in a year with 500 samples needed for each report. Then the annual cost for measurement and monitoring of PBDE is VND 3,000 million.

###### ***Cost for treatment of wastes containing PBDE***

The emission source of PBDE is waste from disposed products. Hence the important solution to minimize PBDE is sludge treatment. There are different methods for

treatment from filling, using in production of soil for agriculture and forestation to incineration in hazardous waste incinerator. The incineration plan is applied if a separate incinerator is available for this purpose; this can only be applied when the volume of waste to be incinerated is large enough or will be incinerated with other hazardous wastes.

Wastes containing PBDE have not been treated separately in Vietnam. Some of them are hazardous wastes which are treated in some capable stations. So here the cost of hazardous wastes treatment is used. In Holcim Vietnam, the cost of treatment of wastes containing PCB is from VND 40 to 300 million per tone. This paper assumes the lowest price, which is VND 40 million per tone. The main types of plastic in electronic waste are PS, ABS, PP, PVC and PC, all of which can be recycled except PVC. The estimated volume of PVC in electronic wastes in 2014 is 2,100 tones. Therefore, the annual cost for treatment will be VND 84 billion or USD 3,733,333.33.

#### ***4.2. Perfluorooctane sulfonic acid, its salt and Perfluorooctane sulfonyl fluoride (PFOS)***

To minimize and remove PFOS, it is expected to take the following measures:

a) Assessing and strictly controlling the import and export of PFOS products, materials and equipments in Vietnam; assessing the actual use, storage, disposal and taking comprehensive inventory of PFOS.

b) Monitoring PFOS in products, materials, waste and environmental components to assess and control environmental and health risks.

c) Further controlling PFOS use and disposal; assessing and considering registration of exemption and intentional use of PFOS products and materials in Vietnam.

d) Promoting PFOS replacement in production and business activities; limiting and removing PFOS in consumer goods and insecticide and fungicide.

#### **Social costs for minimizing and removing PBDE**

***Cost for establishing technical standards:*** Actual data shows that cost for PFOS collection and analysis is VND 1.5 million per sample. As such, supposed that report on PFOS with 500 samples all over the country should be conducted twice a year, then the annual survey and monitoring cost is VND 1,500 million..

#### ***Cost for replacing PFOS in fire fighting foam***

Since fire fighting foam is the most important source that releases PFOS, replacing PFOS in fire fighting foam is the most priority. Costs for PFOS removal/replacement in fire fighting foam of countries are calculated differently. According to the EU statistics in 2006, cost for destruction of PFOS fire fighting foam is about 1100 USD/tone and total quantity across EU was 122 tones (Sweden, 2006). In the USA, total annual cost covering replacing PFOS fire fighting foam and PFOS fire fighting foam is 24.31 million USD (in 2011) (Wray et al, 2011). In the UK, removal/replacement of PFOS fire fighting foam was supposed to take 5 years. Then, net present value of the cost for removal/replacement of PFOS fire fighting foam was estimated at USD 2,770,655 (UK Ministry of Environment, Food and Agriculture, 2004).

With limited background information, it is difficult to specify relevant costs in Vietnam. In this context, the low estimate is used, which is the cost in EU, i.e. about 134,000 USD (1,100 USD multiplied by 122 tones). This is the cost of destruction of foam.

### 4.3. Estimating the benefits

The benefits are estimated with the assumption that not only PBDE and PFOS but other POPs are also removed/ replaced.

#### 4.3.1. Health benefit

Upon removing/replacing POPs, the society would reduce risk of death and diseases. The community health would be improved. This is regarded as one of direct social benefits from POPs removal/replacement.

For specific locations or sectors, it is possible to quantify health benefits in monetary term from POP removal/replacement. Health benefit is estimated based on disability-adjusted life-years (DALY) and value of one life year.

According to the World Health Organization (WHO), DALY disease burden is a measure of the statistical years of life lost due to mortality and the years of life lived with diseases or accidents. A DALY is understood as one year of statistical life lost (cumulative risk over all individuals in the population to develop a certain mortality or morbidity case). Total DALY over total population, also known as disease burden, reflects the gap between present health of the population and ideal health of the whole population when everyone can live without diseases or injuries. DALY is calculated as the sum of years of life lost (YLL) due to death, diseases and accidents and years lived with disability (YLD). Table 1 shows the DALY in Vietnam in 2012 estimated by WHO.

**Table 1: Standardized DALY in Vietnam in 2012 (for 100,000 people)**

	All diseases	Infectious diseases	Noninfectious diseases	Injuries
<b>DALY</b>	29,226	6,375	19,555	3,296

Source: <http://www.who.int/>

From DALY of the whole population, it is possible to calculate DALY of the location where residents are exposed to POPs by the following formula:

$$\text{DALY in the POP-polluted location} = \frac{\text{National DALY} \times \text{Population of POP-polluted location}}{100,000 \text{ persons}}$$

Value of a life year (VOLY), or value in monetary terms of one DALY, reflects economic cost of a year of life lost due to death, ill health or disability. Value of one DALY in each country reflects its economic development, income and price. In this paper, value of one DALY for Vietnam is estimated by benefit transfer method. Using contingent valuation, Desaignes et al. (2011) estimated the monetary value of a life year in 9 European countries at EUR 40,000 or about USD 44,000. This value is directly transferred to Vietnam. Assuming that the annual DALY in Vietnam is 1,000, then the value of health benefit is USD 44 million.

#### *4.3.2. Economic benefit*

POPs, for example, PBDE released in the environment have negative impacts on agricultural production and aquaculture. Agricultural and aquatic products are important exports of Vietnam. If POPs residue is found in these products, they will be returned to Vietnam, causing big economic damage not at the time of export but also in the future when the market is lost. In fact, Vietnam has faced some cases in which foreign countries detected pesticide residues in agricultural products or found infected aquatic products. Every year, Vietnam loses over 14 million USD when aquatic products are returned from Europe, the USA, Japan and Australia (Saigon Times Newspaper, 2013)

Consumers have not known much about the presence of POPs in daily life. If this information is spread among the community, consumption will reduce sharply. For example, non-stick pan, a popular product often contains PFOA or PFOS. If consumers know about it, the market of non-stick pans will be lost, causing big damages to the importers and the manufacturers.

#### *4.3.3. Environment benefit*

Apart from health improvement, the removal/replacement of POPs also helps to improve environmental quality. Value of environmental quality is improved through total economic value brought about by environmental quality to the society.

- Direct benefit: Increasing landscape value, surrounding environmental quality to meet economic, entertainment and aesthetic demands of the community
- Indirect benefit: Improving ecological service and biodiversity
- Nonuse benefit: Increasing existence value, option value and bequest value of environmental quality

These benefits can be measured by the society's willingness to pay to conserve the environment. The environment benefit is not estimated in this paper, but previous researches show that the total economic value of the environment is often very high. Besides, removing PBDE from electronic wastes helps to reduce pollution caused by other pollutants. Electronic wastes often contain heavy metals like lead, nickel, chrome and mercury which can be harmful for human health. Freon is present in control boards in refrigerators and air conditioners, which can affect the ozone layer. When the electronic waste containing PBDE is treated, these dangers are also eliminated.

#### *4.3.4. Summary of cost and benefit of removing PBDE and PFOS*

Table 2 shows the summary of cost and benefit of removing PBDE and PFOS. It can be seen from the table that although social benefit gained from removing PBDE and PFOS has not been estimated sufficiently, it is a large number. Such benefit is always larger than the cost of policy development and enforcement plus the cost of environmental treatment. The treatment cost will decrease overtime as the POPs inventory decreases. Therefore, from socio-economic aspect, removing PBDE and PFOS as well as other new POPs are necessary to protect public health, ensure environmental quality, and increase social welfare

**Table 2: Cost vs. benefit of removing PBDE and PFOS**

Item	Value
Cost	
- Technical standard	133 USD/standard <sup>1</sup>
- Environmental monitoring	200,000 USD/year <sup>2</sup>
- Waste treatment	3,867,333 USD/year
Benefit	
- Health	44,000,000 USD/year
- Economy	> 14,000,000 USD/year
- Environment	_ <sup>3</sup>

<sup>1</sup>: This cost occurs only at the year of issuing the standard

<sup>2</sup>: Total estimate cost of PBDE and PFOS monitoring is 4,500,000,000 VND/year

<sup>3</sup>: Benefit is not valued in monetary term.

(Reference exchange rate: 1 USD = 22,500 VND)

*Source: Authors' calculation*

## 5. Conclusion

Being a party in Stockholm Convention, Vietnam has the responsibility to eliminate, remove and replace the listed POPs. Nation Implementation Plan was developed in 2006 but now it is necessary to update it since new POPs are being added in the Convention. PBDE and PFOS are among the new POPs listed in 2013, which requires Vietnam to carry out the inventory, to control the using and producing and to remove them from the products. This paper analyzed the social cost and benefit of removing PBDE and PFOS. Due to the lack of data, benefit transfer method was employed and the cost and benefit were compared directly. The cost of removing PBDE includes cost of establishing technical standards, cost of sampling, testing and reporting and cost of treatment. The cost of removing PFOS includes cost of establishing of technical standards, cost of sampling, testing and reporting and cost of destructing the firefighting foam. The health and economic benefit of PBDE and PFOS removal is estimated at USD 58 million per year, which is greater than the cost estimated at about USD 4 million. Thus removing PBDE and PFOS is beneficial from the social perspective.

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# **WATER PRICES, AND DETERMINATION OF CUSTOMER SATISFACTION: A COMPARISON OF PRIVATE AND REST SECTORS OF MANAGING IN THE RURAL WATER SUPPLY SCHEMES**

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## **Abstract**

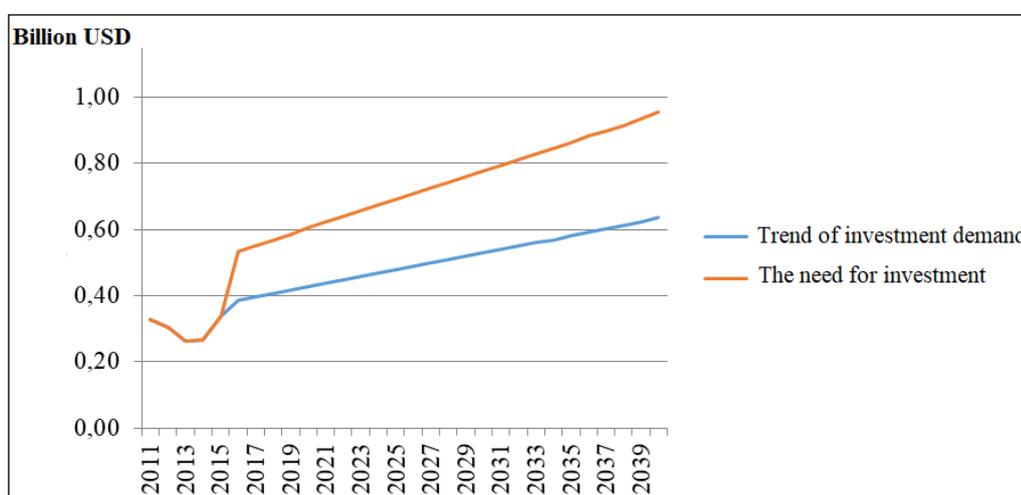
*The paper compares water prices and affecting factors customer satisfaction on clean-water supply of private sector with the rest of management (State-owned companies, Province Center for rural Water Supply and Environmental Sanitation and People's committee). Using an explanatory regression model with the survey data from 67 water supply schemes and 900 households of different management organizations in two regions of northern and southern Vietnam. The paper shows that private sector has a higher water price compared to the rest sector of the managed area of 962 VND/m<sup>3</sup>. Customers of private sector have a higher satisfaction level than the rest of the managed area of 4% compared to the average satisfaction level. The factors affecting customer satisfaction are: (1) waiting time for water deliveries, (2) pressure of water, (3) color of water, (4) smell of water, (5) location of household users and (6) project duration.*

**Keywords:** water supply, private sector, water prices, customer satisfaction

## **1. Introduction**

The concentrated water supply system is the essential infrastructure to provide clean water in order to improve the health of people in rural areas and socio-economic development in the recent past. In the period from 2000 to present, the Government has implemented 3 national target programs on rural clean water and environmental sanitation. According to the statistics of the Ministry of Finance, by March 2017, there were 15,878 constructions totaling about 33,980 billion VND (1.498 billion USD, 0.50 billion USD per year). Of these, 14,991 works have a national database of assets managed and stored by units with a total value of 19,654 billion VND: (i) Commune People's Committee manages 12,614 submit (accounting for 84.60%); (ii) Public non-business units managed 1,860 (accounting for 12.47%); (iii) enterprises managed 437 works (accounted for 2.93%).

Comparing Vietnam's water supply, rural water supply for 2011-2015 accounts for 25.61% of total investment in water infrastructure (totaling 5.85 billion \$). Rate of investment capital for rural water supply compared to investment capital for water supply infrastructure in Vietnam in the period 2011-2015 (accounting for 25.61% of total investment in water supply infrastructure). The demand for investment in rural water supply for the period 2018-2025 is 5.59 billion USD (0.63 billion USD per year on average) and 12.22 billion USD in the next 2025-2040 period an average of 0.82 billion USD per year. Therefore, the demand for investment in rural water supply in the coming time is 1.44 times higher than the period 2011-2015. According to the assessment of the Center for Rural Water Supply and Environmental Sanitation (RWSA), the constructions will be medium and large scale compared to the previous period in order to ensure the sustainability of the constructions. From 2016 onwards, the investment capital for the rural water supply system will be integrated into the new rural program.



**Fig 1: Investment capital for rural water supply in Vietnam until 2040**

*Nguồn: Global Infrastructure Outlook and author's calculations*

In addition, according to the National Action Plan report, sustainable maintenance of rural water supply facilities for the period 2016-2020 (2016), funding for maintenance of sustainable water supply facilities is 4,358.618 billion VND. To compensate for this funding, it is necessary to involve the private sector in investment, management and operation of water supply facilities in rural areas, reducing the burden on the state budget.

Studies pointing out that the private sector and the state sector and the management community in the water sector have their own pros and cons. There are a number of comparative studies between the private sector and the public sector in the water supply sector. According to the authors Antonio Estache and Martín A. Rossi (2002) using 1995 data with sample sizes of 50 companies in Pacific regions and using test results in the US. With this topic study, Elizabeth L. Kleemeier (2010) summarized the rural private operator initiatives as a promising option for addressing sustainability and sustainability issues. The site describes 25 case studies from Sub-Saharan Africa, North Africa, Latin America, the Caribbean, South and Southeast Asia. In addition, the Latin American study by George,

Clarke, Katrina and Scott (2009), based on a comparison before and after private sector participation, shows that the proportion of household. The results of a study in Portugal by Rui Cunha Marques (2008) compared water supply systems managed by the private sector and the state sector, indicating that the management of the water supply system in the area The private sector is better than the state sector . However, the study by Edouard Pe'ard (2009) in OECD countries is based on the evaluation of 22 empirical tests with 51 case studies showing that private sector participation in water supply has not a positive consequence. A study by L. Koestler (2009), in four case studies in Uganda, shows that private sector participation provides a high degree of motivation and effectiveness, but is not appropriate at all community. Research by Eshien Chong, Freddy Huet, Stephane Saussier, and Faye Steiner (2006) supplies water in France with a sample size of 3,650 enterprises (31% managed by the public sector and 69% managed by the other sector). The average water price of pumping stations managed by PPP is higher than the average water of 17.45%.

Another aspect is the satisfaction of water service users at water supply stations by different organizations, which is an important objective in overall quality management. In the field of public service in general and water supply services in particular, there are many studies to evaluate customer satisfaction. According to the study by KC Ellawala and DPMP Priyankara (2016) in southern Sri Lanka from July to September 2015, a sample of 583 households with 25 interview questions revealed that the site the residence area is the most influential parameter on satisfaction. Satisfaction on the safety of the smell was more than 95% of the respondents. The authors Parviz Fattahi, Amirsaman Kherikhah, Ramin Sadeghian, Shahla Zandib and Saeed Fayyaz (2011) propose a model for measuring the level of satisfaction of customers in the water supply sector. Some important criteria such as water quality, quantity of water, corporate responsibility, etc are differentiated and used in the proposed model. Adnan Enshassi (2005) surveyed 609 households in Gaza Strip states, the results of which show that most respondents were dissatisfied with the service water supply relates to water quality, quantity and continuity. A study by Karoline Hormann (2016) analyzes the determinants of user satisfaction in clean water, sewage and trash in Portugal. The study conducted a survey of 1,070 clients conducted by the Portuguese Water and Wastewater Management Authority. And using the logistic model to analyze the relationship between overall service satisfaction and service satisfaction, the results show that overall consumer satisfaction with specific service aspects but not related to socio-economic and demographic features. The study by Jayaramu KP, B. Manoj Kumar, Prasanna Rashmi KK (2014) in the city of Hubli-Dharwad, South India for a long time compared two continuous water supply and intermittent water supply in Hubli. The results of the study show that most clients in the continuous water supply area are very satisfied with water quality, continuity, quantity, and pressure; while there is little (12%) dissatisfaction in discontinuous water supply.

In Vietnam, the general concept of private sector is based on level of generalization including public sector and non-state sector. There are many opinions about the private sector in Vietnam's regulations such as Joint Circular 37/2014/TTLT-BNNPTNT-BTC-BKHĐT of the Government of the Socialist Republic of Vietnam provides: (1) Private; (2)

Cooperatives; (3) Public non-business units; (4) Enterprise. In Circulars 54/2013/TT-BTC, assigns the works to directly manage, use and exploit, including: (1) Public non-business units; (2) Enterprises; (3) People's committees of communes, wards and townships. And according to Directive No. 35/CT-TTg, the order of priority for management and operation assignment is as follows: (1) Enterprises; (2) Public non-business units; (3) Commune People's Committee. According to Doan The Loi, Nguyen Tuan Anh (2016) in the water sector, some forms of management organizations such as communities, cooperatives, commune people's committees are not entirely state-owned or private sector. In order to identify private sector, the research team divides the active organizations and individuals that provide rural water supply into three main areas

(1) Private sector includes: organizations and individuals investing in the construction of rural water supply facilities (CRWS) and directly managing or privatized rural water supply enterprises, government no holding share (over 50% of capital). The private sector mainly operates as an enterprise (under Enterprise Law 2014, excluding state owned enterprises) and individual business households.

(2) The State-owned sectors: are state-owned organizations which set up construction of rural water supply facilities. The state sector usually consists of state-owned enterprises, Public non-business units; (the Center for Rural Water Supply and Environmental Sanitation, management board)

(3) The other sectors: is organizations outside the two sectors, such as People's Committees, communities, cooperative groups, etc., are jointly invested in the construction of rural water supply facilities and managed directly

Each management model in Vietnam shows different advantages and disadvantages. Considering the differences between the private sector and the remaining models, they can be grouped into two areas: (1) water supply stations managed by the private sector; (2) Water supply stations managed by the rest of the area (non-private sectors including State-owned enterprises, public service delivery agencies, Commune People's Committees, cooperatives, community management). The efficiency of private sector management compared to the rest of the region does the private sector actually operate better than the rest in terms of water prices and customer satisfaction? From there, it is possible to export solutions to attract or overcome pros and cons to attract the private sector to participate in investment, management and operation of rural water supply facilities.

## **2. Method**

To determine the difference between the private sector and the rest of the water price and customer satisfaction in this study based on dummy variable modeling.

### *a. Evaluate the difference between water prices*

Used by estimating the smallest price regression on a set of indicator variables for organizational choice and a set of exogenous factors (including water supply technology, capacity, capital productivity investment, life expectancy, ...), the length of the system, the number of households serving, the rate of water loss ....

$$p = D^P \delta + X\beta + u \text{ with } u \sim (0, \Sigma)$$

Where  $p$  is the price of water for  $1\text{m}^3$  (VND/ $\text{m}^3$ )

$D^P$ : A dummy variable containing the management involvement index of different management organizations

{  $D^P = 1$  if privater sector is managed

$D^P = 0$  if the rest area is managed

$X$  is a set of exogenous controls

$u$  is the (heteroskedastic) stochastic error.

We are interested in the coefficients  $\delta$  which measure the average shift in price across different the private sector and the rest manage. Here dummy  $D$  receives a value of 1 when the water supply station managed by the private sector manages, and receives zero value when the water supply station managed by the rest of the area includes: public sector, Commune management, cooperative management, and community management. Analysis and processing of results use IBM-SPSS 22.0 statistical software. This model used by the authors Eshien, Freddy, Stephane, Faye (2006) to examine the differences in water pricing between private-sector water supply stations under PPP contracts with linear regression model.

According to the Ministry of Agriculture and Rural Development and Mouhamed (2016), the private sector participates in investment, management and participation in areas with high population density and high income. In the whole country, the private sector is involved in investment and management mainly in the two major deltas, the Red River Delta (north) and the Mekong Delta (south). According to the General Statistics Office, the population density in 2016 in the Red River Delta is the highest in the country at 994 persons/ $\text{km}^2$ , and the region with the third highest population density is 433 people/ $\text{km}^2$ . Water supply stations were surveyed mainly in the Red River Delta and the Mekong Delta. In particular, the Red River delta has a variety of management models, and the efficiency of each province is different, while in the Mekong Delta the provinces have the same management models.

**Table 1: Data of water supply station analysis**

No	Province	Describe the data
1	Thai Binh, Ha Nam, Long An	Survey data for 30 water supply stations, corresponding to each province surveyed 10 stations. There are 15 stations managed by the private sector, 5 managed by the State, 10 by the People's Committee (Commune People's Committee, cooperative, community) in 2015 under the auspices of the Australian Embassy.
2	Ha Nam, Bac Ninh, Vinh Phuc, Hung Yen, Phu Tho, Thanh Hoa, Quang Ninh, Ha Noi	Survey data includes 37 water supply stations in Ha Nam (3 stations), Bac Ninh (5 stations), Vinh Phuc (2 stations), Hung Yen (5 stations), Phu Tho (2 stations), Thanh Hoa (4 stations), Quang Ninh (7 stations) Hanoi (6 stations). Data collected by the Institute for Irrigation Economics and Management in 2017. The data for the 2017 survey includes 19 stations managed by private sector, 12 managed by state owned sector and 6 managed by Commune People's Committee .

*b. Evaluate the difference between customer satisfaction*

In determining the difference in customer satisfaction of the private sector and the rest of the region, the authors used the dummy variable model to distinguish the private sector and the rest. The impact on customer satisfaction as analyzed above is the amount of water, quality and location of households using the system. Using the data set of 900 households surveyed by the Institute of Economics and Management of Irrigation under the Australian Embassy's implementation of the Private Sector Assessment in 2015 in three provinces of Ha Nam (300 households), Thai Binh (300 households), Long An (300 households).

$$S = \alpha D + \beta Y + u$$

S is customer satisfaction on the likert scale of 5 points.

$D^S$ : a dummy variable containing the management involvement index of different management organizations

$$\begin{cases} D^S = 1 & \text{if privater sector is managed} \\ D^S = 0 & \text{if the rest area is managed} \end{cases}$$

Y is the control variable (including water hours, water pressure, color, odor, taste of water and distance from household to water supply station). In addition, in this study, the author proposes additional features for the water supply station such as project duration, length of pipeline / household, scale of water supply station.

Factor  $\alpha$  to consider the degree of customer satisfaction differences between the private sector and the rest. Data set of 900 households interviewed after analysis using IBM-SPSS 22.0 statistical software.

### 3. Results

#### 3.1 Description of characteristics of the objects to be surveyed

##### *a. Pumping Stations*

Based on data collected from 67 pumping stations in 10 provinces (including 9 provinces in the North and a province in the South) among them 34 pumping stations managed by the private sector (accounting for 50.75%) and 33 water supply stations managed by the other sector (accounting for 49.25%) (see table 2) .

**Table 2: Selected pumping stations in survey**

No	Province	Organization					Total	Rate (%)
		Private Sector	The other sectors					
			Government Sector	Commune People's Committee	Cooperative	Community		
<b>I</b>	<b>Northern</b>							
1	Bac Ninh	2	2	0	0	1	5	7.46
2	Ha Nam	10		2	1	1	14	20.90
3	Ha Noi	4	1	0	1	0	6	8.96

No	Province	Organization					Total	Rate (%)
		Private Sector	The other sectors					
			Government Sector	Commune People's Committee	Cooperative	Community		
4	Hung Yen	3	1	0	1	0	5	7.46
5	Phu Tho	2	0	0	2	0	4	5.97
6	Quang Ninh	1	6	0	0	0	7	10.45
7	Thai Binh	5	1	2	1	1	10	14.93
8	Thanh Hoa	2	1	0	1	0	4	5.97
9	Vinh Phuc	0	2	0	0	0	2	2.99
<b>II</b>	<b>Southern</b>							
1	Long An	5	3	1	0	1	10	14.93
Total		34	17	5	7	4	67	100.00
Rate (%)		50.75	25.37	7.46	10.45	5.97	100	

The characteristics of the rural water supply station are described in Table 3, the size of the rural water supply stations operated by the private sector is larger than the rest. The performance in terms of m<sup>3</sup> night-day and work life of the rest of the area is higher than that of the private sector.

**Table 3: The characteristics of the rural water supply station**

Management area	Capacity according to design (m <sup>3</sup> day-night)	Performance by m <sup>3</sup> day-night (%)	Pipeline length (km)	Life expectancy for 2017 (years)	Water price includes VAT (VND/m <sup>3</sup> )
The rest of the area	1256.03	0.61	20.48	7	5235
Private sector	2979.62	0.57	47.94	5	6349

*b. Household users*

Table 4 show the analytical variables. In there, the average water price of the pumping stations survey is 5,800 VND/m<sup>3</sup>, the lowest is 2,500 VND/m<sup>3</sup> which managed by the community (Long An Province) and the highest is 8,400 VND/m<sup>3</sup> which managed by individual business households (Long An Province). Other features of the pumping station water are showed in Table 4 below.

**Table 4: Features of the pumping stations were surveyed in the analysis model**

Variable	Concept	Minimum	Maximum	Mean
P	The current water price of the pumping stations, the water price included VAT (VND / m3)	2500	8400	5800.075

Variable	Concept	Minimum	Maximum	Mean
D <sup>P</sup>	Denoting the management area. Value 1 is the management of private sector and value 0 is the management of other sector	0	1	0.507
X1	Total lost water divided the km of the system	.019	1.243	0.296
X2	Rate of water loss %) <sup>1</sup>	.050	.750	0.276
X3	Number of connected households divided 10000	.015	.800	0.206
X4	Length of pipeline divided number of connected households (m/ household)	3.338	107.260	18.505
X5	Project duration to 2017	0.000	30.000	6.150

After clarifying other values in water quality assessments such as color, smell, and taste, and other water quality assessments. Table 5 shows 900 interviewed households then filtering out 442 households which the results describing by region, province of management. In table 5, the results of analysis of the households after filtering out, the proportion of households in the private sector and the rest are 58.82% and 41.18%, respectively. And the proportion of men and women is 55.88% and 44.12% respectively (see table 5).

**Table 5: Features of interviewed households by region and province**

Gender	Ha Nam		Long An		Thai Binh		Total	Rate(%)
	Other Sectors	Private sector	Other Sectors	Private sector	Other Sectors	Private sector		
Male	10	20	69	65	22	61	247	55.88
Female	7	15	56	58	18	41	195	44.12

Table 6 illustrates the features related to customer satisfaction in the analysis model.

**Table 6: Results of Features related to customer satisfaction in the analysis model**

Variable	Concept	Min	Max	Mean
S	Satisfied customers about water supply system according to a five point Likert scale (1- Very dissatisfied, 2 - Not satisfied, 3 - Normal, 4 - Satisfied, 5- Very satisfied)	1	5	3.67
D <sup>S</sup>	Managed area, value 1 is the private sector's management and value 0 is other sectors's management	0	1	.59
Y1	How many hours a day is there in your family? (1- 24h, 2 – Only day, 3- Only night, 4-1/2 day, 5- Depending on day, 6-Depending on time)	1	7	2.97
Y2	Intensity of clean water (1-strong, 2-medium, 3-weak, 4-depending on time, 5- other)	1	5	1.50

<sup>1</sup> Calculated by total sales of water

Variable	Concept	Min	Max	Mean
Y3	The color of water (1-Very bad , 2-Bad, 3- no color, 4-Good, 5-Very good)	2	5	3.82
Y4	The smell of water (1-Very foul, 2-foul, 3- No smell, 4-Good, 5-Very good)	2	5	3.48
Y5	The taste of water (1-salty, 2- brackish, 3-sour, 4-quite sweet, 5-sweet)	2	5	4.36
Y6	Distance from system to home (km)	.01	7.50	1.85
Y7	Service life to 2017	2	30	11.03
Y8	Length of pipeline/household (m /household)	3.33	45.05	14.26
Y9	Number of households by design (100 households)	1.00	105.00	19.35

### 3.2 The difference between the private sector and other sectors

#### a. Difference in water prices

The least squares OLS estimation result of the model was significant (Sig.F = 0.00), which was smaller than  $\alpha = 1\%$  meaning that at least one independent variable affects the dependent variable of the water price. And the regression coefficient  $R^2 = 0.346$  with the Durbin–Watson coefficient  $d = 1.717$ ; With  $k' = 6$ ,  $n = 67$  so having  $dU = 1.642$ ,  $dL = 1.251$  and  $4-dU = 2.358$ , so the model has no level 1 correlation. And the VIF coefficient for 6 variables is less than 2 so there is no multicollinearity (Hoang Trong and Chu Nguyen Mong Ngoc, 2008). This coefficient is in the range 1-3, so the model does not have self-correlation. The results of the estimation coefficients are presented in Table 7. The analysis results show that the water price of the pumping stations managed by the private sector is higher than that of the other sectors of 962 VND/m<sup>3</sup>. This difference is statistically significant at <1%. If the price difference between the two management areas is comparable, the average price of survey pumping stations is about 16.59%. This result is slightly lower than the research paper Eshien Chong. The results of water price differences between pumping stations managed by PPP compared with the pumping stations managed by the government directly is 17.45%<sup>2</sup>. As a result of the model, if the 1% improvement in water loss rate is achieved, it will be improved by 25.16 VND/m<sup>3</sup>, which is statistically significant at <5%. According to the Government's Decision No. 2147/QĐ-TTg, the water loss rate from 2015-2020 will decrease by 1.4% per year and 0.6% per year from 2020-2025<sup>3</sup>. Flowing this goal of decision, the government will invest the budget to: (1) Enhance public awareness; (2) Enhance the capacity of local authorities; (3) Improved management capacity for water supply units; (4) To build and perfect mechanisms and

<sup>2</sup> In the study by Eshinen Chong (2006), the difference in water prices of pumping station between managed PPP and managed government is € 26 compared with the price water is 159 €

<sup>3</sup> According to Decision No 2147 / QĐ-TTg by the Prime Minister dated November 24, 2010 Approving the national program against loss, clean water collection until 2025 with the main objective to 2020 is 18% 2025 is 15%

policies on the prevention of water loss (5) Prevent the loss of clean water due to technology. If the 2015-2020 target is achieved as set out, each year with m<sup>3</sup> the water supply stations will decrease by 35.22/m<sup>3</sup>/year. As the service life of the system increases, the water price decreases. In this model it shows that when the service life of the system increases by one year, the water price will decrease by 6.97 VND/m<sup>3</sup> but this result is not statistically significant.

**Table 7: The regression estimation results explain the difference in water prices between the private sector and the other sectors**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
Intercept	4810.624	385.364		12.483	.000		
D	961.810	281.304	.409	3.419	.001	.789	1.267
X1	-996.558	649.506	-.224	-1.534	.130	.531	1.885
X2	2516.189	1173.533	.282	2.144	.036	.654	1.530
X3	533.486	796.017	.084	.670	.505	.721	1.387
X4	1.826	9.197	.027	.199	.843	.607	1.648
X5	-6.972	25.799	-.038	-.270	.788	.575	1.740

*b, Difference of satisfaction*

According to the results of regression analysis using least squares OLS, because the significance level of the model (Sig.F = 0.00) is smaller than  $\alpha = 1\%$ , the regression model is statistically significant. The regression coefficient  $R^2 = 0.408$ . This model has no self correlation because the Durbin-Watson coefficient is  $d = 1.295$  with sample  $n = 442$  in the range of  $1 < d < 3$ . The model does not have multi-collinearity due to the coefficient VIF  $< 2$  of 10 independent variables (Hoang Trong, Chu Nguyen Mong Ngoc, 2008). Customer satisfaction with water supply service stations managed by the private sector was higher than the other sectors, accounting for about 0.161, which was 4.4% higher than the average. In general, the difference is statistically significant  $< 5\%$ . There are two indicators that affect customer satisfaction: water availability and intensity of clean water, in which the intensity of clean water index most affects the customer satisfaction 10.71% (with significance  $< 1\%$ ). For water quality, the three most important indicators are color, smell and taste. Water color affects the overall satisfaction of the water supply service stations, which accounts for 5.85% (significance  $< 1\%$ ) followed by a 4.77% smell (significance  $< 10\%$ ), water taste did not significantly affect customer satisfaction. In indicator of location of customers compared to water supply service station, which affects 1.63% of overall satisfaction, the minus "-" shows that the customer's location as far as possible, the satisfaction decreases (with significance  $< 5\%$ ). And the longer service life, the lower the customer satisfaction. As the service life increases by one year, customer satisfaction is reduced by 0.013 overall satisfaction (significance  $< 10\%$ ). The larger the

scale of the water pumping station, the higher the customer satisfaction, but the value that affects the overall satisfaction is small and not statistically significant.

**Table 8: The regression estimation results explain the difference in customer satisfaction between the private sector and the other sectors**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
Intercept	2.342	.350		6.696	.000		
D	.161	.082	.087	1.971	.049	.699	1.431
Y1	-.021	.017	-.051	-1.229	.220	.806	1.240
Y2	-.393	.042	-.391	-9.259	.000	.771	1.298
Y3	.288	.082	.156	3.491	.001	.684	1.462
Y4	.175	.067	.120	2.634	.009	.659	1.518
Y5	.041	.054	.032	.755	.451	.765	1.308
Y6	-.060	.026	-.108	-2.354	.019	.653	1.530
Y7	-.013	.005	-.123	-2.751	.006	.692	1.444
Y8	.016	.004	.188	4.312	.000	.721	1.387
Y9	.001	.001	.029	.657	.511	.727	1.376

#### 4. Discussion and Conclusion

The results show that the private sector has a high water price and a higher level of satisfaction than the rest of the region (state and other sectors). Research results from 67 northern and southern Vietnam stations indicate that the private sector has higher water prices than the rest 962 VND/m<sup>3</sup>. With higher private sector water prices than the rest of the managed area, the poor will be affected by water supply stations served by the private sector. And the water loss rate of the management units in the period 2015-2020 if the objectives of the water loss reduction program are achieved, the water price per year will decrease by 36.54 VND/m<sup>3</sup>-year. As life expectancy increased, the price of water tended to decrease, the rate of decline was not large and not statistically significant. On Customer Satisfaction Analysis results also showed that the private sector customer satisfaction was higher than the remaining 4% compared to the average satisfaction score on the likert scale. And factors such as: 1) waiting time for water deliveries, (2) pressure of water, (3) color of water, (4) smell of water, taste of water affect not much to customer satisfaction. The more distant the customer's home, the less the satisfaction of the customer and the lifetime of the building affects about 0.5% compared to the average satisfaction of the water supply stations on the likert scale.

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# MITIGATION PERFORMANCE OF HOUSEHOLD LIVING IN DISASTER PRONE II OF MT.SLAMET

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## **Abstract**

*This study has an aim to study the mitigation performance of household living in disaster prone II of Mt. Slamet. Living harmony with disaster is employed by Indonesia. To gain the research objective, this study use sequential mixed methodology supported by qualitative research and quantitative research sequentially. It was started with indepth interview to 29 key informants for qualitative and 538 households as the samples for quantitative approach. Variables are consist of mitigation, household characteristics, capitals of households and transformation on process and structure. The study area is located in the disaster prone II, approximately 4-6 km from the peak of Mt.Slamet, which had households work in agriculture and tourism sector. Mitigation phase describe the household warning system and the evolvment of disaster management. The result of this study explained household characteristics for number of healthy hosehold member (0.101\*), owning the size of land (-0.118\*) and household network to others living outside the red zone (0.312\*\*) are directly influenced to mitigation ability. Transformation on process and structure is significantly influence directly to mitigation (0.115\*) which consist of the land use management, spiritual enforcement and culture implementation. Household living in disaster prone II applied culture activities as part of their belief on reducing the negative impact from the eruption of the mountain. Mt. Slamet had big eruption every 5 to 10 years which recently was not predicted easier. Ruwat Bumi as part of the culture implementation is one of the activities have been carried out until recent time.*

**Keywords:** Mitigation, Disaster prone II, Household Characteristics, Capitals of households

## 1. Introduction

Disaster defines as a disturbance affected to people for losing life, materials and environmental damage. Disaster bring people to cope using their own resources (United Nations, 1992). Disaster is conditioned by the human activities and shows a continuous event after the hazards which could be natural or sources from people (Maskrey, 1993; Hewitt, 1996; Bhatt, 2002; and Wisner et al, 2004). To manage the impacted from the existence of hazard of disaster, have to identified the threat to the community and nations as whole. Hazards consists of natural hazards, man-made hazards and intentional hazards (Coppola, 2007). Indonesia located in between three active faults; Pacific, Indo-Australian and Eurasian which caused to geological condition as volcanic disaster (Kusumastuti et al, 2014). The second highest mountain in Indonesia recognized as Mt.Slamet located in the density population of Central Java province. Since 2014, the activities of Mt.Slamet started occurred and un-predictable nature for eruptions which led the people who located near to risk impact on the constant standby level. The highest eruption was carried out on September 2014 and since then, community and local government prepare themselves with their own limited resources.

Mt. Slamet located in three difference districts which explore Mt.Slamet' resources in different ways, such as agriculture and tourism sector. Three different districts are Tegal, Banyumas and Pemalang which divide into five villages which include into the disaster prone area. Disaster prone area describes as the area with the highest risk impacted from Mt.Slamet' hazard. Indonesia settled three disaster prone area based on the level of the risk (Regulation of Minister of Energy and Mineral Resources of Republic Indonesia, 2011). The highest risk is located in disaster prone III which ban any human settlement and activities inside the area. The disaster prone II is the area who could be living by household.

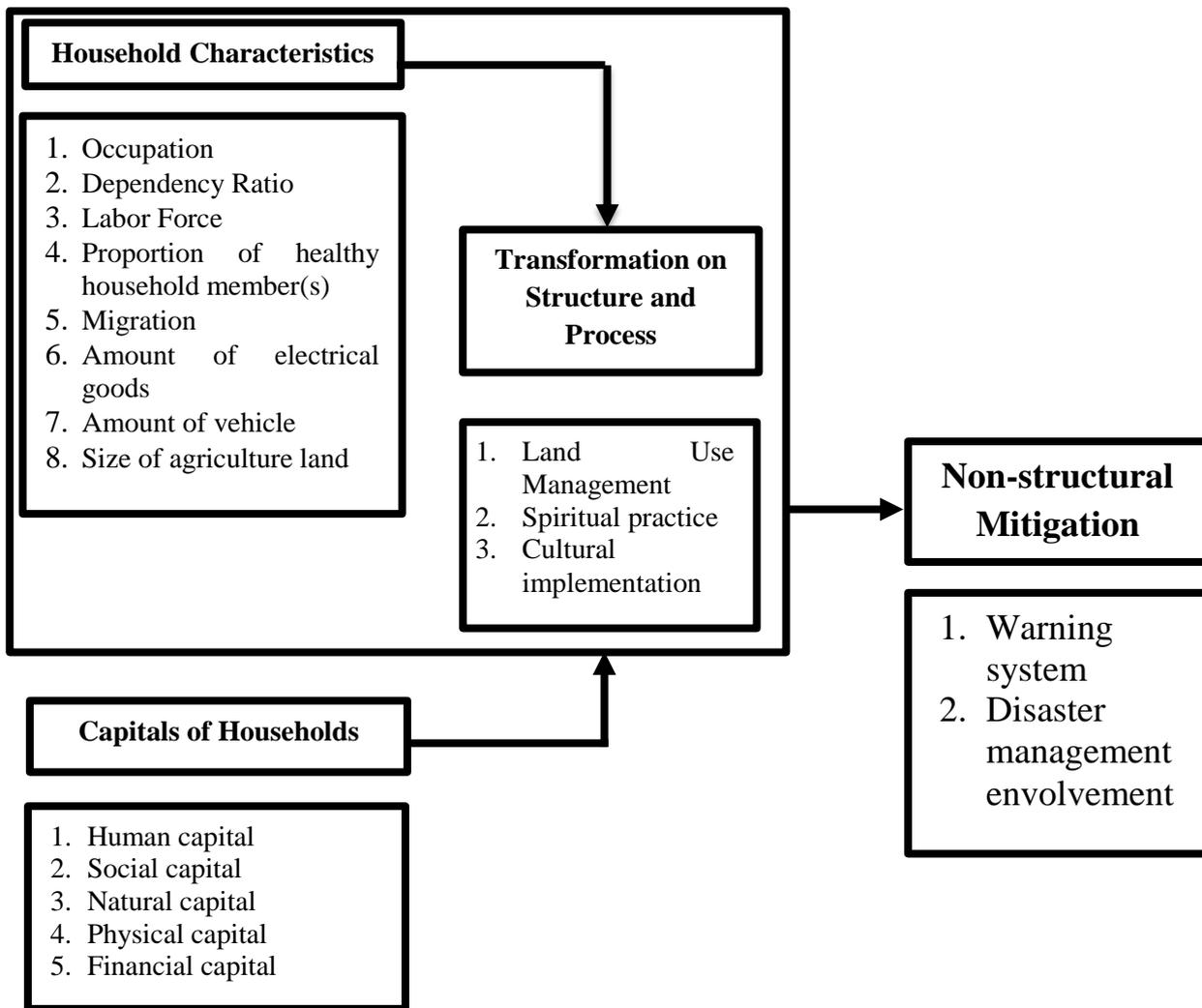
Therefore, disaster prone of Mt.Slamet has the highest risk for household living in this area. Indonesia government aware concerning the geological situation of Indonesia which impacted to the highest risk area. Indeed, one national agency for disaster management, recognized as BNPB (*Badan Nasional Penanggulangan Bencana*) established in 2004 to support for people who live with high risk. However, BNPB is enforced by BPBD (*Badan Penanggulangan Bencana Daerah*) which is located in each districts since Indonesia devolved the government system. Furthermore, Indonesia set policies in ministerial regulation No 15/Year 2011 as the vigilance by the community who stay in Disaster Prone II area during normal status, alert status, standby status and beware status (Republic Indonesia Minister regulation of Energy and Mineral Resources, 2011). The mitigation guideline was not mentioned the specific direction on each of the phase of disaster management which cause live in high risk area is insecure from the hazards.

Indonesia need well-applied disaster management concept which elaborate to the heterogeneity of culture and spiritual aspects. Disaster management consist of four phases; mitigation, preparedness, response and recovery phases. To build resilience from the impact of hazard, mitigation phase of each household need to build and strengthen before the disaster occurs. Mitigation means as an approach to reduce or eliminate the likelihood, or

the consequences of a hazard, or in both. Mitigation seeks to treat the hazard impact on the society (Coppola, 2007). Leone and Zucarro (2014) explained the long and short-term for mitigation strategies are depending on the capabilities of people and/or household who lived in risk area altered the hazards. Their study is related to strengthen the physical structure to protect and reduce the risk from volcanic crisis, including predict the duration or period of time. The type of this mitigation strategies is structural mitigation which embedded the physical structure to reduce the risk impact of hazard. The other type of mitigation strategies is non-structural mitigation which use human behavior to reduce the risk from volcanic hazard. It's concern as 'man adapts to nature' which is considered most since less cost and easy to communities implemented the strategies (Coppola, 2007).

Non-structural mitigation in line to the framework described by Lewis (1999) and Wisner et al (2004) to balance the potential dangers from environmental hazards. The fourth framework is live with hazard and risk which explore the integration between environmental threats and opportunities. Household who live side by side with risk are produce and sustain the habitats and livelihood using their resources without destroying their resources. Natural resource could defined as anything to obtain from the environmental to satisfied human needs and wants (Miller and Spoolman, 2011). Therefore, to understand the meaning of live with hazard and risk need to recognize the livelihoods concept as integration of mitigation enactment of household living in disaster prone II (GVP, 2006).

Mitigation as to measures on reducing hazard risk to dictating human actions to keep safe, Sutton and Tierney (2006) explain the knowledge and the actions of human to recognize disaster occurrence is the local warning system which has been strongly built from ancestors. Furthermore, the involvement of households practicing disaster management phase with several local institution has been studied as the best practice of non-structural mitigation (Sugimoto, 2013). This study has an aim to study the mitigation performance of household living in disaster prone II of Mt.Slamet. Household living in disaster prone II explained by the characteristics and also the capitals owned in each household. However, household as the agency structure who impacted the volcanic hazards, external environment which have strong relationship to household activities and capitals are examined as transformation on process and structure. The conceptual framework is describe in figure 1.



**Figure 1. The Conceptual Framework of this study**

## 2. Method

This study using quantitative methods and use household as the unit of analysis. The total population of household living in disaster prone II of Mt.Slamet is approximately 4,268 households. Through the Hursh-Cesar (1981) measurement, the total sample was 538 households spread to five villages. Two-stage stratified sampline was chosen to assign the village in each districts based on the location and previous impact assessed by BPBD in Tegal regency. Respondents were chosen by systematic sampling with interval 9<sup>th</sup> from the list of households in each village. Structured interview guideline enacted as the instruments of the research to collect the data. The research area were spread in surround of Mt.Slamet, such as Sawangan, Guci, Dukuh Tengah, Ketenger and Gunungsari villages. They are spread in the north, east and south side of Mt.Slamet as the designated from previous area impacted to the eruption. Most of the villages have agriculture, trading and natural tourism activities as their livelihoods to support their life. The sampling distribution for household living in disaster prone II of Mt.Slamet describe in Table 1.

**Table 1. Distribution of sampling for household living in the disaster prone II area**

No	Sub-district	Village	Population	Percentage	Sample size
1.	Bumijawa	Sawangan	664	14.35	78
		Guci	1,020	22.04	118
2.	Bojong	Dukuh Tengah	830	17.93	97
3.	Baturaden	Ketenger	1,012	21.87	117
4.	Pulosari	Gunungsari	1,102	23.81	128
TOTAL			<b>4,268</b>	100	<b>538</b>

To study concerning the performance of the mitigation phase for households live in disaster prone II of Mt.Slamet, the enactment of mitigation phase which consist of the human behavior on warning system and the involvement of disaster management practices. This study is analyze use univariate and multivariate analysis. Univariate analysis is carried out through descriptive analysis and recognize the performance of mitigation phase. Furthermore, to understand how the independent variables influences to mitigation performance. Independent variables based on literature review were describe as the household characteristics, capitals of households and transformation on process and structure.

### 3. Results

Result of this study consist of descriptive analysis for mitigation performance and the influence of household characteristics, capitals of households and transformation on process and structure to mitigation performance. The mitigation performance assessed using likert scale score and divide into three level groups, such as low level (0-4 scores); medium (5-10 scores) and high (>10 scores). Mitigation performance in households living disaster prone II of Mt.Slamet shows in low level with minimum score is 0.00 and maximum score is 14.00 (table 2).

**Table 2. The percentage Level of Mitigation**

Mitigation	
Level of Mitigation Capacities	Percentage
Low level (0-4 scores)	55.4
Medium level (5-10 scores)	35.1
High level (>10 scores)	9.5
Total	100.0 (538)
Mean: 4.70 Median: 4.00 S.D=3.90 Max=14.00 Min=0.00	

*Source: developed by researcher from Quantitative methods*

Household living in disaster prone II recognized less on mitigation performance. Mitigation phase consist of two indicators concerning warning system and the involvement of disaster management (see Table 3). Household who lived in the disaster prone II never plan to find other area to settled since they found livelihoods as farmer

brought benefits to their life (Dewanti&Dusayu, 2015). But in the other hand, households do not recognize the disaster map in Mt.Slamet (53.5%) or having experience observe the sign of disaster evacuation (57.8%). The performance of mitigation has been shows less involvement of household in disaster management participation. More than 50.0 percent of households stated had no experiences working collaborate on disaster management activities (71.2%), experiences to be volunteer (70.3%) and life guard (66.7%). Based on this indicators, households had less warning system and involvement as part of reducing the hazard impact on volcanic disaster.

**Table 3. The level of Mitigation Perfomance based on Each Indicators**

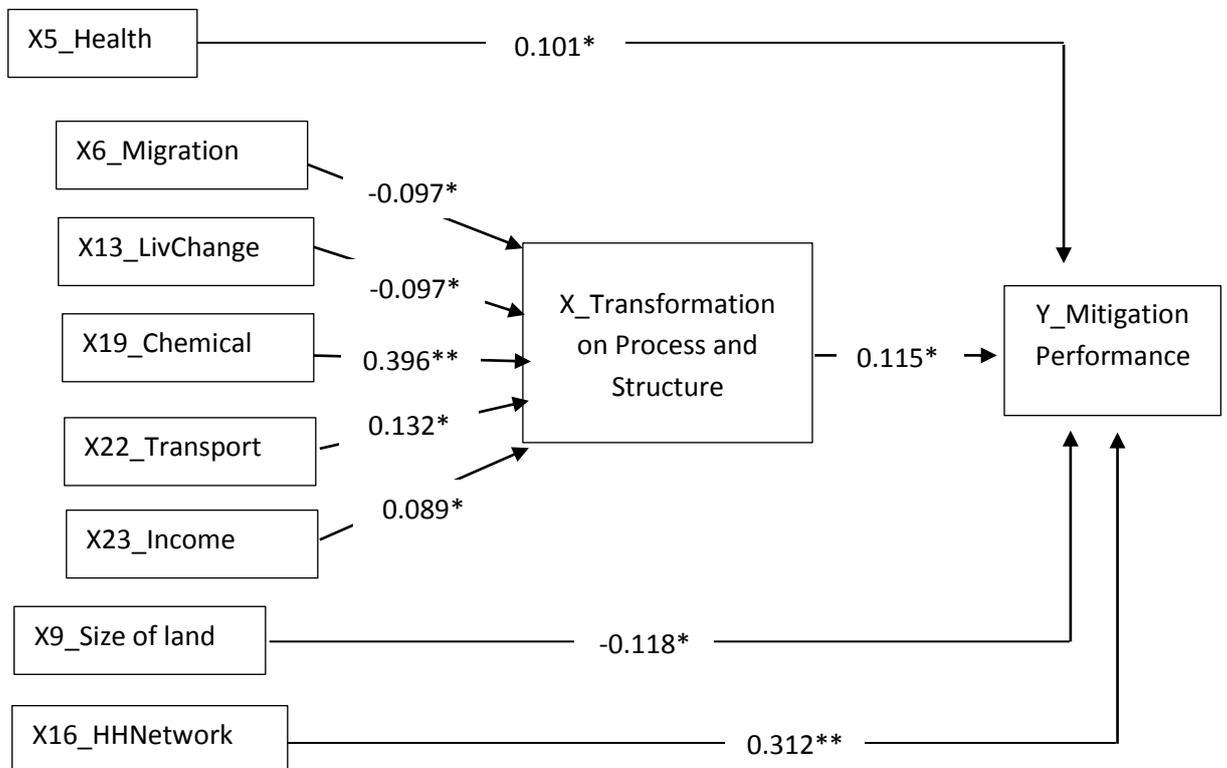
Mitigation phase	Percentage			
	Level of Behavior			
	Never 1	Sometime 2	Always 3	Total N=538
<b>Warning System</b>				
1. Have plan to move from here	85.1	8.9	5.9	100.0
2. Have information on the risky place	36.1	25.7	38.3	100.0
3. Recognize disaster map	53.5	20.1	26.4	100.0
4. Have experience to observe the sign of disaster evacuation	57.8	18.0	24.2	100.0
<b>Disaster management evolvement</b>				
1. Has meeting in the village to share disaster management knowledge	47.2	23.2	29.6	100.0
2. Has experiences working collaborate with institution in disaster management	71.2	13.2	15.6	100.0
3. Has experiences working as volunteer to build evacuation sign	70.3	12.3	17.5	100.0
4. Help to be volunteers of lifeguard	66.7	12.5	20.8	100.0

*Source: developed by researcher from Quantitative methods*

Based on the descriptive result, households living in ‘Red-zone’ had limitation on practices the mitigation phase. However, tt can be improved through their resources, described as capitals of the households. However, the characteristics of household living in disaster prone II are different in each of area and brought different structure of agency problem. Therefore, multivariate analysis to analyze the influence factors which described by independent variables need to detect the multicollinearity. In the other hand, multivariate analysis through path analysis has five assumption need to be required, however, the most important is there should be no interactions among the variables which could be tested by multicollinearity test (Streiner, 2005). Multicollnilarity is a statistical problem which if it is exist, means the perdictor factoes could cause several problems to the estimation of  $\beta$  and result interpretation. Multicollinearity could be examine through the measurement of Variance Inflation Factors (VIF), identified by each of independent

variables. When the VIF exceeds than 10, the multicollinearity is found as the problem for the model in conceptual framework (Montgomery & Runger, 2008). Among 25 factors supported as independent variables were less than 10, including the dependent variables, mitigation performance (1.10). In conclusion, there is no problem concerning the model which describe in conceptual framework.

Path analysis is to analyse the direct and indirect effects of independent variables to dependent variables (Wuensch, 2016). Direct effects describe the independent variables predicting to dependent variable directly, likewise indirect effects explain the independent variables predict to dependent variable indirectly and had middle variable. Through the model developed in this study, the result of path analysis could be describe in Figure 2. It found three independent variables directly influence to the mitigation performance in the level significant of 0.05 and 0.01. The number of household members in healthy condition is influence directly to mitigation performance as much as 0.101. It shows if the household members in less healthy condition could be decreasing the mitigation performance to involve the disaster management practices. The size of land has negative resulted of  $\beta$  value for direct effect to mitigation performance as - 0.118\*. Farmer who owned bigger size of land in agriculture had less mitigation performance. It could be describe based on their less involved on mitigation performances. In the other hand, social capital which describe in the networking of households to other community who lived in non-red-zone improve the mitigation performance as much as 0.312. The household planning to prepare the evacuation as warning system preparation by making relationship to others during the volcano eruption.



**Figure 2. Path analysis of Mitigation Performance**

Indirect effect found on five independent variables which consist on migration, livelihoods changing, chemical fertilizer usage, transportation as the physical capital and income of each households. Migration and livelihoods changing (-0.097) are found negative influence to mitigation performance indirectly through the transformation on process and structure. It shown the more household members migrate to other side of village, the more the households have less mitigation performances. Reciprocally the livelihoods changing in households influence to the mitigation performance lower compare household who is less changing for their job. Migration behavior and livelihood changing impact to transformation on process and structure, then impacted to mitigation performance. Chemical fertilizer utilization, transportation as physical capital and income are positive influence indirectly on mitigation performance.

#### 4. Discussion and Conclusion

In discussion, the result of path analysis among 25 independent variables found three variables directly effect and five variables indirectly effected to the mitigation performance. The path analysis for this formula has been valued as R squared equal to 0.277 which means 27% of dependent values described by the independent variables. The path analysis yield decomposing of the correlation among set of variables formed to dependent and independent variables (table 4). The direct effect and indirect effect could be measure total effect to whole of variables. The highest total effect value found on H16\_HHNetwork which indicate to the variable of social capital (0.312). Household who have good networking to other household or institution which located in non-red-zone area could directly effected to their mitigation performance. It is part of warning system of households to plan where can household move when eruption occur.

**Table 4. Decomposing the Correlation among set of Variables of Mitigation Performance**

<b>Independent Variables</b>	<b>Direct Effect</b>	<b>Indirect Effect</b>	<b>Total Effect</b>
X5_Health	0.101		0.101
X6_Migration		$0.097 \times 0.115 = 0.023$	0.023
X9_Size of Land	0.118		0.118
X13_LivChange		$0.097 \times 0.115 = 0.023$	0.023
X16_HHNetwork	0.312		0.312
X19_Chemical		$0.396 \times 0.115 = 0.046$	0.046
X22_Transport		$0.132 \times 0.115 = 0,015$	0.015
X23_Income		$0.089 \times 0.115 = 0.010$	0.010
X_Transformation	0.115		0.115

Indirect effect found on five independent variables which consist on migration, livelihoods changing, chemical fertilizer usage, transportation as the physical capital and income of each households. Migration and livelihoods changing (-0.097) are found negative influence to mitigation performance indirectly through the transformation on

process and structure. It shown the more household members migrate from their house decrease the mitigation performance. Ho, et al (2008) and Kung&Chen (2012) study gender in disaster management. The result stated that female has well-prepared on disaster management compare to male. However, this study has found differently, household who have less male household members because they were having migration, brought less mitigation performance.

Chemical utilization is explained positively impacted to transformation on process and structure, then to mitigation performance. Since fertilizer is important part on the land use management, the significance found on less than 0.01 with 0.396 influence indirectly to mitigation performance. Higher chemical fertilizer utilization increase the households's land use management in agriculture, and indirectly support their mitigation performance. It could be impact to other independent variables on income. Chemical fertilizer utilization improve the agriculture harvesting and increase income of the households in positive indirectly to disaster management. Increasing income could decrease the damage risk and found better disaster management enactment. Higher income receive by household supported them to aware and perform mitigation in volcanic. It is in line to the several previous study, social economic status support mitigation in disasters (Lin, Shaw, Ho, 2007; Kellenberg and Mobarok, 2008). Transportation as part of physical capital explain as the access of household could use transportation log surround their house and environment. It is indirectly effected to the mitigation performance which part of indicator on warning system planning.

Healthy household members effected to the capabilities on mitigation phase. Horwell and Baxter (2006) describe the same findings as this study, volcanic risk mitigation brought less when individuals have problem on health condition before the volcanic disaster occur. Moreover, household who lived in disaster prone II mostly work in agriculture sector and found that size of land indirectly effected to mitigation performance. Household live in disaster prone II are rely to the natural resources as their part of livelihoods and capitals (CARD, et al. 2009), size of land is effect to the transformation on process and structure and mitigation enactment.

Live with hazard and risk as Lewis (1999) and Wisner et al (2004) describe hazards can be reduce the impact of risk when volcanic disaster occur. The exogeneous variable named as transformation on process and structure had positive direct effected to the mitigation performance.

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# THE ROLE OF THE LOCAL PEOPLE IN FOREST MANAGEMENT AND DEVELOPMENT IN VO NHAU DISTRICT, THAI NGUYEN PROVINCE

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## **Abstract**

*In Vietnam, community-based forest management has been existed since long time and related to livelihoods and cultures of the local communities. In the fact that, this is an effective way to develop forests and consists with habits and customs of local people who are direct forest users and managers. This research focuses on analysing the role of local people in forest management and protection in Vo Nhai district, Thai Nguyen province, where the local ethnic people are poor and depend on the local forests. Methods of data collection are household survey, qualitative interview and observation. The survey was conducted by interviewing randomly 100 households through questionnaires. The research analysed the participation of local people in forest management and protection at three scales: village, household and individual. An overview assessment from these analyses indicated advantages and disadvantages in doing community-based forest management toward forest management more sustainably in the research area.*

**Keywords:** Community-based forest management, forest development, participation of local people

## **1. Introduction**

In Vietnam, community-based forest management (CBFM) has been existed since long time and related to livelihoods and cultures of the local communities. This is an effective way to develop forests and consists with habits and customs of local people who are direct forest users and managers. They manage forests by means of customary laws and/or village regulations of forest protection or plantation. Local people are main subjects and active, positive and decisive factors in every local activity, because they understand clearly difficulties and expectation as well as potentials of their communities. They do know how to promote and connect members in the community and response their activities. The facts have shown the success of community-based forest management in many areas .

CBFM means the local community manages forests that are under the management, use or ownership of other organization, but have a direct relationship to their life and livelihood, income or other community benefits such as irrigation, water supply, etc. With this understanding, forests are divided into two objects: (1) Forests of households and

individuals who are members of the community and (2) Forests under the management, use and ownership of state organizations (management boards of protection forests, special-use forests, forestry farms, state forestry companies, camp stations, etc.) and other private organizations. In the former one, community participation in forest management bases on cooperation to be mutually beneficial, share benefits voluntarily (giving more power to forest protection, supporting or exchanging for each other in forestry activities, etc.). In the latter one, communities participate in forestry activities such as protection, zoning for regeneration, forest rehabilitation, afforestation as hired labourers through contracts and benefit under contractual commitments (MARD, 2006).

The role of local people in forest management in generally or and in community forest management in especially has been more concerns by scientists and policy makers as well. Since 1990s, the policies of forest land allocation have given the rights of decision and management to local people motivating forest owners to use forest land in a sustainable way, increase forest-related income and support environment protection (Bui, 2006; To, Tran, & Zagt, 2013). Land allocation also contributed to the sedentary livelihood for shifting farmers and reduced slash and burn forests for cultivation (Castella, Boissau, Nguyen, & Novosad, 2006). In early of 2000s, the legal recognition of land tenure and community forests has continued to encourage the development of community forestry (Tran, 2012). In general, the government has established a solid foundation for the development of CBFM through the renewal of land tenure policy. Land and forest allocation in a long term is an important and necessary prerequisite for local communities to manage forests sustainably, benefit from forests and participate actively in decision-making.

The legal position of the community when participating in forest management as a forest owner with full rights and obligations are defined in the Land Laws 2013 and the Laws of Forest Protection and Development 2004. Government has recognized and institutionalized the forests that have been recognized by the community for a long time. Policy aspects allowing the extension of forest types to community-based management, such as protection forests, buffer-zones of special-use forests assert that community involvement is an undeniable practice, whether institutionalization exists or not, because it is a fundamental feature of the long-standing upland culture and community relations. Therefore, the recognition of the people as a legal entity is always beneficial for forest management. This is asserted in the Laws to confirm the local people and community have legal capacity to manage, protect, use and enterprise the forests.

Economic development activities of local people also have positive impacts on forest management and protection such as afforestation and agroforestry development. For the most effective management of the forests, people's participation should be promoted in terms of the correlation between the demand and use, the abundance of resources and other impact factors (Arnold & Pérez, 1998; Nguyen, 2016; To & Tran, 2014).

People's role promotion in forest resource management means enhancing the community strength and promoting the initiative, creativity and responsibility of local people into contribution of effective and sustainable forest management. Assessing the

role of people in forest management and protection will know how people and communities are involved in forest management, thereby contributing to promoting positive impacts and limiting negative impacts on forest resources, contributing to the sustainable forest development. This research was carried out with the purpose of understanding the role and influence of people on forest management and protection to contribute to the sustainable management of forest resources in Vo Nhai district, Thai Nguyen province, northern Vietnam.

## **2. Methodology**

### **2.1. Study area**

The research was conducted Nghinh Tuong, a mountain commune of the southeast Vo Nhai district, Thai Nguyen province, northern Vietnam. It is situated 70 km of Thai Nguyen city. The topography is quite dismembered with the most of the area altitude from 500 to 1000 meters. Slope inclination ranges from 10<sup>0</sup> to 20<sup>0</sup>, which is a difficult for agricultural cultivation. Total mass land accounts over 8.4 thousand ha, in which forest land occupies nearly 90% (PFD, 2010). Nghinh Tuong located in buffer zone of the Than Sa - Phuong Hoang Natural Conservation Area. This forest area is on limestone of Ngan Son mountain range with many common features of limestone mountain ecosystems in Vietnam. Therefore, fauna and flora diversify with many precious species.

Two minority ethnics, the Tay and the Dao, are dominative residents in this area. The population is distributed unevenly, mostly in the valleys, along the roads and near rivers or streams which are capable of farming. The people have low income, mainly generated from agricultural cultivation and forest-related livelihoods. The number of poor households occupies over 50%. The social services and infrastructure are lower development in comparison with other commune in Vo Nhai district.

### **2.2. Methodology**

This study used a mixed method approach including household survey by questionnaire, qualitative interviews and observation.

A *household survey* was carried out randomly with 100 households in Nghinh Tuong commune. Face-to-face interviews following a questionnaire was chosen to do the survey. The questionnaire was designed from documentary of research areas and issues, participation observation and the local context of research issues. It includes close and open questions divided into six parts: personal information of interviewees, forest allocation and protection, agro-forestry development, people's awareness on forest management and protection, assessment of the roles of local people in forest management and protection, and forms of forest management.

Face-to-face interviews were performed with 100 people, in which 63% are men and 37% are women. More than a half of respondents (57%) graduated high schools while the percentages of respondents graduated secondary and primary schools are 35% and 8% respectively. Age of interviewees distributed from 24 to 77 years old, in which age of 30 to 50 dominated approximately 60% in total.

**Qualitative interviews** were carried out with 14 people who are local foresters and staff officers in Nghinh Tuong commune. Interviews were conducted with individuals using open-ended questions. The interviews focus on forest management and protection; governmental policies in encouraging participants of local people in forest management. The interview information was recorded by notes, recorders and transcribe verbatim.

**Observation** is a technique to collect informally data that give an overview of physical and social features of study area and community. Data obtained through participant observation also served as a check against participants' subjective reporting of what they believe and do. The observation occurs in the time of interviews, village visiting and travelling or even in informal talking.

In observation, some images also are kept in photographs as illustration of the research.

### **3. Results**

#### ***3.1. State of forest management in the research areas***

Administratively, forests and forestland was managed following three forestland types: Special-use forests; protection forests and production forests. In Nghinh Tuong, these forest types are allocated to different forest managers.

*Special-use forests:* The management board of the Than Sa - Phuong Hoang Natural Conservation Areas manages special-use forests in Vo Nhai districts, in which 1.98 thousands ha of special-use forests located in Nghinh Tuong commune. Since 2013, the management board has contracted with 11 households in Nghinh Tuong and an organization for the protection of about 1.2 thousand ha of special-use forests. After the success of the first year of contracting, in the following years, the number of households receiving the forest protection contracts has been increased. In 2016, 68 households in this commune contracted to protect 1.7ha of special-use forests.

*Protection forests:* The area of protection forest has been allocated to Commune People's Committee (CPC) with 3.046 thousand ha. The CPC in Nghinh Tuong allocates this forest to some households and 4 villages namely Thuong Luong, Ha Luong, Na Leng and Ban Cai to protect and develop the protection forests.

*Production forests:* There are 2.78 thousand ha of production forests in Nghinh Tuong commune. This area is allocated to 363 households, in which 272 households have had forestland certificates of 1.6 thousand ha since 2013. The remaining households are in process of issuing the certificates. The certificates of forestland tenure give to local households an assurance to invest and develop their allocated forests.

#### ***3.2. Participation of local people in forest management and development***

##### ***3.2.1. At village scale***

Nghinh Tuong CPC manages 3.219 thousand ha of protection and production forests. The protection forests are allocated to 4 villages namely Thuong Luong, Ha Luong, Ban Cai, Na Leng. Each village has a team to do the duties of management, patrol and

coordination with forest rangers and authorities to detect and timely deal with infringements in forests of the villages. Members of forest protection team are well aware of the role of forest management and protection and are trained by forest protection officers on forest management. Depending on area of the managed forests, the number of members in each village is from 8 to 10.

Twelve villages in Nghinh Tuong have the forest protection convention, which has been established and passed through generations. The convention regulates forest protection and prevents deforestation. Until now, community regulations of forest protection have been maintained and implemented. In addition, the commune authorities also collaborate with forest rangers and forest protection teams to regularly patrol and inspect key areas for forest fire prevention, to ensure protection and development the local forests.

### *3.2.2. At household scales*

#### *a. Contracting the special-used forests and protection forests*

Forest contracting creates an income for local households as well as develops forest quality. The forest contracting also improves the local people's knowledge of forests resources and forest protection. In 2016, 68 households in Nghinh Tuong had protection contracts of 1.7 thousand ha of special-use forests. The payments is 200 thousands VND per hectare per year. However, number of households having contract counts small proportion in total number of households in the commune. The results of the survey showed some reasons for this limitation of contracting.

The total area of forests in this payment policy is not enough for every household (51% people agreed with this reason). Almost 30% of interviewed households said that their families lack of labours to contracting or live too far from the forests. Some others did not register contracting (22%). Most of households have not received forest contracts expected that they could do it in the future.

In the forests managed by households, the households themselves did reforestation and restoration activities. All protection activities should comply with the village customary laws. Management of the household is in fact a highly stable form of management in terms of production and ecology. Because farmers benefit directly from the forests, they restore and plant new trees in their forests annually.

#### *b. Economic development from production forests*

Almost households have production forests to develop plantation forests. Since implementation of forest allocation policy in 1990s, the area of plantation forests in Nghinh Tuong has been increase considerably. This makes change the landscape of the area and improves the local economics leading to reduce pressures on natural forests.

**Plantation forests** provide to forest owners fuel wood and an income from wood selling. The popular species in plantation forests is *Acacia hybris*. After 5 to 7 years, forest owners can earn from 65 to 70 million VND/ha from selling plantation wood. Besides, plantation forests supply fuel wood for the forest owners.

In the past, forest-related activities dominated extraction of forest products, has not attached special importance to forest plantation and forestry economic development. Recent years, they have been developed forest plantation, either following in plantation projects or self-investment. For example, in 2015, the 147 project of forest plantation funded for 60 households to plant 60.2 ha of production forests and 7.4 ha of protection forests. While local people invested to plant about 100 ha of forests by themselves.

### ***Forestry economic development***

The local people's concerns of forestry economic development have been increased recently. Almost a half of interviewed households have developed forestry - related economics and they expected to widen if they have money. Many households have been non-poor in spite of forestry economic development.

Agroforestry is a model supports for local economic development. Many local households grow forestry plants, fruit plants or medicinal plants in their forests. Although agroforestry has not developed comprehensively in the whole commune, some effective structures of agroforestry have successes in the areas such as:

- *Forests and terrace paddy fields*: Forests regulate and supply water for terrace paddy fields below, prevent soil erosion. Village community manages these forests. This model exists in two villages having higher geographical positions than other villages, called Thuong Luong and Na Hau.

- *Forests and fruit trees or medicinal plants*: some species are new planted alternatively in the forests such as *Cinnamomum verum*, *Illicium verum*, *Aquilaria crassna*. In Na Hau villages, 18 households participated the plantation projects of cinnamon-tree, with the area of 3ha. Some households in Na Leng, Ban Cai growth fruit trees on forest lands.

Nowadays, there are some projects of fruit tree developments such as planting mandarin trees (20 participants with 3ha) in Thuong Luong villages, or planting *Diễn* pomelos (21 households with 5 ha) in Ban Nura and Ban Cai villages.

- *Agroforestry and small livestock husbandry* have been developing in Na Chau, Na Leng villages. This model follows the belts of forests - fruit gardens - paddy field - aquaculture and combination of raising domestic livestock and poultry

### ***3.2.3. At individual scales***

Roles of local people in forest development are evaluated by their awareness of forest importance; participation of forest management and protection activities; and forestry-related information exchange

#### ***Local people's awareness of forests importance***

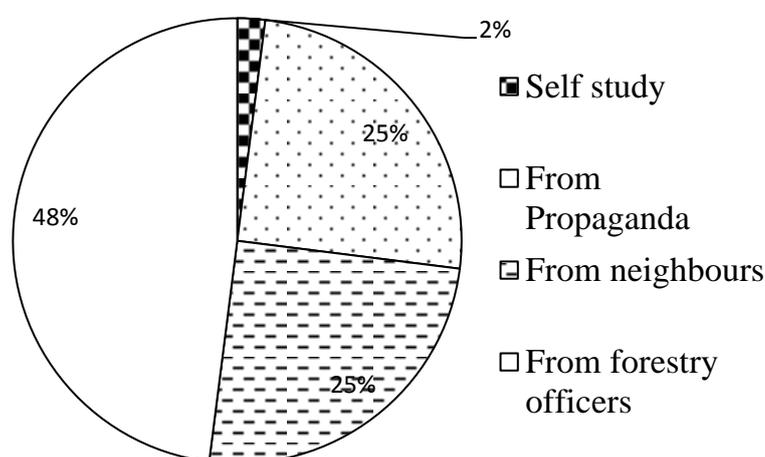
In the survey, all interviewees have awareness of the importance of the local forests with their lives such as: local climate regulation, water supply protection, supplies of foods, medicines and household economic development. Their knowledge has been increased due to education program on media and their information exchanges.

### *Participation of forest management and protection*

Individual participation in forestry-related activities differentiates between men and women. More men go to the community meetings or propaganda programs than women do. In the family, assessing information of forest development also differs from males and females. Two third interviewees said that the husbands in the family have received information firstly in their family, while this number for women accounted only 6%. The man also is a decision maker in the family with 94% of agreements while only 6% of households have discussion between the wife and husband.

### *The information access and exchange:*

People in Nghinh Tuong are minority ethnic, thus, the popular way to access information is oral and direct ways such as meeting and talking. The survey result shown that local people mainly receive forestry-related information from forest officers (48%), from talking with their neighbours (25%) and from propaganda programs. Only few people said that they have self-awareness of forest information (figure 1)



**Figure 1: Ways of information access**

The people in Nghinh Tuong have good awareness of forest ecosystem changes, forest importance and the necessity of forest protection, thus, they could have suitable activities to conserve the forests. The timely information access and exchange also affect the participatory of local community in forest management.

## **4. Discussion and Conclusion**

### **4.1. Effective assessment of forest development**

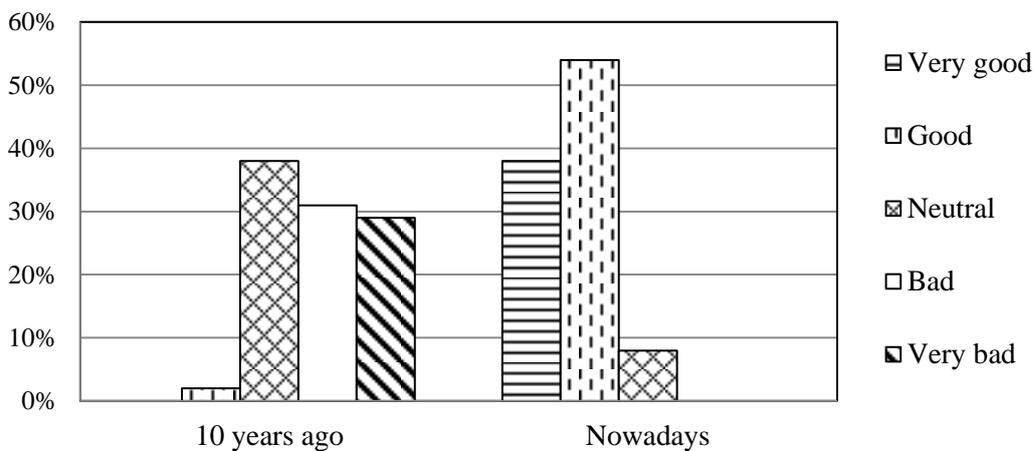
#### **Socio - economic effectiveness**

Implement forestry development to stabilize housing, create jobs for people, avoid slash and burn cultivation. Diversifying type of plantation species in agro-forestry development not only ensures food supply but also brings more income to the family. Many poor households get richer from agroforestry. The rate of poor households in 2016 is 53.66%, decreasing 3.59% in comparison to 2015. Human well-being, education and healthcare systems in the area have been more and more improve.

## Environment effectiveness

The forest ecosystem in Nghinh Tuong has been changed due to governmental policies and participation of the local people in forest management and development. The changes were recognized by the local people in the survey of forest quality assessment at the time of 10 years ago and current time (figure 2).

To assess of forest quality ten years ago, number of respondents giving bad evaluation accounted 60% while number of good assessments was only 2% of the respondents and 38% of respondents give neutral assessment. The result of assessment at the current time shown that almost respondents agreed with good or very good evaluation of forest quality, only 8% give neutral idea.



*Figure 2: Assessment of local people about the changes of forest quality over times*

The different evaluations between 10 years are explained by increasing forest plantation forests and reducing natural forest exploitation. Since 2007, forest plantation policy has been applied and developed in the area. After 10 years, the plantation forests have been increased considerably, leading to increase household's income from selling plantation wood and decrease fuel wood exploitation, slash and burn cultivation in the natural forests. The land covers also has been grown by naturally forest regeneration on up-land fields. In addition, forest fire prevention and sustainable extraction of non-wood forest products have been more concerns by the local people, thus, forest ecosystems are better. Positive changes of forest ecosystem give different environmental benefits for nature and the local people such as soil degradation prevention, soil nutrient improvement, and climate and water regulation. Thus, the local people gave positive assessment of forest quality at current time.

### **4.2. Overall evaluation of local people's role in forest development**

There is no denying the role of the local people in forest management and development. In Nghinh Tuong commune, the local people participate actively and positively in forest protection and development, which is foundation of implementing community-based forest management. However, the participants of the local people in forest management still exists both advantages and disadvantages.

### ***Advantages***

- The local people are conscious and willing to participate in forest management and protection. Their lives have depended on forests since a long time, thus, they know clearly about the local forests and have their own village regulation of forest use and protection. They also actively participated in forest contracting and forest plantation in the area. They manage large area of protection and production forests in Nghinh Tuong commune.

- The ability of cooperating among local organizations and individuals in community creates strength in forest management. The forest protection teams in different villages support each other and call the supports from local households or individuals, especial in controlling or preventing forest fires or in catching the illegal forest exploitation.

- The effectiveness of agro-forestry encourages investment from the local households and attracts development projects from outside investors. This supports local economic developments, especially forestry economics and reduces pressures on natural forests. Moreover, transporting convenience enhances the agroforestry development and trading products.

### ***Disadvantages***

- The education level of local people is not high. Most of farmers has not attended high school, thus, it is difficult for them to access new technology or give plans of financial management and development.

- The local people lacks of capital and technology. The proportion of poor households is high, thus, the financial investment of the local people is limited. Agroforestry still keep in small scales, based on their income.

- Markets of output products is limitation, thus agroforestry development still be in the household scale and depends much on outside traders.

- The advantage of commodity transport and exchange can increase the negative impacts on natural forests. The outside demands will encourage people to extract forest products for selling, causing over-exploitation of natural forests.

### ***4.3. Conclusion***

The research focuses on analysing participants of the local people in forest management and development in Nghinh Tuong commune, Vo Nhai district, Thai Nguyen province to improve the role of them in forest development toward sustainable forest management. The research showed some main following results. Three types of forests at the research area are located to forest owners, in which, the local people manage major parts of forests. The participation of the local in forest management and development at different scales (community, household and personal) promotes effectiveness of forest protection and socio-economic development. The overall assessments support for decision makers to enhance advantages and reduce disadvantages in impulsion of the local participation in sustainable forest management.

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# **LOCALS ' PARTICIPATION IN SWINE FARM POLLUTION MANAGEMENT: A CASE STUDY OF BAN DU SUBDISTRICT ADMINISTRATIVE ORGANIZATION, AT SAMAT DISTRICT, ROI ET PROVINCE**

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## **Abstract**

*The researcher study objectives; People's participation process in the management of pollution in swine farm; The advantages and disadvantages of the involvement of citizens in the management of pollution in swine farm, and The offering the participation of citizens in the management of pollution in swine farm to Bandu Subdistrict Administrative Organization At Samat District Roi Et Province.*

*The study found that the participation of the people are the advantages to manage pollution from pig farms are getting information that the community has prompted complaints from the public, both formal and informal. There are used to control pollution from pig farms are local ordinances in entrepreneurship swine B.E.2557 which announced to public knows the content is effective against swine owners and residents in the area.*

**Keywords:** The participation of citizens, Swine Farm Pollution Management.

## **1. Introduction**

People's participation is an international practice to which civilized countries pay great attention. It is also a key aspect on which the Thai society is focusing to develop complete participatory democracy where good governance exists. For good governance, the government sector provides opportunities for people and stakeholders to share perception and decision. This builds transparency and quality of the government sector's decision, and it brings acceptance from all the stakeholders. Swine farms are one of the needs of local people. In the past, the density of local population was not as high as today, so pollution from swine farms was not considered an effect on local beings. At present, there are more swine farms than in the past. They have negative effects on communities such as odor pollution which results from a vast amount of swine manure. Improper management of swine manure leaves offensive smells. These offensive smells come in forms of gases created by chemical reaction between humidity and temperature. Another

pollution is wastewater which comes from farm pigpen cleaning. A proper wastewater treatment system is needed to prevent wastewater from being drained into public and agricultural areas.

The above pollutions reflect the swine farm pollution management which has to receive participation from the local people living in the area under Ban Du Subdistrict Administrative Organization, At Samat District, Roi Et Province. In this area, there are still internal conflicts between villagers and swine farm entrepreneurs. The conflicts were generated by pollutions from the swine farm located in Moo 10 (a part of a village), Ban Ngo, Ban Du, At Samat District, Roi Et Province. In this case, the villagers of Moo 10, Ban Ngo, required Ban Du Subdistrict Administrative Organization to take both legislative and social measures in the conflict management. Therefore, this present research was done with an interest in studying the villagers' participation in the swine farm pollution management, and advantages and disadvantages of the participation, and also in guidelines for promotion and support of people's participation in swine farm pollution management.

### ***1.1 Purposes of the Research***

1. To study the villagers' participation in the swine farm pollution management.
2. To analyze advantages and disadvantages of the participation.
3. To propose guidelines for promotion and support of people's participation in swine farm pollution management.

## **2. Method**

This is a research and development study with a qualitative design. The scope of the research is as follows:

2.1 Scope of study field: the villagers and the authorities with responsibilities for the swine farm pollution management in the area under Ban Du Subdistrict Administrative Organization, At Samat District, Roi Et Province.

2.2 Scope of content: the people's participation in the swine farm pollution management.

2.3 Scope of population: the key informants selected from purposive sampling based on the authorities with official legal power in and responsibilities for the swine farm pollution management and the villagers directly affected by the swine farm pollution management. An in-depth interview was conducted to 14 key informants as follows:

(1) 4 entrepreneurs whose swine farms were located in the area under the authority of Ban Du Subdistrict Administrative Organization, At Samat District, Roi Et Province.

(2) 2 local organization officials (an administrator and an public health administration officer).

(3) 4 headmen from the villages where swine farms of 50+ swine were located.

(4) 4 villagers who were directly affected by the swine farm pollution management of Ban Du Subdistrict Administrative Organization, At Samat District, Roi Et Province.

### 3. Results

Results from the analysis of the villagers' participation in the swine farm pollution management of Ban Du Subdistrict Administrative Organization, At Samat District, Roi Et Province.

In the field study in the area of Ban Du Subdistrict Administrative Organization, At Samat District, Roi Et Province, the researcher collected data by conducting the interview with the local organization administrator and a public health administration officer, the swine farm entrepreneurs, the headmen, and the affected villagers. Also, the researcher observed and did a walkthrough survey together with the headmen in order to gain a basic understanding of the environment of and the solutions to the swine farm pollution management. The findings are presented as follows:

#### *3.1 The villagers' participation in the swine farm pollution management of Ban Du Subdistrict Administrative Organization, At Samat District, Roi Et Province*

The interview with the headman of Moo 7, Ban Du Subdistrict, revealed that the villagers were highly interested in participating in public activities, especially local traditional and religious ones. Common public activities of include Songkran Festival, house warming ceremony, New Year's Day, the Buddhist Lent Day, the End of Buddhist Lent Day, and funeral rite. These activities held the villagers' interest as they are common practices in the local community. The activities were organized by the villagers, and sometimes by projects from local government organizations. It was found that the villagers were fully willing to cooperate if the activities were useful and consistent with their ways of life.

It could be concluded that the villagers' actions of participation were categorized into 5 types.

(1) Perception: People's perception was paid attention by the local state organizations in the area of Ban Du Subdistrict Administrative Organization. Perception was created when the villagers were provided with opportunities to take part in the swine farm pollution management in the area. The villagers were allowed to perceive complaints about the pollution made by affected people. There were two channels for making complains; formal and informal. In the formal channel, complaint letters were directly sent to the local organization administrator. In the informal channel, verbal complaints were made to the headmen.

Moo 10, Ban Du Subdistrict, provided opportunities for the villagers to make complaints about the swine farm pollution. At this village, an odor pollution from the swine manure happened in 2007-2013. Also, Ban Du Subdistrict Administrative Organization has a local ordinance of swine farm entrepreneurship. This local ordinance contained rules that swine farm entrepreneurs and local people had to follow. The administrative organization published the local ordinance on its official website. Also, there were authorities that had official legal power in and responsibilities for the swine farm pollution management. Different government organizations cooperated in the pollution management. For example, At Samat District Agricultural Extension Office promoted and provided academic knowledge for the swine farm entrepreneurs through a constant project. They gave a budget

to support the project, and sent public health officers to visit the farms on a regular basis. Other government organizations in cooperation included Roi Et Provincial Agricultural Extension Office, Bank for Agriculture and Agricultural Cooperatives (At Samat Branch), a community hospital, and At Samat District Public Health Office.

(2) Opinions: A mission of Ban Du Subdistrict Administrative Organization was to build a good management system and to allow people to participate in making plans for environmental protection, development, and conservation. The interview with the headman of Moo 10, Ban Du Subdistrict, revealed that in 2013, Moo 10 villagers were affected by the improper pollution management of the swine farms. The management did not follow hygienic and academic practices. The pollution included wastewater and manure odor which brought diseases and insect pests. The Moo 10 villagers took their right to make complaints to their headman. This was an action of participation in the pollution management. To reconcile the complaints, the village committee mitigated the villagers' troublesome by adjusting the pollution management to meet appropriate principles for health and hygiene.

(3) Cooperation: The interview with the Public Health Division officer found that the Public Health Division of Ban Du Subdistrict Administrative Organization had power in and responsibilities for controlling the use of public health and environmental laws. The division's main duties covered development and improvement of public health and environmental laws, control and prevention of communicable and non-communicable diseases, control of offensive or harmful businesses, and control and prevention of nuisance and pollution. The division also published knowledge on health promotion, disease control, environment control, customer protection, and waste management.

(4) Share of benefits: The interview with a Moo 1 villager, Ban Du Subdistrict, revealed that the swine farms in the area benefited from the pollution management and helped develop the villager's livelihood. Both the entrepreneurs and the villagers gained knowledge and search for solutions to the swine farm solutions. They share opinions on needs of and appropriateness for the community. The entrepreneurs and the villagers exchanged social benefits. The entrepreneurs usually promoted and supported social activities. For example, they donated beef to the village for cooking in the traditional and religious activities. They offered credit on beef to the villagers who organized activities. In this special offer, the beef price was lower than other markets. This made it easy for the villagers to raise funds for the activities. In addition, the entrepreneurs gave swine manure for free to the villagers for agricultural purposes. They sold the swine manure only when any villager needed in a vast amount, but with a lower price than other suppliers. This type of share of benefits covered the community and the individual villagers. This swine farm pollution management resulted in self-reliance and economic security. As a consequence, Moo 10 of Ban Du Subdistrict was awarded "Thailand Healthy" Village in 2012.

(5) Assessment: The interview with the swine farm entrepreneur at Moo 11, Ban Du Subdistrict, unveiled that there was promotion of people's participation in the assessment of the swine farm pollution management. The promotion of people's participation followed the 2014 Local Ordinance of Swine Farm Entrepreneurship, item 17 which gives a right to

the villagers to freely express acceptance or unacceptance of swine farm establishment in their areas. The aim of this item was to prevent possible effects on the environment. The assessment and analysis of the swine farm pollution management was to study strong points, weak points, and guidelines for further effective performances. This assessment was conducted by Ban Du Subdistrict Administrative Organization. In the assessment, multi-assemblies had to be held for public hearings. However, it was difficult for the administrative organization to organize public hearings as the supportive budget was limited. Moreover, the number of public health administration officers was too small, compared to their extended tasks. It was, as a result, difficult to promote people's participation in the assessment of the swine farm pollution management.

### ***3.2 Analysis of advantages and disadvantages of the people's participation in the swine farm pollution management.***

The interview was conducted to 4 groups of informants; the local organization administrator and the officer with official legal power in and responsibilities for the swine farm pollution management, the headmen, the entrepreneurs, and the villagers who were directly affected by the swine farm pollution management. The results of the analysis of advantages and disadvantages of the people's participation in the swine farm pollution management are presented as follows:

It could be concluded that the villagers' actions of participation were categorized into 5 types.

3.2.1 The advantages of the people's participation in the swine farm pollution management were categorized into 5 types based on concepts of participation in swine farm pollution management.

(1) Perception: It was discovered that the villagers were highly interested in participating in public activities, especially common local traditional and religious ones. These activities held the villagers' interest as they are common practices in the local community. The activities were organized by the villagers, and sometimes by projects from local government organizations. The villagers were fully willing to cooperate if the activities were useful and consistent with their ways of life. It was apparent that the people's participation enabled them to learn from one another. They showed an exchange of experiences and viewpoints among one another. This led to acceptance of knowledge, habits, and values, which were important foundations for living together. To achieve objectives of local public activities, cooperation from all sectors was needed. This urged the people in the community to willingly take part in the local activities. This finding accorded with the previous research of Pichet Sonchareonzup (2001) who studied people's attitude towards environmental problems from pig farms at Pasak Subdistrict, Muang Lamphun District, Lamphun Province. He found that solving the environmental problems caused by the polluted or harmful business required active collaboration from all the stakeholders namely the farm owners, the affected people, and the authorities. However, in this present research, Ban Du Subdistrict Administrative Organization has a local ordinance of swine farm entrepreneurship. This local ordinance contained rules that swine farm entrepreneurs and local people had to follow.

(2) Opinions: A mission of Ban Du Subdistrict Administrative Organization was to build a good management system and to allow people to participate in making plans for environmental protection, development, and conservation. The management did not follow hygienic and academic practices. The pollution included wastewater and manure odor which brought diseases and insect pests. The affected villagers took their right to make complaints to their headman.

(3) Cooperation: It was found that the villagers expressed opinions in the public hearing on the draft of Ban Du Subdistrict Administrative Organization's 2014 Local Ordinance of Swine Farm Entrepreneurship. The main objective of the draft was to maintain the environment of swine farms to suit the local livelihood and to prevent harms and diseases from swine farms. This participation in the public hearing finally led to the legislation of the 2014 Local Ordinance of Swine Farm Entrepreneurship. This showed that the participation built a sense of both ownership of neighborhood and willing cooperation.

(4) Share of benefits: It was found in the social benefits that the entrepreneurs usually promoted and supported social activities. For example, they donated beef to the village for cooking in the traditional and religious activities. In addition, the entrepreneurs gave swine manure for free to the villagers for agricultural purposes. They sold the swine manure only when any villager needed in a vast amount, but with a lower price than other suppliers. This type of share of benefits covered the community and the individual villagers. This swine farm pollution management resulted in self-reliance and economic security.

(5) Assessment: Ban Du Subdistrict Administrative Organization's 2014 Local Ordinance of Swine Farm Entrepreneurship, item 17 gives a right to the villagers to freely express acceptance or unacceptance of swine farm establishment in their areas. The aim of this item was to prevent possible effects on the environment. The assessment and analysis of the swine farm pollution management was to study strong points, weak points, and guidelines for further effective performances.

3.2.2 The disadvantages of the people's participation in the swine farm pollution management were categorized into 5 types based on concepts of participation in swine farm pollution management.

(1) Perception: It was discovered in the area of Ban Du Subdistrict Administrative Organization that the headman tended to ignore and delay verbal complaints about the swine farm pollution. The headmen held the complaints until all the stakeholders were informed. After that, the stakeholders considered and found solutions together. Often, the complaint makers and the swine farm entrepreneurs had contradictory perspectives on the problems. This caused a delay in the complaint management process. Moreover, the stakeholders sometimes believed that the complaints were made in order to defame the opponents. Consequently, the complaints were regarded unreliable, and then the stakeholders gave less participation in the complaint management process. It was essential that the two parties of the complaints have democratic skills in terms of opinion expression and acceptance. Lack of these skills would create conflicts of thoughts. In addition, it was found that the villagers in the area of Ban Du Subdistrict Administrative Organization did

not deeply understand the content and the use of the 2014 Local Ordinance of Swine Farm Entrepreneurship. They only realized the points that were directly related to their livelihood. They were also only warned by the local ordinance that the swine farms must not give harmful effects on the villagers.

(2) Opinions: The informants revealed that multi-assemblies were made to reconcile the complaints and to mitigate the affected villagers' troublesome health and hygiene. The village committees, who were appointed by the villagers, managed the complaint process. The village committees conducted oral discussions between the complaint makers and the swine farm entrepreneurs. They had to manage several reconciliations for a complaint case. This was not good for a long-term participation due to the reason that the two parties would be tired of joining the reconciliation. They would end up with ignorance. The village committee' reconciliation would be completely useless, as a result. Similarly, inviting neutral academic experts to give suggestions was not done as they believed it would demand some large budget to organize reconciliation with experts.

(3) Cooperation: According to Ban Du Subdistrict Administrative Organization's 2014 Local Ordinance of Swine Farm Entrepreneurship, item 17 states that the headman of the village, where an entrepreneur requests to build a swine farm, shall call for a meeting of the villagers to express acceptance or unacceptance of the swine farm. In the meeting, the entrepreneur shall present environmental impact prevention measures to the villagers. Due to the promotion of people's participation in the 2014 Local Ordinance, related government organizations were aware of encouraging villagers and entrepreneurs to participate in people forums to learn possible pollutions from swine farms before accepting or unaccepting swine farms in the area. The problem was that Ban Du Subdistrict Administrative Organization had limited budget to arrange people forums to educate the locals with advantages and disadvantages from swine farms. Construction of swine farms had to be accepted by the majority of the local people. There must not be concealment of facts and decisions concerning swine farms. This was consistent with Public Health Act, B.E. 2535 (1992). In Section 31, "the Minister shall, with advice of the Committee, have powers to promulgate in the Royal Government Gazette prescribing any business being detrimental to health." Section 32 allows the local government to issue provisions rules concerning preventive measures against harm to health. In Sections 33 and 56, any person to operate such a business must have a license from the local official. Section 33 states that non-business operation does not have to receive a license, but has to follow the general conditions prescribed by the local official. Referring to Notification of the Ministry of Public Health 5/2538 (1995) dated 27 June 1995 on businesses detrimental to health, it prescribed that businesses which dealt with raising land animals were detrimental to health. The swine is a land animal. This means that raising swine for a business or a non-business, regardless of the number of swine, is detrimental to health. For this reason, the local official shall inspect the farm building, tools, equipment, hazardous waste management system, and wastewater treatment system. The local official shall not give a license to any swine farm entrepreneur who tends to drain wastewater.

(4) Share of benefits: The entrepreneurs gave swine manure for free to the villagers for agricultural purposes. They sold the swine manure only when any villager needed in a

vast amount, but with a lower price than other suppliers. This type of share of benefits covered the community and the individual villagers. This swine farm pollution management resulted in self-reliance and economic security. However, the swine farm entrepreneurs did not install a system to produce biogas from the swine manure for different purposes such as household cooking, lighting, and electrical generation. The farm manure can be utilized to produce energy and fuel. Especially, the farm with more than 500 swine can deodorize the swine manure in a biogas pond. The amount of the biogas in this pond can produce enough electrical supply for the whole farm. It is absolutely useful for farms located in non-electricity areas. Moreover, exceeding solid from the fermented manure can be turned into income and distributed to the local people. According to Department of Agricultural Extension, it is recommended that swine manure should be solved in a biogas pond. There was a project under the cooperation between the Thai-German governments. The German academics suggested the project to build a pond of 50 cubic meters for waste from the pigpen. It was found that the manure which was drained out of the pond became odorless. Due to this positive result, another pond of 30 cubic meters was built. The objective of this later pond was to produce biogas for household cooking and making a disinfection agent. The biogas in the second pond was shared by neighboring households through a pipeline.

This accorded with Suthat Siri (1997: 143-149) who stated that waste from swine farms cause huge pollutions. On the other hand, proper farm management could lessen pollutions and benefit the farm itself. A type of good farm management is biogas production. The biogas ponds vary in size, types, and cost. Biogas ponds have different fermentation quality. Biogas can be used in household cooking, gasoline engines, and electrical generators which effectively supply electricity to household appliances. This immediately lowers the electricity bill by 30-40 %. Furthermore, swine manure can be used as fertilizer, fish food, and animal food.

(5) Assessment: As mentioned above, there was promotion of people's participation in the assessment of the swine farm pollution management. The promotion of people's participation followed Ban Du Subdistrict Administrative Organization's 2014 Local Ordinance of Swine Farm Entrepreneurship. Item 17 of the Local Ordinance gives a right to the villagers to freely express acceptance or unacceptance of swine farm building in their areas. The assessment and analysis of the swine farm pollution management was to study strong points, weak points, and guidelines for further effective performances. This assessment was conducted by Ban Du Subdistrict Administrative Organization. In the assessment, multi-assemblies had to be held for public hearings. However, it was difficult for the administrative organization to organize public hearings as the supportive budget was limited. Moreover, the number of public health administration officers was too small, compared to their extended tasks.

#### **4. Discussion and Conclusion**

##### **Guidelines for people's participation in swine farm pollution management.**

The presentation of the guidelines are presented as follows:

(1) Perception: People's perception of the swine farm pollution management and complaints of the offensive pollution from the farms is important. The headman should not

ignore verbal complaints and written complaints. Both of the channels should receive equal priority. This ensures people's confidence in the participation. Also, a discussion on solutions to the pollution is needed, A group discussion can help shorten the complaint management process.

(2) Opinions: Ban Du Subdistrict Administrative Organization should set aside a budget to organize meetings to reconcile the complaints and to mitigate the affected villagers' troublesome health and hygiene. The village committees, who were appointed by the villagers, managed the complaint process. The village committees conducted oral discussions between the complaint makers and the swine farm entrepreneurs. In addition, the budget can be used to invite neutral academic experts to give suggestions.

(3) Cooperation: According to Ban Du Subdistrict Administrative Organization's 2014 Local Ordinance of Swine Farm Entrepreneurship, item 17 states that the headman of the village, where an entrepreneur requests to build a swine farm, shall call for a meeting of the villagers to express acceptance or unacceptance of the swine farm. In the meeting, the entrepreneur shall present environmental impact prevention measures to the villagers. Ban Du Subdistrict Administrative Organization should provide budgets to organize meetings, and should raise the villagers' awareness of advantages and disadvantages from swine farms in the future. Also, the administrative organization should provide knowledge and skills in reconciling people and managing complaints to village committees and community committees. This would be effective in the conflict management between the two parties.

(4) Share of benefits: The swine farm entrepreneurs did not install a system to produce biogas from the swine manure for different purposes such as household cooking, lighting, and electrical generation. The farm manure can be utilized to produce energy and fuel. It was suggested that the government sector should promote knowledge in producing biogas from swine manure so that both the villagers and the entrepreneurs can share the benefits. This would also lessen the farm pollution.

(5) Assessment: There should be more public health administration officers at Ban Du Subdistrict Administrative Organization. This position is important to control and deal with the swine fame pollution management in the local area. It also leads the people's participation in the assessment and analysis of the swine farm pollution management.

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# **BEST-PRACTICES OF WASTE MANAGEMENT IN PHANG KHON DISTRICT OF SAKON NAKHON PROVINCE, THAILAND**

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## **Abstract**

*Waste management is becoming a growing concern worldwide. It is particularly gaining increased attention in rapidly developing countries like Thailand. Finding viable solutions to counter the waste management challenge has long been a desired priority of Thai Governments. In this regard, this research aims to study the processes that have contributed to successful waste management by the local government of Phang Khon Sub-district under Phang Khon District of Sakon Nakhon Province, Thailand. The information for this research will be collected by interviewing the local government authorities of the sub-district along with literature reviews of books, journals, articles and other secondary sources related to waste management. As the study area has previously received a number of awards and recognition for its efforts in waste management, we may discover whether or not it has made any improvements to the existing processes of waste management.*

**Keywords:** Waste Management, Local Government

## **1. Introduction**

Waste management, at this moment, has become the significantly concern worldwide. Because of the environmental issue is the problem which all continents are facing while every relevant party recognize and concern. Moreover, it requires urgent solving - action since the problem is occurring at all levels - local community, municipality, metropolitan, nation, up to global - level. Many countries have begun to concern on waste management since 1972. The Human Environment Summit is the starting point for sustainable development - concept that the encouraging more environmental - concern by worldwide. Many countries had been issued serious regulations on waste management i.e. Canada: focus on reducing of unnecessary packaging waste by encouraging the public's involvement, United States of America: issues the policy of waste reduction at its origin, change the buying selective behavior to select the least waste and pollution - product, Taiwan: issues supportive law for recycle that every person response to tax as the social burden to change the behavior of consumption emphasizing on the reuse to reduce waste (Sunee Mallika and party, 2000), and California,

United States of America: announce "Zero Waste - California" goal by letting public participation of Reduce, Reuse, and Recycle in their daily life.

According to "What a Waste: a Global Review of Solid Waste Management" report, world bank mentioned that Solid Waste Management in the municipality is the most importance service that the municipality government provides for its residents in all countries among low and medium income countries. With poorly waste management could cause of severe effect on human's health, contributes to city & globe's environment and economic - system. For Thailand, local administrative organization has the significant mission to pay attention the natural resources and qualify the environmental problems on its own area.

Thailand prioritize the waste management since the signing of the World Master Plan 1992 for sustainable development or Agenda 21 during the Earth Summit on the Environment deriving to changing of Thailand's bureaucratic reformation that the local administrative organization authorize to manage the natural resources and environment. The main responsibility of the local administrative organization is solid waste management service as the basic public utility service. (Ministry of Foreign Affairs, 1994) Later in 2004, the Asean Summit on Sustainable Urban Environment define waste management strategy as Clean Land project aiming on well waste management covering collection, general and hazardous waste disposal, reducing waste and recycle, together with growing the green space in urban area including setting policy on waste management accordingly. The goal has been set through the National Economic and Social Development Plan 10 (2007 - 2011) to maintain and qualify the environment at the appropriate level for well living and not threaten to the ecology while enhancing the effectiveness of mechanism for community's waste management, electronics waste, hazardous waste, and contaminated waste. By creating business incentive to reduce and sorting out waste at its origin, support private enterprise on recycling waste, develop the collection and sorting system with basic infrastructure. Also legalize that business operators have to responsible to their product's waste applying with tax system. (The Office of the National Economy and Social Development Board) In 2009, the Zero Waste Community project had been implied by the Department of Environmental Quality Promotion. At present, the government set the solid waste management's master plan to authorize the local administrative organization being an important role on solid and hazardous waste management in the community.

Phang Khon Municipality, Phang Khon District, Sakonnakorn Province is the local administrative organization that having awarded on contributing waste management since 2009-2016 and become a prototype community on waste management. Phang Khon municipality is the local administrative organization that having policy to solving on environment earnestly and continuously since 2007. In 2011, Phang Khon Municipality had been awarded as the 1<sup>st</sup> prize of Zero Waste community from Department of Environment Quality Promotion. In 2013, they had been awarded as prototype organization for Health Quality Promotion and Environmental Health on the community participating environmental management. In 2014, they had been awarded as Good

Governance on Environment from Prime Minister's Office. In 2016, they had been awarded as earnestly continuous working organization on environment from Department of Environment Quality Promotion. From the accomplishment of Phang Khon Municipality study, to study on the accomplishment factor of contributing waste management by Phang Khon Municipality, Sakonnakorn Province, the researcher is interested to study in order to be a lesson and direction to encourage other local administrative organizations to apply the contributing waste management into their area effectively.

### **Terminology**

Waste Management means performance with waste beginning from giving information, public hearing activity, policy and mission planning, and applying process by using "3Rs" (Reduce, Reuse, and Recycle).

Local Administrative Organization means Phang Khon Municipality, Phang Khon District, Sakonnakorn Province.

### **2. Method**

To studying in well waste management by Phang Khon Municipality for gathering the circumstance of accomplishment on waste management by Phang Khon Municipality and studying of influencing factors of the accomplishment of the research methodology on qualitative research by informative collection. The information is dividing into 2 types as followings:

2.1 Primary information from collecting by exploring the area, interviewing relevant performing persons. For this article, mentioning of interview of Permanent Secretary of Phang Khon Municipality - Mr. Surachai Khanchaiyabhum

2.2 Secondary information is gathering from reports and relevant data on execution and performance on waste management by local administrative organization such as Department of Environment Quality Promotion, Pollution Control Department, other organizations and relevant articles and websites.

**Qualitative Analysis:** Researcher use data organizing which is the management process by several methods to get information orderly both physical - systematic information, easy to utilize, collection, and recall for apply when needed - and content - to classify the information-category prioritize and relativity of information to be promptly show and present systematically in conclusion, interpretation by both primary and secondary information.

To select the local administrative organization for the study, researcher select Phang Khon Municipality, Phang Khon District, Sakonnakorn Province because of the organization has well managed on contributing waste management as awarded continuously since 2009 - 2016 being the prototype community of waste management. Phang Khon Municipality is the local administrative organization having earnest environmental problem management and continuously since 2009. In 2011, Phang Khon Municipality had been awarded the first prize on zero waste community from Department

of Environmental Quality Promotion. In 2013, they had been awarded as prototype organization on health and environment promotion as prototype community on contributing environment community. In 2014, they had been awarded as Good Governance on Environment from Prime Minister's Office. And in 2016, awarded as earnestly continuous working organization on environment from Department of Environment Quality Promotion

### **3. Results**

From the inspection result integrated drive of natural resources management policy and environmental waste management and environment on the fiscal year 2016, found that the solid waste - situation in Sakonnakorn Province containing of solid waste approximately 1,040 tons per day. Solid waste from municipality/SAO is divided into 431 tons per day with service provided and 609 tons per day without service.

Phang Khon Municipality is having guidelines on waste management at its origin including sorting waste by supporting public, education institutions, business enterprises, and service providers to reduce, sorting general waste and recycle by 3Rs activity (Reduce, Reuse, Recycle). Phang Khon Municipality provides assembling places according to the principle on one third of Sakonnakorn Province. The municipality also provides proper landfill according to the sanitary one of two in Sakonnakorn Province. Phang Khon Municipality's waste management at its destination provides landfill over 50 Rai being the first solid waste disposal center of the country which setting conditions setting and supporting local administrative organization with memorandum of agreement. Each organization that would use the landfill must have executing plan and reducing waste at its origin clearly before gaining the permission to dispose solid waste at the landfill of Phang Khon Municipality in order to extend the lifetime of landfill and being part of sustainable waste management.

The well waste management of Phang Khon Municipality is aiming of good will on mutual contributing on municipal and social administrative management. Phang Khon Municipality consists of 11 communities, all communities join the zero waste community - project which the Department of Environment Quality Promotion encouraging local administrative organization since 2009. To manage solid waste in the community prioritize on the mutual contribution principle and open to public's contribution starting from decision making process with municipality continuously and equally by both direct and indirect to get initiative and consistency on the execution and capable to accomplishment on developing public's life quality and better living of public. Project which is relevant to solid waste management will be open to the public's contribution at the beginning throughout 6 contributing execution process as below:

1) Co-initiated: At the beginning, Phang Khon Municipality start by environmental and community waste management project on public's meeting within the community among committee of Ban Mai community, Nong Sa Phang community, governor, Phang Khon Municipality's officers, and officers from the Department of Environment Quality Promotion, and Resource Officer of Sakonnakorn Province in order to find pattern and process on mutual waste management.

2) Co-leadership and planning: Municipality and community-leaders join to plan the implementation for generating knowledge and recognition of the process to get accomplishment as plan through the study of community waste element. Phang Khon Municipality, the Department of Environment Quality Promotion, and Rajamangala University of Technology Isan provide training of environmental development project by community network, educational institution, community leader in the topic of "Community Waste Element"

3) Joint-investment: Municipality and public joining the investment on the activity/project in order to gain ownership from public sector such as selling waste separating bin 20L. at 10 THB per piece while the municipality buy it at 59 THB per piece, or purchasing of cement edge banding, and reusing of wasteful product i.e. use sliver as stall, creating household manure. Phang Khon Municipality performing zero bin on the road project by raising understanding about the bin and selling household bin to do the waste disposal at origin. Each household will sort its waste in the house and not put any bin at front of the house. The municipality will collect waste as appointment by the truck. The municipality provide developing project to clean up the Baan Mai community and Nong Sa Phang community is joining at the beginning period by collocation of the community road twice a month as Big Cleaning Day. People in the community join with Phang Khon Municipality's officers cutting grass and sweeping road.

4) Co-operate: Municipality and community will co-operate closely and continuously on the activity/ project by waste disposal from its origin to reduce waste for landfill, community sorting waste, municipality purchases waste as appointing on every first Thursday of every month. The place and will be indicated with members within the community. Furthermore, there is a local manure making project from sliver, grass, organic waste from food ferment in the cement edge banding. This household manure making from food waste, vegetable waste, fruit waste, grass, leaves, branches not to dispose to the waste disposal by the municipality under the zero bin on the road project. Household can sorting its waste and selling out.

5) Co-follow up and assessment: The municipality encourage the community acting on the follow up and assessment of the activity/ project time to time i.e. previously the municipality will assign its car to patrol for buying recycle waste at member's houses which consume time and resources. Later, the community assessment and decide to set the mutual place for gathering those waste instead.

6) Acquisition benefit from those projects: The municipality accomplish the generating consciousness about 3Rs (Reduce Reuse Recycle) for public and reduce waste to be filled at the municipality's landfill while public sector gain as revenue. Phang Khon Municipality performs the "Collecting waste Gaining revenue Saving future" project for funeral aid which derive as benefit for member of the project. In case a people in the member's family pass away, there will be a 5,000 THB aid per time with the condition that the member could not get cash until the member accumulate their account at 300 THB and being a member at least 6 month continuously in order to receive the funeral aid benefit.

According to the project performance, the community getting better environment and health, also roads are cleaned.

The operating project on waste management by Phang Khon Municipality could be managed effectively by gaining mutual contribution of Phang Khon Municipality, public sector in the community, relevant organizations, and relevant persons whereas well waste management factors of Phang Khon Municipality contain of followings:

Internal Factors: **Administration** of Phan Khon Municipality, contributing of the policy and mission setting, mutual execution among direct response organization and personnel through execution of activity/ project, public relation, equipment machine vehicle availability, place, budget and expenses. **Social**, Phang Khon Municipality and community co-setting plan, policy, and process supporting the community to be zero waste community. Also, the communities contributing on reduce, reuse, and recycle project (3Rs), organic - recycle - general and hazardous waste management activities, and encouraging the discipline on general waste management within the community. Phang Khon Municipality has earnestly and wisely support with boundary budget by gaining the mutual contribution from organization networks, working and supporting closely with local community with dramatically development by bringing the community leaders to field trip from other local administrative organizations that success and selects the project which suitable with its culture and precise need of local community.

External Factor is another factor that enhances the waste management's accomplishment by Phang Khon Municipality containing of government policy, cooperation from external organization to support the zero waste community. To performing each project, Phang Khon Municipality together with community allocate the job distribution i.e. waste bank activity, hazardous waste for point, central manure making. Moreover, competition among organizations can be count as another factor to the accomplishment of waste management with zero waste community - competition by the Department of Environment Quality Promotion, Ministry of Natural Resources and Environment has been an important motivation for community and local administrative organization to earnestly cooperate and accomplished.

#### **4. Discussion and Conclusion**

Local Administrative Organization could be counting as the local operating organization who plays important role on general and hazardous waste management in the community since sorting at origin until its destination. According with the master plan for solid waste management (2016 - 2021), the importance is given to local administrative organization as a success factor. It is an important implementation unit to deliver the practice and operation of solid and hazardous waste management according to the principle starting of sorting solid and hazardous community waste at origin, transportation, up to the solid waste disposal, hazardous and contaminated waste, including the solid waste disposal according to the principle (Pollution Control Department, 2016 page 25) likewise, the co-operating among government organizations, private business, and public sector.

Waste management of Phang Khon Municipality has been accomplished due to the mutual contribution of public sector agreeable with Tiwa Prasuwan, (2016) from studying of contributing waste management from local administrative organization and community in Tambol Baan Laeng, Muang Rayong District, Rayong Province. Found that the pattern and method of contribution solid waste management of Tambol Baan Laeng, Muang Rayong District, Rayong Province should require integration from local administrative organizations in the community with private business by using appropriate solid waste management in the community with promotion to sorting waste. Additionally, Study of Siwaporn Sirijarmorn and Chamlong Phoboon (2010) on good governance on environment management by local administrative organization: a case study of Muang Sri Racha Municipality, Chonburi Province found that environment management of local administrative organization need the principle of contribution while the local administrative organization comprise the contribution from all aspects and supporting the public in the decision-making and development process.

Nevertheless, Phang Khon Municipality is the only local administrative organization of Sakonnakorn Province that have a place for mutual hazardous waste for the community (master plan of nation - solid waste management 2016 - 2021) performing through the hazardous waste for point project. Phang Khon Municipality collecting hazardous waste from the hazardous waste for point project from community and dispose by the removal of fluorescent lamp from Dr. Somsak Pitaksanurat, Faculty of Public Health, Khon Kaen University. Together with community activity of sorting waste at origin particularly on hazardous waste along the Collecting waste Gaining revenue Safe future, hazardous waste for point projects.

Sustainable and developing contribution procedure of community by Phang Khon Municipality emphasize on the project which have mutual benefits i.e. Gaining revenue and funeral aid benefit from selling recycle waste, sorting hazardous waste for point by household, also facilitation the community members to participate the activity more easy, less time consumption, and importantly to select the community from volunteer basis joining the municipality's activity without forcing. This could be a factor that leads to the sustainability because most people in the community are interested to join the project especially, leading members in the community will be the push forward to success. (Department of Environment Quality Promotion, Manual for Zero Waste community 2011)

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# HOUSEHOLDS' WILLINGNESS TO PAY FOR IMPROVED MUNICIPAL SOLID WASTE MANAGEMENT: THE CASE OF NHAN CHINH WARD, THANH XUAN DISTRICT, HA NOI CAPITAL

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## Abstract

*Like many other cities, municipal solid waste management in Ha Noi capital has to face up with a wide range of challenges due to economic growth, population expansion and booming urbanization. One of its difficulties is a lack of financial resources to provide needed infrastructure for municipal solid waste management. This paper uses a survey of 385 randomly selected households in Nhan Chinh ward to assess the willingness to pay (WTP) of households for improved municipal solid waste management. The Tobit regression reveals that income, years of schooling, gender, age and size of households are factors determining the WTP. Results of the survey in study site estimates the WTP of households to be VND 35,000/ household/ month. This can be considered as an important implication for the Government in setting more appropriate fees to share the budgetary burden as providing public services in Ha Noi.*

**Keywords:** *Municipal Solid Waste, Solid Waste, Willingness to Pay*

## 1. Introduction

Since Vietnam implemented its Renovation (Doi moi) policy, Hanoi capital has witnessed rapid economic growth, population expansion urbanization. In the period of 2006 - 2016, its average economic growth rate has reached approximately 9.5% per year, 1.5 times higher than that of the whole country. In 2010, the urbanization rate in Ha Noi has been 30 - 32% and it is projected to reach 55 - 65% by 2020. The population of Hanoi has grown rapidly with a population of 2.0 million people in 1990 to 7.5 million in 2016, an increase of 3.7 fold (Hanoi Statistical Office, 2017). Like many other cities in developing countries, rapid urbanization, increasing immigration from rural areas, industrialization, and economic growth have put a strong pressure on urban environment. In 2016, the total amount of municipal solid waste (MSW) generated in Hanoi is about 6,500,000 tonnes per year, 3 times higher than this in 2006 (Urban Environment Company - URENCO 2017). However, due to lack of human and financial resources, only 75 percent of this waste is collected and disposed to landfill. The remaining 25 percent is either improperly disposed of into open dumpsites or illegally thrown to the city's roads, rivers and lakes, causing negative impacts on environment and community's health.

According to Decision 54/QĐ-UBND/2016 by the Hanoi People Committee, waste collection fees (called *sanitation fee*) in Hanoi differ based on the type of dwelling. Waste fees are set at VND 6,000/ person/ month (USD 0.27) for households in urban districts and VND 3,000/ person/ month (USD 0.14) for those who live in sub-urban areas. However, the fees collected can only cover about 50 percent of the expenditures for operation and maintenance of MSW collection and disposal. Capital costs such as equipment purchases and upgrades cannot be met by these fees and hence mostly taken from ODA fund (Thanh, 2011). For long time, the financial shortage is a major challenge that creates negative impacts on sustainability of municipal solid waste management (MSWM) system.

According to the Decree on Solid Waste Management (SWM) by the Prime Minister (2007), one of the important objectives of SWM in Vietnam is that in the near future, users will pay the full cost of services. Although in 2013, the sanitation fees in Hanoi increased by double than those in 2007, the rapid expansion and urbanization of Hanoi have resulted in the fact that the local Government cannot provide the MSWM services for all households.. Facing this situation, the Hanoi People Committee is having a plan to increase the current sanitation fee to cover the operating cost and allow for adequate funding for future waste service improvement, hence phasing out subsidies and becoming less financially dependent on ODA assistance.

This study is proposed with aims to generate empirical evidence that will inform decision makers about the current move to a new fee system in Hanoi. This paper assess the willingness to pay (WTP) of households for improved MSWM. This can be considered as an important suggestion for the Government in setting more appropriate fees to share the budgetary burden as providing public services in Ha Noi.

## **2. Method**

### ***2.1. Selection of Study Area***

Nhan Chinh is one of the ward which belongs to Thanh Xuan district, Ha Noi. A high economic growth rate and population boom lead to an increase of MSW generation. Together with the urbanization process, the households' demand for MSWM has increased in terms of quantity and quality of services. In 2000, the Hanoi People's Committee initiated the socializing policy in waste management and approved a pilot project of socializing waste collection and transport in some parts of Hanoi. Thanh Cong Co-operative was assigned by the city to collect and transport waste in Thanh Xuan district. Since 2004, the partnership between community and the Co-operative has been set up to take over MSWM in Nhan Chinh ward. According to the Ministry of Natural Resources and Environment (2009), this model is a typical one that has been implemented quite effectively in Hanoi over past years.

### ***2.2. Data Collection***

#### **\* Secondary data**

In this research, the author uses the survey data named *Vietnam Household Living Standard Survey* (VHLSS). This survey has been conducted by the General Statistics

Office (GSO) with a bi-annual period to assess living standards for policy - making and socio - economic development planning. So far, eight surveys have been done in year of 2002, 2004, 2006, 2008, 2010, 2012, 2014 and 2016. In the paper, household level data of Hanoi is used in the period of 2006 - 2016.

**\* Primary data**

In the research, quantitative information was collected through surveys using pre-designed questionnaires. The questionnaire was developed to collect quantitative information at the household level. The survey in Nhan Chinh ward is conducted in September and October 2016.

*Subjects of information:* To collect information, the subjects providing information include:

- (i) Households: they use the MSW services of collecting and transporting in the study area.
- (ii) Thanh Cong Co-operative: this is a stakeholder providing MSW collection/ transportation services in Nhan Chinh ward.
- (iii) Representative of People's Committee of Nhan Chinh Ward.

*Sample Scale:* To achieve objectives of the research, Robert Slovin's popular formula has been used. According to Phouphet Kyophilavong (2011), this formula can be used to estimate samples for valuation studies. Survey sample is determined as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = Sample size

N = Total number of households in a study site

e = Accepted error

According to the above formula, with N = 10.773 and e is 0.05 (5%), the sample size in Nhan Chinh is 385 households. After conducting the survey, some of the receipts were removed. In Nhan Chinh, 385 questionnaires were sent out, of which 19 were not filled in, and 8 were misinterpreted. After filtering out the questionnaire, the valid votes were 358. The reliability of the questionnaires was acceptable as sampling procedures were in accordance with statistical principles. The questionnaire design and conduct of the survey attempt to ensure that the questionnaire is designed appropriately, that the respondents understand the questions. Based on the principles of statistics, results of the survey in Nhan Chinh can provide a certain level of confidence.

**Table 1: Size of survey sample in Nhan Chinh ward**

Items	Number of households
Population	10.773
Sample size	385

*Source: Calculated by the author*

*Sampling method:* After determining the sample size, households were selected by stratified sampling with the following procedures:

- *Firstly*, based on the administrative units, the population in Nhan Chinh is divided into 59 groups.

- *Secondly*, in each group, the number of observations is selected corresponding to the proportion of the population as a whole.

- *Thirdly*, households in each group were selected randomly basing on the list of households provided by the People's Committee in Nhan Chinh.

*Information collection:* Due to the large sample size, the research received great support from the members of the Nhan Chinh Women's Union in interviewing and collecting the questionnaires. Two (2) members and six (6) students have been trained to conduct the household survey. However, there were some limitations and mistakes during the interview so some votes were eliminated.

*Survey content:* Households in the study site were interviewed with the following information groups. First, the general household information group, including information on age, sex, education, occupation and income. Secondly, information on MSWM at the household level. Thirdly, information on household perceptions on MSWM system. Fourthly, information on their WTP to improve the MSWM system.

### **2.3. Research Method**

Contingent Valuation Method (CVM) was chosen by the author to estimate the households' WTP for positive changes in MSWM service. This is the most commonly used technique for calculating the non - use value of the environment. Although there is a lot of criticism regarding the assumptions during the survey and scenario development; so far, scientists have relied on this approach to estimate the non - use value. Evaluation process is as follows:

(i) *Focus group discussions - FDGs:* To develop the questionnaire matching with current status of study site, two group FDGs were held in August 2016. (1) The first FDGs was conducted with representatives of local authorities and service providers. The content of the discussion focuses on two main issues: (i) difficulties and obstacles that the local MSWM system is facing; (ii) proposals/solutions to improve the quality of these services. This is important information for the author to build and complete the scenarios. (2) The second FDGs was conducted with 8 households in the study area. The households were asked three main contents, including: (i) the status quo and their evaluation of the quality of local MSWM services; (ii) households' perceptions about the impact MSW on health and environment; (iii) their desire to improve services of MSW collecting and transporting. The information from the two FDGs will be integrated for developing scenarios that are appropriate to the local conditions. Also in the same discussion, participants were asked whether they would be willing to pay for this improvement. Individuals who answer "Yes" will be asked about their WTP for one month. To determine the number of payment levels and the reasonable gap among levels, open - ended questions were used to ask the

households for "highest WTP for improvement of MSWM services". After FGDs with 8 households, 5 WTP levels were determined, including: VND 5,000; VND 10,000; VND 20,000; VND 25,000 and VND 30,000. From these levels, the band of WTP was modified and designed as a payment card in the questionnaire.

(ii) *Pre-test*: To improve the questionnaire, especially the levels of WTP, the author has conducted a pilot survey of 15 households in the study area. At the pilot, WTP levels in FGDs were used. However, the respondents also were asked open - ended questions about WTP levels for self-expression. As a result, out of the 20 WTP levels designed, eight WTP levels were selected, bringing the total payout level to 13. Based on that, the WTP is designed in the payment card in ascending order with the lowest payout of VND 0 and the highest of over VND 65,000.

(iii) *Models and factors influencing WTP*: According to Nkansah (2015), the Tobit model was developed by Tobin in 1958 and is used to assess WTP levels for improving the MSWM. Because the WTP in the study was limited to 0 to 13 or the dependent variable was in the form of censored data, the Tobit model was also used to estimate factors affecting the WTP levels of the households in Nhan Chinh area. The maximum likelihood estimation from the Tobit model using the Maximal Likelihood (ML) model results in better estimates than the OLS method. The Tobit model is presented as follows:

$$Y_i = \begin{cases} y_1^* & = \beta X_i + u_i^{(*)} \\ 0 & (**) \end{cases}$$

Case (\*) If  $y_1^* > 0$

And (\*\*) If  $y_1^* \leq 0$

Where: Y is the dependent variable. In this study, Y is WTP levels encoded from 0 (not WTP) and gradually increased by the WTP.

-  $\beta$ : The regression coefficient of the model

-  $u_i$ : The error

-  $X_i$ : Independent variables

A number of studies conducted in developing countries show that WTP levels for improving MSWM services are influenced by factors, such as: age, income, household size, household education (Pek Chuen-Khee and Othman 2010). Therefore, these factors were selected to construct independent variables in the regression model. In this study, the Tobit model is written in the following form:

$$WTP_i = \beta_0 + \beta_1 \text{LnIncome}_i + \beta_2 \text{Gender}_i + \beta_3 \text{Yrschool}_i + \beta_4 \text{Size}_i + \beta_5 \text{Age}_i + e_i$$

Therein, WTP is a dependent variable limited between 0 and 13;  $i$  is the index of the  $i$  th household in the survey sample; LnIncome is the logarithm of household income; Gender is a dummy variable that accepts 1 if the respondent is female, 0 if the respondent is male; Yrschool is the years of schooling of the respondent, Size is the number of people in the household, Age is the age of the respondent.

(iv) *Hypotheses*: Based on the literature review, there are two assumptions in the research model.

- *Firstly*, the factors that have positive influences on WTP:

+ **Income**: One of the goals of SWM is to improve the quality of the environment. The theory of demand for environmental goods suggests that the higher the income, the greater the demand for environmental quality (Tietenberg, 2010). Hence, households with high income are expected to have a higher WTP for environmental goods and services.

+ **Education**: People with higher education will often have a better understanding of the environment, about the potential impacts of MSWM on health and environmental components. As a result, their payments will be higher.

+ **Age**: In previous models, older people will have better experience and understanding of the need/ importance of environmental quality. Therefore, the relationship between age and WTP is expected to be positive.

+ **Gender**: Traditionally, the mindset of households in developing countries implies that women play a major role in the implementation of activities related to domestic waste. It is expected that they will be able to pay higher for improving MSWM service.

- *Secondly*, the factors those have opposite effects on WTP:

+ **Household size**: When a household has more people, it is more expensive to spend on primary activities and less on extra support (eg: environmental quality). Household heads will consider spending on environmental services because households are under increasing pressure to spend on other essential activities. The level of WTP for environmental goods/ services tends to decrease, so household size is assessed to be negatively correlated with the WTP level (Ezebilo, E.E 2013).

### **3. Results**

#### ***3.1. Status of municipal solid waste management in Nhan Chinh***

The model of MSWM in Nhan Chinh is the typical one which is the partnership between community and enterprises/cooperatives. In this model, stakeholders include: (i) Thanh Cong Cooperative; (ii) community of Nhan Chinh ward; (iii) community-based organizations (CBOs); and (iv) local government.

- (i) Thanh Cong co-operative was established in 2000 by the People's Committee of Thanh Xuan District for environmental sanitation. Thanh Cong is the first enterprise to pilot the social mobilization project in garbage collection and transportation. At the end of 2004, with the agreement of the Department of Transport and Public Works and the Hanoi Department of Construction, the Cooperative cooperated with the community to carry out the MSW collection and transportation in Nhan Chinh. In this model, Thanh Cong Cooperative is the provider of 2 services: (i) waste collection services and (ii) waste transport services for households, schools, markets in the ward. For households, the Cooperative collects MSW at home twice a day. The waste volume was collected at 13 points specified by the ward. After that, the waste trucks of the Cooperative will be

transported to the Nam Son landfill of the city with the frequency once a day. Thanh Cong is responsible for reporting monthly service results to the Nhan Chinh People's Committee and CBOs. At the same time, the Cooperative is also under the supervision of these two organizations when providing collection and transportation services.

- (ii) The second subject is the local community. Local communities include the entire population living in the ward using the services of Thanh Cong Cooperative. The community is responsible for paying the fee to the service provider. They also have the right to inform the quality of services provided by Thanh Cong Cooperative and feedback on the current state of the local environment.

(iii) The third subject is Community Based Organization (CBOs). This is an organization that is inherited from the history of the community-based waste management model. At present, the structure of the organization consists of: (1) the heads of groups in the ward, and (2) the chairman of the Women's union. CBOs is an organization that represents the interests and voices of the community. This organization is responsible for reflecting the state of the environment, transmitting citizens' feedback on the quality of collection / transportation services to the service provider and coordinating with the local authority to monitor the suppliers' activities.

(iv) The last subject is the People's Committee of Nhan Chinh Ward. This is the local representative of government, which is responsible for monitoring the quality of collection and transportation services to ensure environmental and legal compliance.

### **3.2. Socioeconomic profile of respondents**

In Nhan Chinh area, the average WTP of households reached 6.48; equivalent to VND 35,000/ household/ month; the lowest WTP is 0 (not willing to pay) and the highest is 13 (over VND 65,000 per month). Average monthly income is VND 21,100,000 (logarith 9,86). The average years of schooling of the heads' households surveyed was 8.98 years. This result is higher than average years of schooling in the country of 6.7 years calculated from the VHLSS survey in 2016. The average age of the respondents was 35.63 and the number of respondents was female accounting for 42%.

**Table 2: Statistical Description of variables**

<b>Variable</b>	<b>Explanation</b>	<b>Observation</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
WTP	Willingness to pay	358	6.48	3.60	0.00	13.00
LnIncome	Logarit (Average income)	358	9.86	0.60	8.29	10.31
Gender	Female if the value is 1, male if the value is 0	358	0.42	0.49	0	1
Schooling	Years of schooling	358	8.98	1.64	4	19
Size	Numbers of household members	358	3.79	1.33	1	6
Age	Age of respondents	358	35.63	2.79	28	44

*Source: Calculated from the survey by author*

With a scale of 358 households surveyed in Nhan Chinh, WTP levels were coded from 0 (willingness to pay) and gradually increased by the amount of willingness to pay are detailed in the table below.

**Table 3: Distribution of households' willingness to pay in Nhan Chinh ward**

Level	Willingness to pay	Nhan Chinh	
		Number of households	%
0	No Willingness to pay	33	9.22
1	5,000 VND/month	8	2.23
2	10,000 VND/month	8	2.23
3	15,000 VND/month	21	5.87
4	20,000 VND/month	28	7.82
5	25,000 VND/month	30	8.38
6	30,000 VND/month	52	14.53
7	35,000 VND/month	61	17.04
8	40,000 VND/month	31	8.66
9	45,000 VND/month	16	4.47
10	50,000 VND/month	19	5.31
11	55,000 VND/month	3	0.84
12	60,000 VND/month	23	6.42
13	> 65,000 VND/month	25	6.98
	Total	0	0.00

*Source: Calculated from the survey by author*

Result from survey in Nhan Chinh area shows that 9.22% of households are not willing to pay at any fee. The highest percentage of households' WTP is at 7 level, equivalent to VND 35,000/ household/ month, reaching the highest level of 17.04%. Some households are willing to pay higher to improve the MSWM services; however, this rate declined as fees increased.

### ***3.3.Factors detemining households' Willingness to pay***

Since the dependent variable is the coded WTP level from 0 to 13 as described above, the Tobit regression model is used to estimate the dependent variable model, which overcomes the problem that the dependent variable may be outside the range of values from 0 to 13. The study identifies this coefficient for the Tobit model as follows:

**Table 4: Results of willingness to pay model estimation**

VARIABLES	Nhan Chinh model
LnIncome	1.879*** (0.463)
Gender (female)	1.878*** (0.574)
Yrschool	0.330* (0.168)
Size	-1.457*** (0.221)
Age	0.209** (0.0956)
Sigma	4.837*** (0.220)
Constant	-14.30*** (5.293)
Observations	358

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

*Source: Compiled from the survey by author*

The estimating coefficients are nonzero with statistical reliability at 90%, 95% and 99%. The value  $P > t$  of all variables of LnIncome (Logarithm of per capita income), Gender, Size are less than 0.05.

- *LnIncome variable*: coefficient of LnIncome is 1.879. The positive sign of the estimating coefficients indicates that when the income increases, the WTP also increases. The coefficient of 1.879 shows that: as other factors being constant, if the average household income increases by 1%, the WTP increases by 1.879 level. It means that when the average income is VND 21,100,000/ month, if it increases 1%, the WTP increased from 6.48 to 8.35 level (equivalent to VND 45,000/ month). This shows that if households' income goes up, their demand for environmental quality is higher. Therefore, when the income is high, households tend to be willing to pay higher for goods and services environment.

- *Gender variable*: Results of the model show that women are more likely to accept payment than men (coefficient of 1.878 is statistically significant). According to Ezebilo (2013), this is also consistent with the traditions of developing countries where women

often take responsibility for the care of household waste. Therefore, they are expected to be able to pay higher for improving the MSWM services.

- *Yrschool variable*: The coefficient for the years of schooling variable is 0.330. The positive sign of the estimating coefficient implies that the educational background is positive proportion with its WTP. This result is consistent with Zerbock's result (2003). His research claims that people with higher levels of education are probably willing to spend more for improving SWM services because they understand the benefits and importance of SWM system.

- *Household size variable*: The coefficient of the variable is negative, implying that when households' size is large (consist of many people), their WTP tends to decrease. Householders believe that WTP may add the burden on family spending. Therefore, the increase of household population will reduce WTP. This result is supported by the study of Nkansah E. (2015).

- *Age variable*: This variable is statistically significant reliability at 95%. The estimating coefficient of age variables with positive sign indicates that people of older age have better awareness of environmental protection.

Based on the characteristics of the variables of the WTP model, such as average household income, education level, gender, age, and household size, the study identified WTP Predicted from the model for each observation in the sample. This determines the average WTP.

The average WTP in Nhan Chinh is 6.48, equivalent to VND 35,000/ household/ month. With the number of households in each area, financial sources can be mobilized from the community as defined in Table 5. This can be seen as a potential source of funding from the community to share limited government budgets; solving financial difficulties in the MSWM model and improving the quality of SWM services.

**Bảng 5: Average WTP of the households in Nhan Chinh ward**

Study sites	Level of WTP (VND/household/month)	Total households (household)	Total WTP (VND/month)	Total WTP (VND/year)
Nhan Chinh	35.000	10.773	377.055.000	4.524.660.000

*Source: Compiled from the survey by author*

#### **4. Implications and Conclusion**

- *Implication for amount of sanitation fee*: In the period of 2006 - 2016, the sanitary fee has been adjusted from VND 3,000/ person/ month in the inner city in 2007 to VND 6,000/ person/ month in 2013. Although the fee has been increased 100%, it can be seen that the adjustment period is quite long, about 6 years. From VHLSS survey, it can be calculated that the fee rate represents a relatively small percentage of total household income and is on the downward trend. The sanitary fee in Hanoi accounts for 0.1 - 0.2% of total household income, and go down from 0.230% in 2006 to 0.169 in 2016. This implies that the total amount of sanitation fees is increasing more slowly than the household's

income in the period of 2006 - 2016. Results from countries surveyed by UN - Habitat (2010) show that average fees in cities account for approximately 1% of households' income. It is clear that this ratio in Ha Noi is quite low as comparing this rate in other countries.

Results from the survey in Nhan Chinh point that the average WTP was VND 35,000/ household/ month. Thus, the WTP of households is 1.5 to 2 times higher than the current fee. Based on the WTP of the households and the general level of coverage in other countries, this study proposes to increase the level of sanitation fee by 1.5 times. Specifically, for urban area, the sanitary fee is set up at VND 9,000/ person/ month.

Sanitary fee should be adjusted periodically from 2 to 3 years in order to match with economic growth and the need to improve the quality of public services. In the future, the fee will be adjusted according to the Government's objective of covering total cost of solid waste management (including cost of collection, transportation and handling).

- *Implication for method of fee collection:* Environmental goods and services is considered as public goods. So, if the households do not pay the fee, they can still throw garbage in the empty land and collection activities are still required because garbage can cause negative externalities. The experience of some communities in Indonesia shows that if sanitation fee is linked to electricity bills, the share of households paying for fee will be higher. If the household does not pay the cleaning fee, they will be cut off electricity or water. In fact, Vietnamese Government has been integrating wastewater tariffs on water bills. Therefore, integrating sanitation fee into the utility bill is completely feasible.

### ***Conclusion***

Impressive economic growth, population expansion, and strong urbanization have been the overall picture of Vietnam in general, and Hanoi in particular over time. This context has placed the MSWM in the face of many difficulties and challenges in the face of increasing pressure to manage waste volumes both in terms of quantity and toxic level. Meanwhile, the capacity of the government sector is limited due to the lack of human resources, finance and equipment. As a result, promoting the role of people and civil society organizations opened up a new trend, contributing to reducing the burden on the public sector. The results of a survey of 385 households identify the households' WTP to be VND 35,000/ household/ month at Nhan Chinh. This can be seen as a potential source of funding from the community to share the budget burden with the Government. It is also a "button to remove" financial difficulties in MSWM system and to improve the quality of MSWM services in Ha Noi.

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## **PART 6. BUSINESS AND MANAGEMENT**



# OVERVIEW OF VIET NAM ENTERPRISE DEVELOPMENT IN THE PERIOD 2011 - 2017

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## **Abstract**

*The article accesses the development status and the role of different sectors in Vietnam for the period 2011-2017. The results show that enterprises operating in Vietnam have had strong development steps in this period. The article also identifies the limitations of the business sector, especially for private firms, in terms of quantity, size and ownership, and identifies key shortcomings and constraints from the enterprise itself and the inadequacies in the state management to the enterprise sector.*

**Keywords:** *ROA, ROE, SMEs, PEs, Vietnam enterprises.*

## **1. Introduction**

Enterprise is seen as particularly important in the economic development, and it represents the major contribution to gross domestic product (GDP). In recent years, the activities of enterprises have made remarkable progress, contributing to the development of production capacity, mobilizing and promoting internal resources for socio-economic development, contributing to economic growth and recovery, increasing export turnover, budget revenue and effectively solving social problems such as job creations, hunger eradication and poverty reduction.

In 2017, economic growth reaches 6.81%. After the difficulties of bottoming out in 2012, it is showing quite the economy continues stable growth, always above the average growth rate in the period 2011 - 2017. The enterprise sector contributes about 60% economic growth. Therefore, it is very important to help enterprises and policy makers understand enterprises development so that enterprises can get process orientation and get access to investment opportunities. It also serves as a basis for the government to make policies to treat all business sectors equally, especially the private sector and small and medium sized enterprises (SMEs). Therefore, the study focuses current state of enterprises in the period 2011-2016, and shows the role of each business sector in the economy as well as finds the limitations and causes of these restrictions in the corporate sector. The study approaches to combining the annual survey data of the GSO with the latest survey data in 2017.

In addition to the introduction and reference, the structure of the study included three different categories. Section 2 presents the research methodology. Section 3 evaluates research results. Section 4 is the main conclusion.

## 2. Method

The research will use basic qualitative methods such as statistics, description, synthesis and comparison. The assessment of the development of Vietnamese enterprises is shown by the characteristics of the enterprise (the number of enterprises currently, the structure of enterprises by size and ownership, the business results of the enterprise business; at the same time, assess the role of different business sectors in the economy). This shows the limitations of the business sector and the causes of these limitations.

## 3. Results

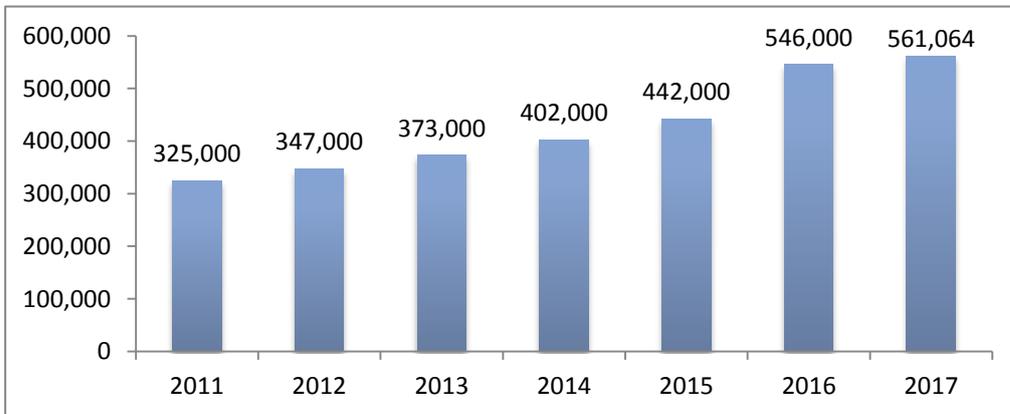
### 3.1. The development process of Vietnamese enterprises

#### Characteristics of enterprises

##### *The number of enterprises*

**Figure 1: Number of enterprises between 2011 and 2017**

*Unit: number of enterprises*

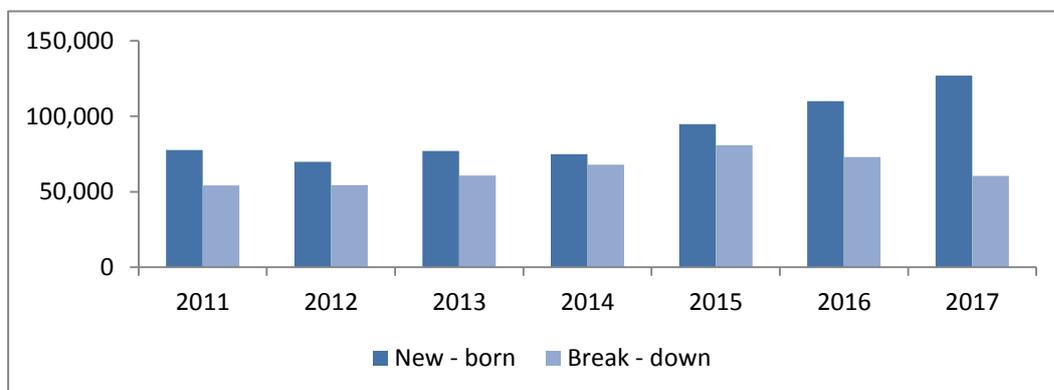


*Source: General Statistics Office of Vietnam (GSO)*

Since the Enterprise Law 2015 took full effects with more flexible terms regarding to business registration, the number of enterprises has increased steadily. According to GSO, there were more than 325,000 enterprises operating in 2012, but in 2017 this number nearly doubled to more than 546,000 and up 11.1 % compared to 2016. The number of enterprises in the period from 2011 to 2016 grew by an average of 9.73% of the total per year.

**Figure 2: Number of newly registered enterprises and enterprises that stop operation**

*Unit: number of enterprises*



*Source: General Statistics Office of Vietnam (GSO)*

In 2017, the number of newly established enterprises nationwide reached the highest record ever with 126,859 enterprises, which increased 1.6 times compared to 2011. On average, 90,106 new enterprises were established each year during the period 2011 - 2017. However, in 2017 the number of enterprises suspended from operation was 60,553, a decrease of 20% compared to 2016. Figure 1.2 shows the gap between the number of newly established enterprises compared to the number of enterprises that have to stop operating has increased since 2014. This result shows that the difficulties faced by enterprises are growing, especially for start-ups.

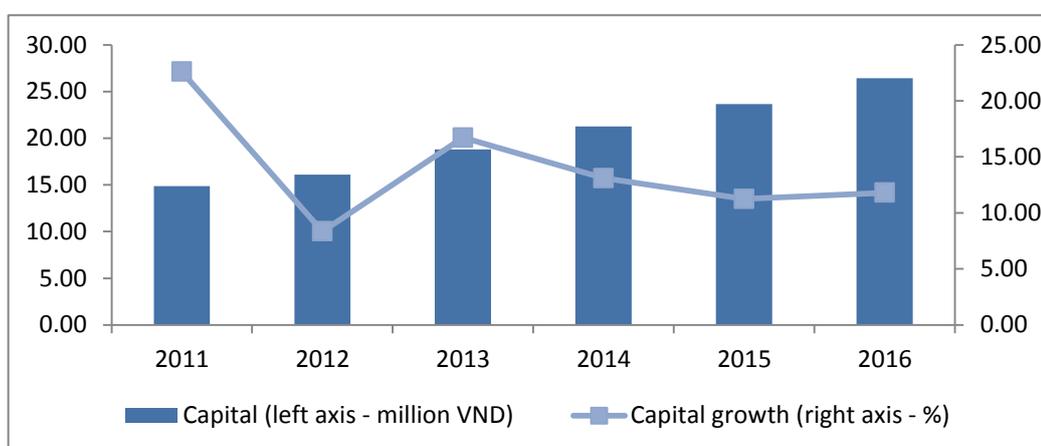
**Table 1: Allocation of enterprises by labour size and ownership form in 2016**

		Ownership form			Total		
		SOEs	PEs	FIEs			
Size		Number (E)	1,028	495,259	1,482	497,769	
	SMEs	Percentage by line (%)	0.21	99.5	0.3	96.77	
		Percentage by column(%)	28.16	97.75	36.1		
	LEs		Quantity (E)	2,623	11,387	2,623	16,633
		Percentage by line (%)	15.77	68.46	15.77	3.23	
		Percentage by column (%)	71.84	2.25	63.9		
Total		Quantity (E)	3,651	506,646	4,105	514,402	
		Ratio (%)	0.71	98.49	0.8		

*Source: Data processing from the GSO enterprises survey in 2016*

Table 1 shows that 99% of private enterprises are SMEs, but only 2.25% are large private firms. This is a noteworthy point for policymakers to support private enterprises as well as SMEs, which have not received proper attention in the past. SOEs account for only 0.71% of the total number of enterprises but large enterprises contribute 71.84% and SMEs account for 28.16%, while the percentage of FDI enterprises is 0.80% with 63.90% large enterprises.

**Figure 3: Total capital in the period 2011-2016**



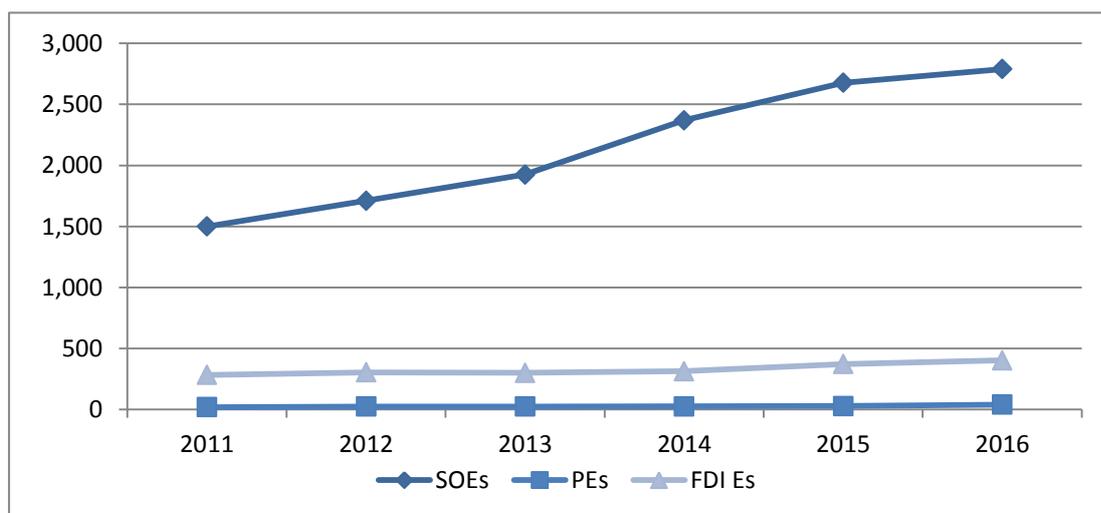
*Source: Data processing from the GSO annual enterprises survey*

Total capital of enterprises in the economy in this period increased 1.78 times, from 14.86 trillion in 2011 to 26.43 trillion in 2016, with the average growth rate of about 13.75% / year (Figure 3). According to the GSO, the total registered capital of new businesses is estimated at VND 1300 billion in 2017, an increase of 45.4% compared to 2016. In the period 2011 - 2017, the capital growth rate is always higher than the growth rate in the number of enterprises, which shows that the growth in capital size of enterprises has been increasing. The average capital of enterprises has increased 1.5 times, from VND37.4 billion in 2011 to VND45 billion in 2016, corresponding to the size of the enterprise by capital criteria.

The increase in capital scale takes place in all three types of enterprises; in which SOE sector take the lead. SOEs have the highest average capital scale, which is 6 times higher than the average capital scale of FDI enterprises and 87 times higher than the average capital scale of private enterprises. FDI enterprises and private enterprises have the same average growth rate of capital, increasing 1.5 times in 2011-2016. As such, the increase in scale of capital has helped small and medium enterprises transition from small capital to medium capital scale, while SOEs and FDI enterprises still have large capital scale. However, it also shows that private firms in Vietnam now have a small capital scale.

**Figure 4: Average capital size of enterprises in the period 2011-2016**

*Unit : VND billion*



*Source: Data processing from the GSO annual enterprises survey*

### **Business performance of enterprises**

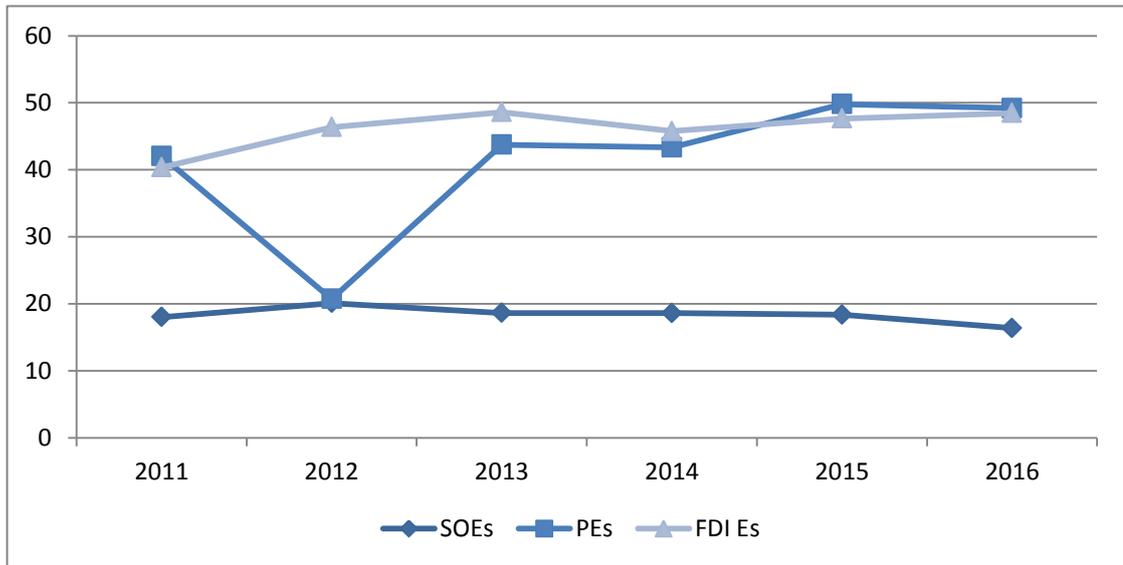
#### *Loss-making enterprises in the period 2011 - 2016*

Apart from the remarkable achievements in the number of enterprises or the capital scale, the enterprises production and business results have not been improved at a sufficient level. The rate of business making losses in the period 2012-2016 continuously increases and by 2016 this rate went up to 48.47% of the total number of enterprises. The business results of making losses in 2016 is one of the reasons why the number of enterprises stopping operating and performing procedures for dissolution in 2017 rise to the highest peak of 60.533.

In the three sectors of the enterprise, private firms and FDI have a higher rate of making loss than SOEs. If FIEs' losses could be from part of "transfer" price, the 48.45% of private firms making loss compared to 16.37% of SOEs making loss at 2016 clearly reflect the great difficulties that private businesses have to face.

**Figure 5: Loss-making enterprises in the period 2011 - 2016**

Unit: %

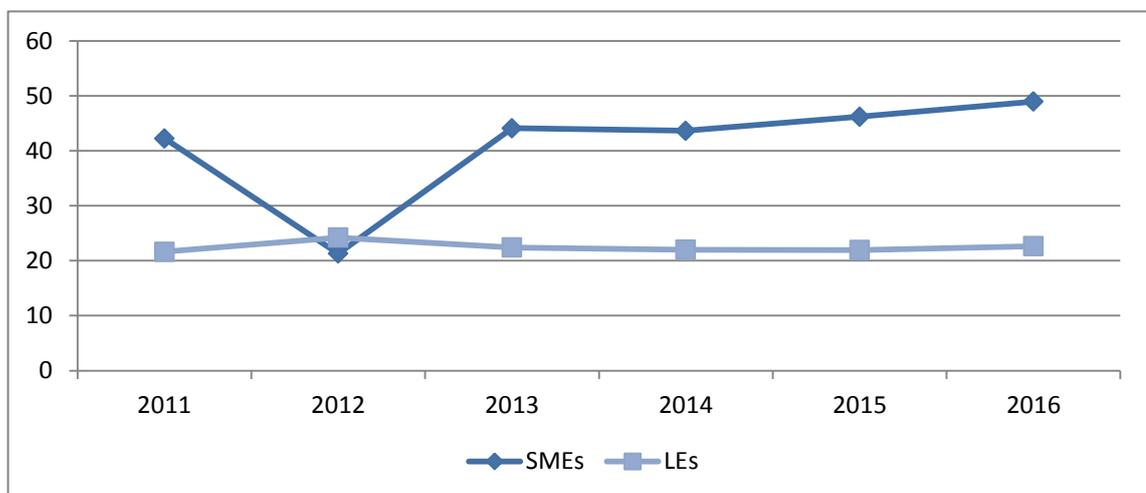


Source: Data processing from the GSO annual enterprises survey

On the size of the business, the ratio of loss-making businesses is often inversely proportional to the size of the enterprise, indicating the vulnerability of the SME sector. The loss or shortfall ratio of SMEs is at high rate (41.07% per annum) and that this sector occupies a large proportion in the period 2011 - 2016 has caused financial loss of the whole business increased, while the group Large-sized enterprises do not have this major financial loss.

**Figure 6: Rate of enterprises suffering losses by enterprise size in the period 2011 - 2016**

Unit: %



Source: Data processing from the GSO annual enterprises survey

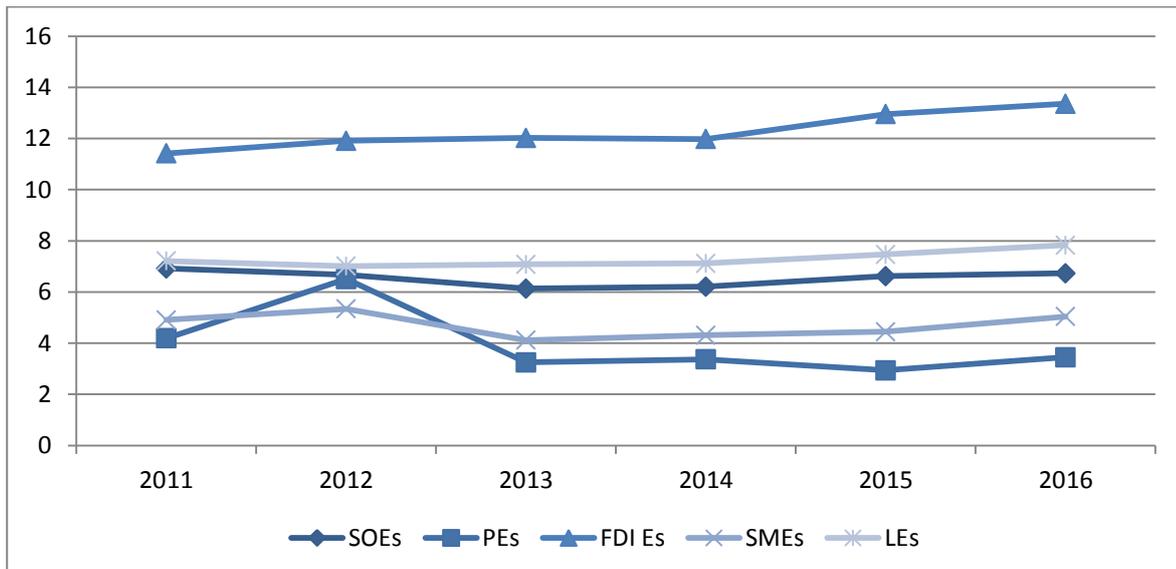
### Return on asset - ROA

To assess return on asset ROA, the article will only look at profitable businesses. According to this condition, the ROA of FIEs is always high and on top among the three business sectors. In 2016 this rate is up to 13.36%. This result is in stark contrast with the rate of loss-making FDI enterprises which continuously increase in the period 2011-2016. ROA of SOEs is always at an average level of 6.35% in this period. Meanwhile, the ROA of private firms is the lowest, reaching only 3.45% in 2016, meaning that businesses have to spend 100 VND on assets to earn just 3.45 VND. This is also consistent with highest rate of private sector losses. That also shows that it is not easy for enterprises to survive and develop, especially for startups.

Considering the size of the business, ROA also increased in line with the business size. ROA of large enterprises is always highest, with a rate of 7.98% in 2016. For SMEs, we can see the opposite trend in 2011-2013; the highest ROA in 2012 is 5.34% then it decreases to the lowest in 2013 with 4.12%. After that, ROA is still low but tends to increase slightly and in 2016 ROA reached 5.04%. This is in line with the above assessment as there are 99% of SMEs in the private sector.

**Figure 7: Return on assets of business stage 2011-2016**

Unit: %

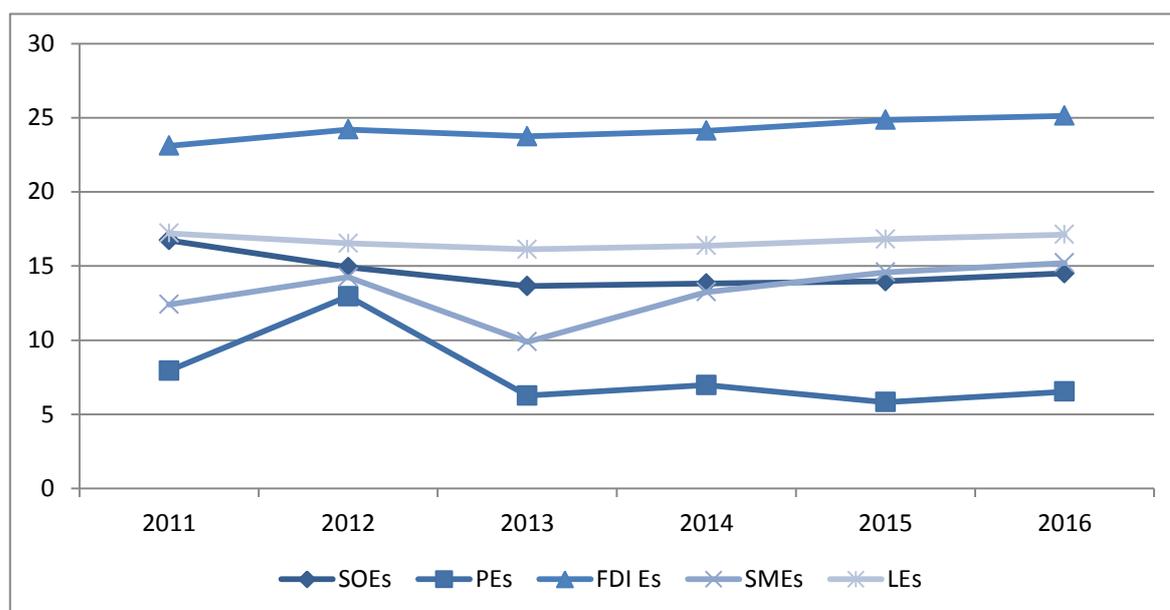


Source: Data processing from the GSO annual enterprises survey

### Return on equity - ROE

Similar to ROA, the return on equity (ROE) of FDI firms remains the highest. ROE continues to affirm the effective use of own funds of FDI enterprises when the index is always high compared to the other two business sectors

**Figure 8: Return on Equity – ROE in the period of 2011 – 2016**



*Source: Data processing from the GSO annual enterprises survey*

ROE of State-owned Enterprises (SOEs) which trended downwards during the period between 2011 and 2013, from 16.74% in 2011 to 13.65% in 2013, recovered gradually and reached the point of 14.51% in 2016. ROE of Private Enterprises (PEs) was always the lowest of three enterprise sectors. Although ROE of PEs topped out at the figure 12.96% in 2012, the level was just a half as much as that of FDI Enterprise. Even in 2016, SE'S ROE dipped 6.54%.

Like ROA, ROE is directly proportional to enterprise scale. The large-sized enterprise always gains the highest ROE of 17.21% in 2016. ROE of Small and Medium-Size Enterprises (SMEs) fluctuated significantly. The ROE of the sector was 14.25% in 2012, then went down to 9.89% in 2013 and ended with the upward of 15.21% in 2016.

It is evident that in spite of high losses, ROE and ROE of FDI enterprises still achieved the highest level over the period of 2011-2016, partly due to the "transfer pricing". Although the number of private enterprises is the majority, most of them are small-size in comparison with SOEs and FDI enterprises in terms of both labor and capital. At the same time, the production and business activities of this sector, which give always the poorest performance, encounter disadvantages. Obviously, much as government has supported to improve the business environment especially for the private sector in recent years, enterprises generally and private companies particularly are facing big challenges and obstacles for their survival, operation and development.

### **3.2. Enterprise Sector Role**

*Regarding contribution to domestic products*, during the implementation of The Multi-sectoral Development Programme, our country's economic structure according to sector has been changing with the trend of the decreasing proportion of the public sector; the increasing proportion of the non-public sector and the foreign-invested economic

sector. Currently, the private sector has made the largest contribution to GDP with the proportion of 43.52% in 2016, in comparison with 28.81% of the public sector and 18.59% of the FDI.

*Regarding contribution to investment*, the execution of the Enterprise Law and the new Investment Law in efforts to improve the business environment has had dramatic impacts on the funds mobilization of the private sector. In 2016, the private sector contributed about 39% of total investment, while the figures of the public sector and FDI were 37.60% and 23.40%, respectively. It has also shown that the investment capital of private sector into society has accounted for the largest part.

*Regarding contribution to employment offer*, in the process of economic renewal, the rapid growth of the private sector and foreign invested sector has provided labourers with many career opportunities. With all of the competition in local-wide investment and the ability to attract more workers, the private sector has been the main source of employment and drawing attention of the main labour force. Generally, the business and production companies in the private sector, which employed more than 70% of the labour force of the economy in 2016, have introduced over 1 million jobs per year at the average.

**Table 2: Contribution of types of enterprises to the economy in 2016**

*Unit: %*

Contribution of enterprise sector	Enterprise Scale		Enterprise ownership forms		
	SMEs	Les	SOEs	FDIEs	PEs
GDP	49.67	49.13	28.81	18.59	43.52
Investment	49.24	50.76	37.60	23.40	39
Budget	45.21	54.79	28.77	26	45.23
Employment	60.12	39.88	7.60	29.68	70.32

*Source: Data processing from the GSO enterprises survey in 2016*

*Regarding contribution to state budget revenue*, private enterprise sector also has a great contribution. According to the data of GSO of Vietnam in 2016, the non-state sector contributed to the state budget 434.7 trillion dong, accounting for over 45% of total revenue, followed by SOEs with the amount of 277.3 trillion dong, equally to 29% and the FDI sector with the lowest level of 250.9 trillion dong, equivalent to 26%.

Although the private enterprises play an important role in contributing to the state budget, there is "a paradox" related to the number of private enterprises and their contribution rates. Despite being the largest sector in economy, the private enterprises have witness the highest rate of losses. However, this sector also solves almost jobs, contributes greatly to investment, state budget as well as gross domestic product. It can be seen that in spite of many current difficulties, the private enterprises has contributed enormously to the development of the economy. Thus, it is no doubt that the private sector is "an important driving force of the economy".

### *3.3. Limitations of the enterprises sector*

Over the past years, the activities of enterprises increasingly developed. It was the result of improvement in the business environment and especially economic policies of the government in support of development of private sector and creating a business investment environment conducive to business growth as a driving force of the company. However, the enterprises sector has also had certain limitations.

In terms of quantity, it can be seen that enterprises in Vietnam have had strong development steps in the period of 2011 to 2017. Although the number of newly established enterprises is still higher than that of stopped or dissolved enterprises, this gap is gradually narrowing. This, on the one hand, shows the difficulty that enterprises have to face; it is also an opportunity for enterprises to restructure and for weak enterprises to be eliminated in the economy, toward a higher developing speed of economy on the other.

In terms of scale, more than 97% of Vietnamese enterprises is SMEs, of which nearly 60% are very small with backward technical conditions. Therefore, the business performance is not high, and this affects profit. SMEs account for more than 97% in quantity, SMEs account for less than 40% of total assets while large enterprises, accounting for less than 3%, of total number, hold 60% of the total assets of the whole enterprises area. Moreover, 99% of SMEs is private enterprises, which in turn increases the difficulty for enterprises to maintain and develop. In addition, these two sectors also reveal the following limitations as spontaneous survival and development, lack of economic and technical connection; weak management and financial ability, small market and low competitiveness. Especially, because of the "small and medium size", these enterprises are also affected by unhealthy competition causing awkwardness to access to national resources as well as land, labor, technology, training, market ... compared to SOEs.

In terms of ownership, the growth rate of the private sector has tended to decrease in recent years. The scale of the private sector, which still expands slowly, mainly includes individual business households with small and micro scale, of which more than 90% have total capital of less than one billion dong. Not only private sector but also enterprises sector has low technology and slow innovation; low even family-oriented management. Especially, many enterprises do not want to "grow" or have no conditions to grow up. Another "weakness" of this area is the limited level of technology and labor; low labor productivity, poor product and service quality without the satisfaction of the market requirements, especially the market of developed countries. Moreover, it is impossible for the private sector to participate in the production connection network, value chain or only simple stages with low added value. In addition, the competitiveness of the private sector is restricted because of the shortage of prestigious and branded enterprises to compete with the major competitors in the international market; its unreasonable business structure, failure to cooperate with each other and with other economic sectors; the restrained ability to intergrate international economy, the failure of the satisfactory of requirements of regional and global production value chains' requirements. Many private enterprises have stopped operating, dissolved and went bankrupt.

### *3.4. Causes of limitations*

Enterprises sector especially private sector play an growing important role in the country development, meanwhile, its function has not been given full play due to the existing obstacles and problems caused by the enterprises itself, by the unsound Government management of the area.

As regard to businesses, internal efforts is a key factor to ensure powerful, effective and sustainable development. However, weak internal efforts of enterprises especially private enterprises has been one of the difficulties and barriers for the development. Despite the overwhelming quantity and proportion in the national enterprises system, most of the private enterprises, being small and medium scaled, especially "micro", have limitations in financial resources, management capacity, technology equipment and innovation or renewal.

Drawbacks of resources are closely related to that of technology equipment and technology innovation. The inevitable consequence of this situation is that the business performance and competitiveness of private enterprises are worse than those of SOEs and FDI enterprises.

Furthermore, the shortage of business capital is the common situation among enterprises while it is difficult for the enterprises to access to credit capital resources of commercial banks. Particularly, in the background of comprehensively international integration of Vietnam, weak competitiveness of the private sector is considered as the biggest challenge for the private enterprises.

Another hindrance for the enterprises is the low management capacity. The number of enterprises, which is managed in a scientific manner, such as focusing on making business strategies as a basis for long-term investment activities, building and branding to establish a position in the domestic and international market, has not been popular yet. Many enterprises, mainly small-sized private enterprises, limited liability companies and joint-stock companies, usually deal with their business by temporary means in short-term business, even snapshots to seek profits by any tricks (tax evasion, tax fraud, fakes, counterfeited goods ...).

Apart from the types of enterprises and households under private sector, there is also another kind, that carries out production and business activities without registration with state management agencies and is out of the control of the local state management agencies. This is often referred to as the informal economic area. In addition to the positive impacts (creating jobs and income for a part of the labor force, providing a convenient way for some small products and services for consumers), the informal economic activities have many negative effects both economically and socially. The main harmful impacts are: the effect on state budget revenues due to failure to register and pay taxes; the failure to reflect the real scale of the economy because of lacking statistics ; the cause of unhealthy and unfair competition for registration enterprises; the insufficient benefits of employees provided for by law, Meanwhile, the scale of the informal economy in Vietnam is quite large and has both positive and negative impacts on the economy and society.

*As regard to state management*, institutional issues and policies for enterprises have made great efforts in improving the business environment to attract domestic and foreign resources for development investment. However, the incentive mechanisms for businesses are still inadequate. That causes many difficulties and challenges for enterprises, especially newly established enterprises. According to a survey by the Vietnam Private Sector Forum (VPSF), 44% of enterprise reported that they had missed out on business opportunities because of legal barriers and market restriction regulations.

When the State has set up properly a legal framework and a policy system to promote the development of the enterprises, the role of enforcement agencies is particularly important to actualization these policies. This is clearly illustrated in the difference in the pace of enterprise development between provinces. In the same country, with the same legal framework and common policies, the different quality of public authorities can make a significant distinction in the enterprises' ability and cost for capital access.

#### **4. Discussion and Conclusion**

The study has assessed the development status and the role of different enterprise sectors in Vietnam in the period of 2011-2016. The study shows that enterprises operating in Vietnam have experienced a strong growth in the period from 2011 to 2017. In the period 2011-2016: The number of enterprises operating in the country on average increased 9.73%/year, the number of newly established enterprises is higher than that of dissolution and bankrupt enterprises yearly and the gap has narrowed gradually. The percentage of enterprises suffering losses in the economy in this period increased about 40.1% per year. Of three enterprise sectors, private enterprises and FDI enterprises suffered more losses than state-owned enterprise, in 2016 to 49.2% (PEs) and 16.37% (SOEs) bearing losses, which clearly reflected the great difficulties the private sector faced. The study also clarified the limitations of the enterprise sector in terms of quantity, scale and ownership, as well as identified the shortcomings and constraints of the business itself and its inadequacies of state management to the business sector. However, the study has not evaluated the situation of enterprises in other aspects such as indicators reflecting the enterprise's ability in labor, profitability, changing trend of enterprises in the period.

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# SETTING UP A KEY PERFORMANCE INDICATORS TO MEASURE BUSINESS STRATEGY OBJECTIVES USING THE BALANCED SCORECARD METHOD - IN THE CASE OF THE NORTHERN ELECTRICITY CORPORATION, VIETNAM

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## **Abstract**

*Setting up key performance indicator (KPI) applying Balanced scorecard method (BSC) to measure an enterprise' business strategic objectives is one of an important management tools helping enterprise to analyze, monitor and measure strategy targets so that its resources are allocated efficiently. The first part of the paper presents a brief summary of the methodology for establishing a key performance indicators for measuring strategic objectives using balanced scorecard method. Based on that, the main content of the article focuses on the application of the North Power Corporation (EVNNPC) based on four perspective such as (i) Financial, (ii) Customer Relation, (iii) Internal Business Process (iv) Learning and Growth.*

**Keywords:** *Balanced Scorecard, Key Performance Indicators, Northern Power Company, Strategy Map.*

## **1. Introduction**

Northern Power Corporation (EVNNPC) is one of the three power distribution companies under the Electricity of Vietnam Group (EVN), a leading enterprise in the field of electricity distribution and distribution business. Together with the Electricity of Vietnam, Northern Power Corporation plays the leading role of a key economic sector in the task of ensuring national energy security. The corporation has 50 affiliates with over 27 thousand employees, operating in 27 provinces and cities in the North of Vietnam.

In the process of development, when state-owned enterprises in which EVN's enterprises such as EVNNPC are faced with some of the following challenges (i) Pressure from improving production efficiency in the regional and world economic integration environment; (ii) Pressure from customers to improve the quality of their services to meet customer service standards; (iii) Expanding pressure, seeking new business opportunities to diversify operations and serve the strategic purposes of the corporation (iv) The pressure from the restructuring of state-owned economics groups under the direction of the Government and direct guidance from EVN led to the development strategy and governance system need to be adjusted to keep pace with changes in terms of size and speed of development.

Robert S. Kaplan & David P. Norton (1996) noted that how managers can use the Balanced Scorecard tool to mobilize resources to accomplish a corporate mission. The Balanced Scorecard is also a system for transferring the ability, ability and knowledge of

employees throughout the organization to achieve long-term strategic goals. In addition to these measures in four perspective: Financial; Customer; Internal process scenarios Learning and Growth which are to connect individuals, departments, and identify new processes that meet the needs of our customers and stakeholders.

David Parmenter (2007) studied the integration of KPIs with balanced scorecard scenarios to help enterprises grow steadily and sustainably through the linkage between Kaplan and Norton scorecard models applying of performance measurement in an enterprise.

Luu Truong Van, Kim Soo-Yong, Cao Huu Loi, Park Young-Min (2008) integrated the scorecard into the SWOT matrix to evaluate the strategic completion of the major contractors in Vietnam and the Construction Company built An Giang (ACC) as the case study to verify this approach. Develop BSC in the direction of SWOT matrix to shape ACC's short and long term strategy. Use benchmarking to assess the completion of ACC and find out best practices of competitors to improve.

## 2. Methodology

### 2.1 The concept of Balanced Scorecard

Balanced Scorecard is a modern management approach based on the objective that the development orientation of the enterprise is reflected in the goals and objectives developed by the organization in a harmonious way, based on important priorities of the organization.

This system helps to orient the behavior of all systems in the organization - helping all members move towards the common goal as well as the sustainable development of the enterprise and also serving as the basis for the management and job evaluation system.

Balanced Scorecard is a system that transforms the organization's vision and strategy into specific goals and metrics by establishing a performance metrics system in an enterprise across four perspectives.

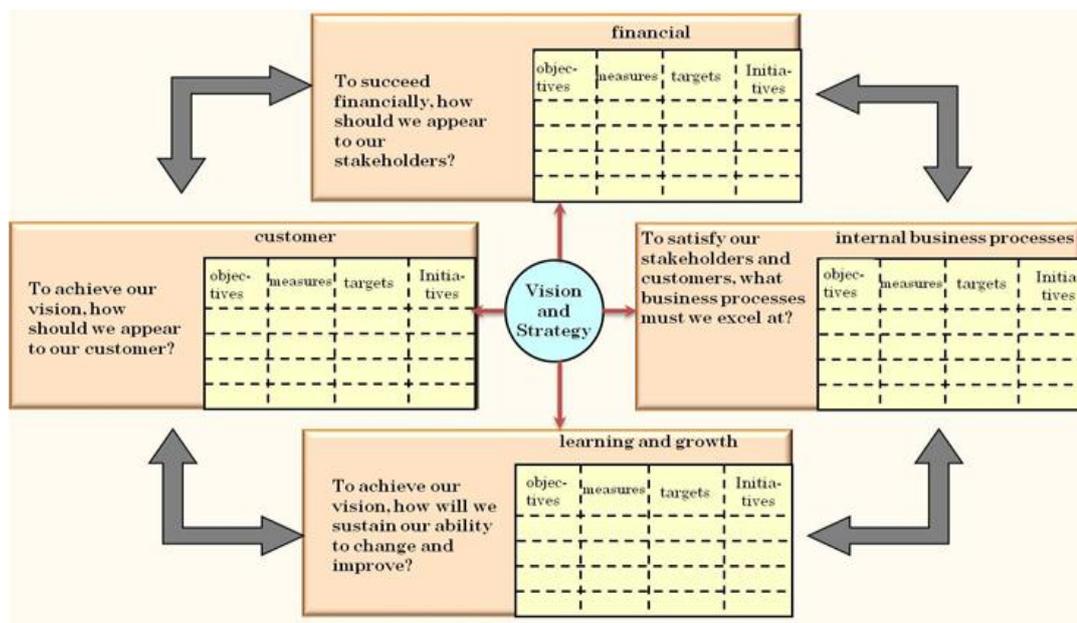


Figure 1 Balanced Scorecard Model<sup>1</sup>

<sup>1</sup> Overview of KPI”, IMC LEADERS – Internal Communication Bulletin, No. 26, 07/06/2013, pp. 1

The balance is expressed between short-term and long-term goals, between financial and non-financial measures, between performance indicators and effective performance indicators and between edge performance and peripheral performance.

The balance sheet is structured throughout the organization's mission, values, vision and strategy through strategic maps that clearly show the Balanced Scorecard in four perspective of financial, customer, operational internal business, learning and development corresponding to goals, measures, indicators and initiatives.

Corresponding to each aspect of the equilibrium scorecard there are goals, metrics for each goal, metrics for the measure, action plan for each goal, and budget for implementing the action plan. The budget is set by the company executive board to implement action plans for targets based on metrics with specific targets. The objective is to identify the strategic statements to be achieved; a measure of whether the establishment of a Key Performance Indicator (KPI) to measure achievement of a goal; Indicators indicate the level of results to be achieved and initiatives that show action programs to achieve the goal.

## ***2.2. Key Performance Indicators***

Key Performance Indicators (KPIs) evaluate the effectiveness and growth of activities within an enterprise which were designed<sup>18</sup>.

KPIs help enterprises shape and track their operations and growth against business goals. Once the enterprise has formed a mission, identifying the factors that influence and set goals, the business needs to measure growth against the set goals. KPIs are a measures of this growth.

## ***2.3 Differentiate KPIs and some performance Indicator***

There are 3 types of performance indicators as follows (Figure 2).

- Key Result Indicators (KRIs) are indicators of what a business has accomplished with a single indicator.

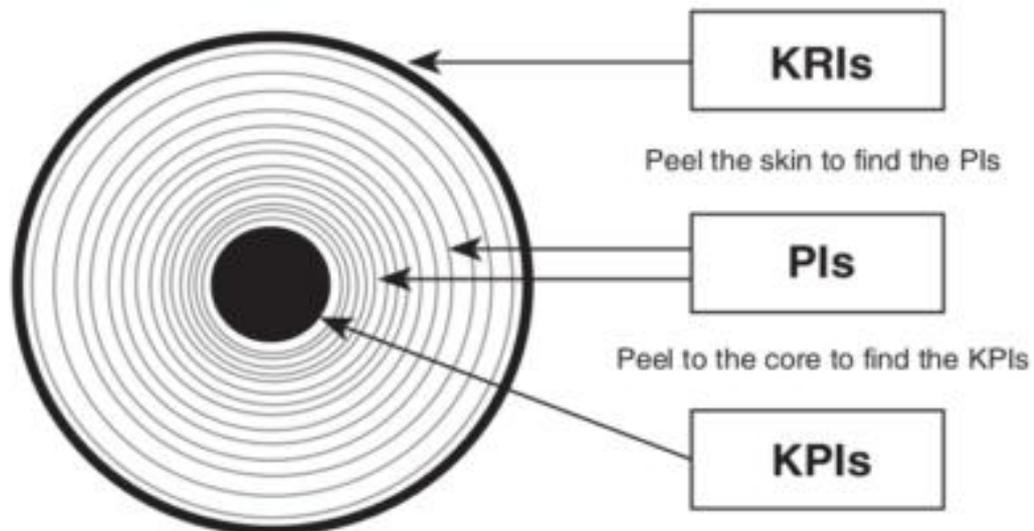
- Performance Indicators (PIs) are indications of what the business needs to do.

- Key Performance Indicators (KPIs) are an indicator of what a business should do to improve performance.

Therefore, many performance metrics are mixtures of the three types of indicators<sup>2</sup>.

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<sup>2</sup> Efficient measurement indicators”, David Parmenter, Nguyen Thị Kim Thuong translation, 2009, pp. 17



**Figure 2 Three Types of Performance Efficiency**

#### ***2.4 Criteria for Setting up KPIs***

As a tool used to evaluate the performance of the business, so when building the KPI system should focus on SMART criteria:

- S - Specific: Helps employees know what they must do to achieve the desired performance.
- M- Measurable: can be quantified by different units, not just in monetary form. For example: market share, customer satisfaction and return on investment.
- A - Achievable - Feasibility: It is necessary to set realistic goals in order to reach the target.
- R - Realistic: KPIs are indicators for current and future, closely linked to strategic goals and clear action.
- T – Time bound - Specific deadlines: KPIs must have specific time limits to know how long to complete.

### **3. Setting up Key Performance Indicators for Measuring Strategic Objectives at the Northern Power Corporation**

#### ***3.1 Factors Influencing the Setting up Key Performance Indicators for Measuring the Strategic Objectives of the Northern Power Corporation***

EVNNPC's business activities will be based on the strategy and business orientations set by the EVN and the Corporation. The development of a strategic indicator system (BSC - KPI) for the Corporation will be influenced by several factors:

##### ***3.1.1 EVNNPC's Strategy***

EVNNPC's strategy is one of the important factors affecting the development and implementation of BSC-KPIs. Strategic business plans and goals will be the basis for the structural design as well as the identification of KPIs of the balance scorecard.

### *3.1.2 Commitment of leaders of the Northern Power Corporation*

Commitment of the Board of Directors and the leadership team who has high professional level and easily adapt to change with new management. This is one of the favorable conditions when developing and deploying BSC - KPIs at EVNNPC.

### *3.1.3 Corporate Culture*

With the slogan "**EVNNPC for Community Development**". The corporation has created the unique culture of the enterprise but still ensures the activities of public interest, social and oriented to the core values:

**Quality-Trust; Devotional-Intellectual; Cooperation-Sharing; Creativity-Effectiveness**

### *3.1.4 Staff capacity*

In the past time, the training and professional training has been implemented well from the Corporation to the units. Units have implemented on time the implementation of the training plan that the Corporation has contributed to improve the capacity of employees in the corporation.

### *3.1.5 Information Technology*

EVNNPC operates on a fairly modern information technology platform, both in hardware and software, in compliance with international standards and practices. IT infrastructure connects from the corporation to 100% of member companies in provinces and to 88.8% of the units in districts.

From the above analyzes, it can be seen that the Corporation has achieved four basic elements for the development and application of the BSC- KPIs system. Therefore, the implementation and application of the BSC - KPIs system at the Corporation is perfectly appropriate.

## ***3.2. Setting up key performance indicators for measuring strategic objectives at the Northern Power Corporation***

### *3.2.1. Setting up Strategic mapping at Northern Power Corporation Based on Balanced Scorecard (BSC)*

Based on the review of the core cultural values and the strategic objectives of EVNNPC mentioned above, the authors develops a strategic map for EVNNPC.

The operation of the electricity sector is a special type of service, consisting of a variety of activities, targets that are not aggregated to the standard aspects of the BSC.

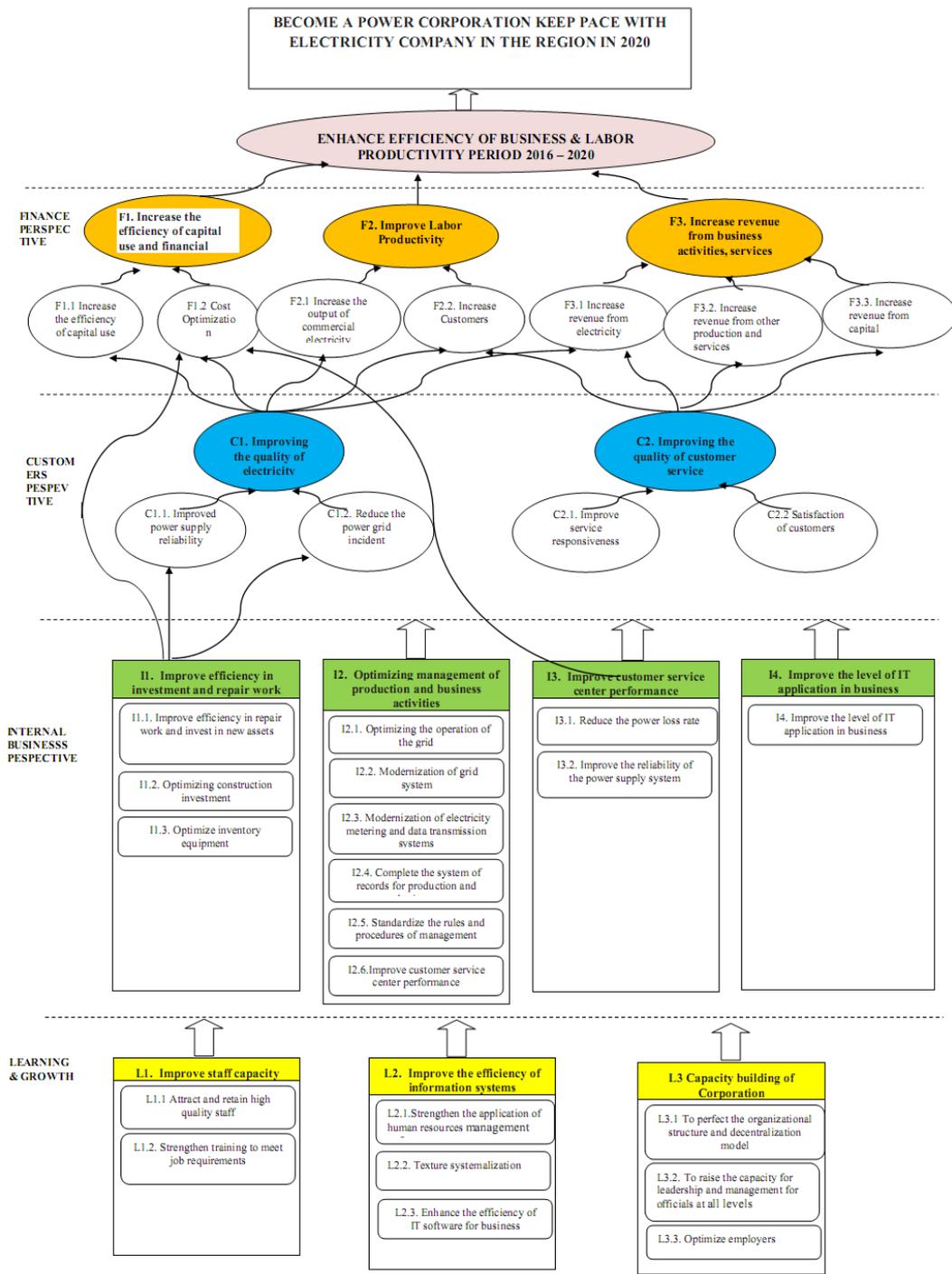
The strategic objectives of EVNNPC for the period 2016 - 2020 are as follows:

**"BECOME A POWER CORPORATION KEEP PACE WITH ELECTRICITY  
COMPANY IN THE REGION IN 2020"**

and expressed in four perspectives: (i) Financial Target; (ii) Customer Relationship Target; (iii) Internal Business Process Target; (iv) Learning and Growth target.

### 3.2.2. Deployment of the Strategic Map of Northern Power Corporation based on the Balanced Scorecard Model

The strategic map of EVNNPC was formed on the basis of integrating strategic objectives into the BSC structure and demonstrating the causal relationship between desired results in terms of finances, customers, internal processes and learning development. These processes create and shift value to the target customers and contribute to financial efficiency.



**Figure 3: Strategic map of Northern Power Corporation period 2016-2020**

Source: Self-built authors based on EVN NPC's strategy

**Table 1: Developing from Strategic Objectives to Performance Measurement in EVNNPC**

<b>TT</b>	<b>Key Performance Objective (KPO)</b>	<b>Sub – KPO</b>
<b>FINANCE PERSPECTIVE (7F)</b>		
1	<b>Increase the efficiency of capital use and financial health</b>	F1.1. Increase the efficiency of capital use
2		F1.2. Cost Optimization
3	<b>Improve labor productivity</b>	F2.1. Increase the output of commercial electricity
4		F2.2. Increase customers
5	<b>Increase revenue from business activities, services</b>	F3.1. Increase revenue from electricity business
6		F3.2. Increase revenue from other production and services
7		F3.3. Increase revenue from capital contribution
<b>CUSTOMER RELATION PERSPECTIVE (4C)</b>		
8	<b>Improving the quality of electricity supply</b>	C1.1. Improved power supply reliability
9		C1.2. Reduce the power grid incident
10	<b>Improving the quality of customer service</b>	C2.1. Improve service responsiveness
11		C2.2. Satisfaction of customers
<b>INTERNAL BUSINESS PROCESS PERSPECTIVE (12I)</b>		
12	<b>Improve efficiency in investment and repair work</b>	I1.1. Improve efficiency in repair work and invest in new assets
13		I1.2. Optimizing construction investment
14		I1.3. Optimize inventory equipment
15	<b>Optimizing management of production and business activities</b>	I2.1. Optimizing the operation of the grid
16		I2.2. Modernization of grid system
17		I2.3. Modernization of electricity metering and data transmission systems
18		I2.4. Complete the system of records for production and business
19		I2.5. Standardize the rules and procedures of management
20		I2.6. Improve customer service center performance
21	<b>Improvement of distribution network quality</b>	I3.1. Reduce the power loss rate
22		I3.2. Improve the reliability of the power supply system

<b>TT</b>	<b>Key Performance Objective (KPO)</b>	<b>Sub – KPO</b>
23	<b>Improve the level of IT application in business</b>	I4.1. Improve the level of IT application in business
<b>LEARNING &amp; GROWTH PERSPECTIVE (9L)</b>		
24	<b>Improve staff capacity</b>	L1.1. Attract and retain high quality staff
25		L1.2. Strengthen training to meet job requirements
26	<b>Improve the efficiency of information systems</b>	L2.1. Strengthen the application of human resources management software
27		L2.2. Texture systematization
28		L2.3. Enhance the efficiency of IT software for business
30	<b>Capacity building of Corporation</b>	L3.1. To perfect the organizational structure and decentralization model
31		L3.2. To raise the capacity for leadership and management for officials at all levels
32		L3.3. Optimize employers
33		L3.4. Improve performance for advancement of women and gender equality

#### **4. Discussion and Conclusion**

Developing KPIs using the Balanced Scorecard (BSC) in four perspectives: Finance, Customer, Internal Business Process, Learning & Growth at the Northern Power Corporation is a modern management tool that transforms the vision and strategy of an organization into concrete goals and actions at the departmental level. Through the balance of four perspectives: finances, customers, internal processes, and business learning and development, resources can be allocated to improve financial and non-financial measures helping businesses develop stable and sustainable.

However, in order to operate the system of indicators for measuring these strategic objectives, in addition to the determination of the leaders of the Northern Power Corporation, the process of operating the BSC- KPI criteria and method of assessment.

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12. Decision No. 189 / QĐ-EVNNPC dated 27/01/2016 of the Chairman of EVNNPC on the promulgation of regulations on functions and duties of the Office and Departments of the Northern Power Corporation;

# JOB SATISFACTION OF OPERATION MANAGEMENT DEPARTMENT AT INDUSTRIAL EQUIPMENT TRADE JOINT STOCK COMPANY

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## **Abstract**

*The paper analyzes the job satisfaction of employees at the Operation Management Department of Industrial Equipment Trade Joint Stock Company (IETC) based on Job Description Index model, as well as proposes solutions to improve job satisfaction. Responses for surveys and questionnaires were collected from all 84 members of the department. Results show that satisfaction levels of factor “Pay”, “The work itself”, and “Promotions and promotion opportunities” are neutral; meanwhile “Coworker” and “Supervision” have satisfied level. This leads to overall job satisfaction at the level of neutral. Therefore, improving policies on Pay, supervisors’ capabilities, and activities to connect “Coworkers” is recommended to increase job satisfaction.*

**Keywords:** Job satisfaction, Operation Management Department, satisfaction levels of factor, solution.

## **1. Introduction**

Job satisfaction has been a hot topic recently. Managers and specially HR managers have paid a close attention. In Vietnam, after joining different local and international organizations such as ASEAN, WTO, or WB, the HR market becomes more competitive for companies. Supply for jobs is higher than demand. Quality employees place high requirements for companies to work for. Some workers rank criteria for an organization: Wage - Opportunity to promoted - Welfare. Some others list out: Working environment – Welfare - Colleagues. The job of managers is to find out talented employees and make them satisfy with the job. However, with the Vietnamese working culture, job satisfaction just has been focused and analyzed for not so long. And most of solutions are not applied professionally.

Besides, in industrial equipment, there have been few researches of job satisfaction because changing jobs among industrial equipment companies is so common because this field is not popular anymore. The author believes that the research would be the first on dig to a specific level of studying the employees’ job satisfaction in industrial equipment field than any researches before.

Most of managers admit that it is a big lost when a staff leaves. The lost is combination of cost, knowledge, and time. The head of Operation Management

Department (OMD) of Industrial Equipment Trade Joint Stock Company (IETC) once said that he would never hire people from Foreign Trade University again, because they do not stay for a long time. According to his experience, he had had 5 talented employees from Foreign Trade University. They had all changed to different departments or different companies after at most two years. It takes time for the manager to find other good people, and to train them. It puts pressure on other team members. All makes up to a huge cost. Thus, evaluating factors that affect employees' job satisfaction is a smart move. Managers will know what to change to keep important staffs, and avoid the brain drain.

Within many Departments of IETC, Operation Management is the core Department. Since 2014, there have been 15 members moved out of the Department. And the number tends to rise. In order to get dig deeper to see if employees are actually satisfied with the work they do, it is necessary to do the study of Operation Management Department employee's job satisfaction at IETC. The job satisfaction of employees will give employees all reasons to stay with OMD happily. It also helps the manager to have a stable team for a better outcome.

The Job Descriptive Index model (JDI) is the model the author used. It developed by Smith et al. (1969) at Cornell University in the United States. It has 72 questions to measure 5 factors: supervision, coworkers, pay, promotional opportunities, and the work itself. It has been valued in both research and practice. Participants were asked to think about specific aspects of the job and to evaluate their satisfaction with specific aspects. It's included with Spector's (1997) Job Satisfaction Survey (JSS) and Weiss et al.'s Minnesota Satisfaction Questionnaire (MSQ). (1967) are the three tools in job satisfaction measurement, in which JDI and MSQ are two tools widely used in practice and theory (Green, 2000). According to Worrell (2004), in about 30 years since its inception, 1200 different studies have used JDI to measure job satisfaction. The JDI model was originally designed with 72 different questions about the five elements of work: (1) the work itself, (2) promotions and promotion opportunities, (3) supervision, (4) coworker and (5) pay.

- Pay: refers to the employee's perceptions of fairness (internal and external) in payment. Obviously, the higher payment a worker gets, the higher satisfaction level the worker has. Pay can be seen as one of the first factor when a person is looking for a job. And it is also one of the first and most important factor that a person thinks of to evaluate job satisfaction. Pay is not the most important reason an employee work for a company, and it should not. But pay provides what employees need.

- Promotions and promotion opportunities: involves employee perceptions of opportunities for training, personal development, and opportunities for promotion within the organization. According to Kreitner and Kinicki (2001), development chances is proportional to job satisfaction only if perceptions of employees are fair. Promotion opportunities have shown in many Vietnamese studies having positive impact on job satisfaction: Tran Kim Dung, (2005); or Ha Nam Khanh Giao (2011).

- Coworkers: Coworker relationship in the workplace. Friendly and helpful coworkers are tremendous important factor that whether the job satisfaction is negative or

positive, according to Kreitner & Kinicki (2001). A place with full of nice and open-minded colleagues would never be a dissatisfied place.

- The work itself: involves the challenges of the job, the opportunity to use personal abilities, and the joy of doing the job. According to Loke (1995) and Luddy (2005), job satisfaction depends on the nature of the job. The link of work to the worker is shown in many angles of the nature of the job. What is the usage of skills? How the work flow is understood? How important a certain job is? More essentially, the work itself has to fit with employees' capacity.

- Supervision involves the relationship between the employee and the immediate supervisor, the supervisor's support, the leadership style and the leadership's ability to perform organizational functions in the organization. Job satisfaction can be affected by the relationship with supervisor positively or negatively. The feeling when talking, eye contacting, smiling can imply many things. Employees can see the respect from supervisors through the mean of communication. A manager who comes to a staff's table to assign tasks carefully and friendly is different than a boss who calls out loud a staff to come and assign the job without any details. The impacts to JS are opposite. (Robins, 2002). According to Ramsey (1997) morale connects significantly with leadership. Mean bosses would never stay long with employees. People need to be on the same side in order to empathize to each other. By that, stress would be reduced and JS would be increased.

## **2. Method**

The Research process is followed:

1. Determining Research Objectives
2. Classifying dimensions to measure job satisfaction
3. Data collection:
  - Primary data: In – depth Interviews and questionnaire surveys
  - Secondary data: OMD reports, and other relevant reports
4. Analyzing current employee job satisfaction
5. Proposing Solutions

For data collection, both primary and secondary data were used in conducting the research. Secondary data were collected through the IETC's labor agreements, IETC's structure, HR management policies, HR management rate, and other relevant reports. Besides that, secondary data were also collected from books, articles, journals, handouts in human resources development and the internet.

To collect primary data, questionnaires were given out through emails to 84 members of OMD, not including head of departments and head of divisions. Responses were collected via emails. The questionnaires are designed based on the measuring employee job satisfaction with questions of multiple choices, using 5 point likert scaling system. 1 to 5 represents from totally dissatisfied to totally satisfied.

The author constructed a questionnaire on the Likert scale of 5 in the questionnaire. The significance of each mean value to the Interval Scale was determined as follows:

$$\text{Distance value} = (\text{Maximum} - \text{Minimum}) / n = (5 - 1) / 5 = 0.8$$

Thus, range of mean for totally dissatisfied is 1.00 – 1.8; 1.81 – 2.60 is Dissatisfied's range of mean; 2.61 – 3.40 is Neutral's; 3.41 – 4.20 is Satisfied's; and 4.21 – 5.00 is Totally satisfied's. (Source: Statistical book of socio-economic application - Chu Nguyen Mong Ngoc and Hoang Trong, 2008)

In the questionnaire, 23 variables are observed to measure 5 dimensions of job satisfaction as follows:

- The work itself (4 variables):
  - + The work is suitable for staffs' professional knowledge and skills;
  - + The work is as expected;
  - + The amount of work is suitable;
  - + Work is motivated.
- Promotions and promotion opportunities (5 variables):
  - + Training programs for new employees are available;
  - + Training programs for senior employees are available;
  - + Opportunities to be promoted are various;
  - + Promotion program is fair;
  - + Programs to develop employees' personal capacity are available.
- Supervision (6 variables):
  - + Supervisor treats employees fairly;
  - + Supervisor listens and respects employees' opinions;
  - + Supervisor is professional at work;
  - + Supervisor motivates employees;
  - + Relationship between supervisors and employees is good;
  - + Supervisors assign works based on employees' skills and knowledge.
- Coworkers (4 variables):
  - + Good relationship with coworkers;
  - + Good cooperation with coworkers;
  - + Coworkers are friendly and caring;
  - + Coworkers are willing to share knowledge and experience.
- Pay (4 variables):
  - + The pay can cover monthly expenses;
  - + The pay is paid fully and timely;
  - + The pay is commensurate with the volume and complexity of my work;
  - + The pay is commensurate with the outcome.

(Source: Smith, Kendall, and Hulin (1969))

The author also had in – depth interviews with the Head of Department, 2 Heads of Divisions and 3 employees. These interviews are to deeply understand on current job satisfaction situation at OMD. It involves opening questions and direct questions to factors affecting job satisfaction.

The data collected from the questionnaire were analyzed and categorized according to the factors: gender, age, academic qualifications, and seniority. Mean, frequency, maximum value, and minimum value are calculated and represented at tables and figures. The items were grouped based on the responses given by the respondents. This method is suitable to identify, compare, describe and reach a conclusion.

### **3. Results**

“The work itself” is one of the most important aspects to attract human resources. It is the first consideration when a person decides whether to choose the job. The work itself is influenced by 4 observational variables, including: The work is suitable for staffs’ professional knowledge and skills; The work is as expected; The amount of work is suitable; Work is motivated.

The mean value of the variable “The work is suitable for staffs’ professional knowledge and skills ”has the highest mean value of 3.33, followed by the variable “ The work is motivated “. Its mean is 3.32 which is in the 2.61-3.40 group. It indicates that the current job may be motivated, maybe not. It might depend on the actual job that people are doing; It also depends on employee’s expectation as well as understanding of the job.

“The work is as expected” has the mean of 3.19. It is not a high value. Similar to the above questions, some employees of Operation Management Department are not so happy with the job when their expectations did not meet the reality. According to a Head of the Division, employees can be assigned to different jobs, in different location based on the requirements. Thus, people can have work they did not want to at the beginning.

“The amount of work is suitable” has the lowest mean among 4 questions. It is in the range of dissatisfied. 36 and 37 people had the answer of either dissatisfied or neutral. 7 people were totally dissatisfied. Only 4 people were satisfied. It indicates that the work in OMD is not well-distributed. In reality, some employees have to have do OT 5 days/ week without bonus. They simply have too much work that they cannot do within business hours. Some divisions have to work on every Saturday. Oppositely, some people never come home late.

The second dimension is "pay". We are looking at 4 important questions: Whether payment is timely and fully? Whether payment is commensurate with volume and complexity? Whether outcome and payment is commensurate? Whether payment is enough? As condition in labor contract, and the culture in IETC as well as the Operation Management Department, people would neither share their salaries nor ask other’s pays. Thus, pay is a sensitive issue.

The variable "Pay is paid fully and timely" with a mean of 3.6 > 3.41. It shows that all staffs of the OMD are satisfied with the payment of wages. Staffs get paid in full on

10th of each month. Pay is never late with detailed description. More than half of OMD employees feel satisfied with this factor. It accounts for 60.71%. The rest stays neutral which is 39.29%. Because the OMD belongs to IETC which is a government enterprise, the pay is never late or not full. This is an advantage.

However, for the remaining variables, the results are completely contradictory. With two variables, "The pay is commensurate with the volume and complexity of my work," and "The pay is commensurate with the outcome," the results were not high, averaging 2.76 and 2.9, respectively. It shows that the regimes and policies on remuneration and evaluating the performance of the companies applying are not very effective. It leads to the dissatisfaction of the employees. Particularly with the variable "The pay is commensurate with the volume and complexity of my work," the mean was  $2.76 < 3.41$ .

Overall, the overall mean value of the "Pay" aspect was  $3.04 < 3.41$ . It shows that employees are not really satisfied with the current pay. Many employees argue that wages do not really match the results. At the OMD, the difference between managers' and staffs' salaries is huge. While the number of employees accounts for a large proportion of the OMD, the annual increase in staff salaries is negligible.

In this study, the "Co-worker" aspect was established from 4 observable variables. In the relationship with colleagues, the author mentions the following variables: relationships between co-workers, cooperation between co-workers, sharing between co-workers, and feeling toward each others.

The mean of the term "Coworker" is 3.5. The mean is in the range of satisfied. It indicates that people in OMD have a strong and tie connection with each other.

The variable "Coworkers are willing to share knowledge and experience" reached a relatively high mean of 3.47. In general, the relationship between peers is very good, with the highest mean of 3.6. The complexity of the work requires the coordination of staff between departments. Thus, it is necessary to share experience and information that create a relative harmony in the work environment at work. With 50 employees which is 60% of respondents choose to say satisfied and more than satisfied, we can conclude that general working environment at OMD is ideal

The remaining "Coworkers are friendly and caring" has a mean of 3.44. It indicates that the staffs are quite satisfied when working in the corporate team. This is a relatively positive result compared with other factors. With the characteristics of office works and the culture of IETC, people in the OMD see each other as family members. Thus, new staffs can immediately feel the warm welcome from old staffs. There are no distances between coworkers.

Variables with a mean value greater than 3.5 indicate that employees are satisfied with the attitudes of colleagues, as well as the coordination and support at work.

In this study, the author examines 6 variables of the "Supervision" aspect: fair treatment, listening and respecting opinions, competence, motivation, relationships with

employees, and assigning for right people. All 6 variables have means in the satisfied range - 3.41 to 4.20. Much better than the factor "Coworker", "Supervision" factor determine that supervisors of the department of the OMD is qualified. In fact, all questions asked about bosses at work all have means in the satisfied range. This never happens with others factors: The work itself, Pay, and Coworker. Even though the mean of "Supervision" is lightly lower than the mean of "Coworker", in my opinion, "Supervision" is the one which has the highest score.

"Supervision" is one of the aspects that greatly influence job satisfaction in the workplace. When the work itself does not change, good leaders will know how to increase job satisfaction. They will know how to allocate the right job to the right people, to treat them fairly, and to create interpersonal relationships. The staff will feel more interesting about their current job. More importantly, employees will feel motivated to accomplish the assigned work. This also creates momentum for them to try harder for higher position.

The relationship between employers and employees is a two-way relationship. Managers have the right to exchange, transfer, remit and evaluate employees. Employees have the right to display their status, thoughts and behaviors. Employees also have the right to show their opinions through the way supervisors manage works. From there, staffs can show respect or concern about managers. Supervisors need to have a team of qualified staffs who know what to do in specific jobs. On the other hand, employees need leaders who can have visions in every step. They have to feel protected. This could be a win-win or lose-lose relationship.

Most of employees at the Operation Management Department in particular or IETC in general have strong connections with many people. Many of them get the job through connections. However, it does not mean that the OMD's supervisors treat people based on their connections. People are treated based on commitments, results of work, attitudes, and characteristics. The fairness in treatment can be seen through statistics. Only one person (1.19%) felt completely not dissatisfied. Number of people satisfied is 29. And 8 people are very satisfied. The total of 37 people accounted for about 35%

The variable "Supervisor motivates employees" has 3.41 as the mean. Even though, this number is at the satisfied range, this equals to the minimum of the range. This is the sign showing that supervisors need to do more on supporting employees. With this fragile statistic, it is extreme easy for staffs to feel that their bosses do not encourage them at work. From there, they would not feel the joy while working. A difficult task would get easier with motivation from leader. Without it, an easy task would be finished with difficulties and excuses.

With "Supervisors assign works based on employees' skills and knowledge" the mean is 3.56. This shows the satisfaction in capacity and administrative management of the leader at the OMD. It is significant for a good manager to use the right person for the right task. If an employee can fit in the right job, it will be the best situation. The job will be done quickly and the employee can apply his skill and knowledge in the right place. Especially in team work, if the managers do not understand all team members' abilities, it will be the worst for the whole case. It can bring terrible results not only for the particular job, but also for relationships between colleagues.

It is no surprised seeing that "Supervisor is professional at work" has the highest mean value of 3.59. The reason for this high score is the number of totally satisfied employees. 16 people totally agree with this question. This is the highest score in the whole survey also.

The variable "Relationship between supervisors and employees is good" has mean of 3.52. This is relevant to the mean of "Coworker". Both show that OMD has a strong connected bond between people. The environment between employees and employees; and employees and employers is very friendly and comfortable.

In conclusion, the management team has positive effect on staffs. They know how to listen to employees, and encourage them to work harder. This is a good result, showing that the manager has understood to provide opportunities for qualified people. This is a strong point to keep people stay at the OMD.

The aspect of "Promotions and promotion opportunities" was surveyed on 5 variables: Training programs for new employees; Training programs for senior employees; Promotion opportunities; Fairness of promotion; Programs to develop employees' personal capacity.

3 variables about training programs have means in Neutral range. This makes the mean of the aspect is in range of neutral also. Even though, the other 2 variables have the satisfaction from employees, it cannot change the fact that, promotions and promotion opportunity of the Operation Management Department is just working ok.

"Training programs for new employees are available" is the variable has the most totally dissatisfied opinions by employees. 4 of them accounts for 4.76%. Some new employees might be unlucky by not able to attend training programs. Annually, there are 2 training programs on July and December. Thus, new employees who attend the Department a little later than December have to wait until the next July. At that time, these employees have already known knowledge which they would have been taught in the program. This might be the reason for the 4 highly dissatisfied opinions. Oppositely, there are 5 totally satisfied opinions accounted for 5.95%. These 5 people might be employees who have entered new training program right after they got accepted to the OMD. In general, period of time for 2 training classes for fresh employees are not reasonable. This leads to the neutral opinion of the first variable.

For "Training programs for senior employees are available", the mean is neutral also. 34 people which are 40.48% have neutral opinion. Related to promotions, it is necessary for seniors to have trained before promoted. Thus, only people who are in the list of promotion are able to participate in these classes. It is easy to know why this class can be available for some staffs, but it cannot for others.

"Opportunities to be promoted are various" are satisfied by most of employees in the OMD with the mean of 3.49. This is the highest value in this aspect. No one totally dissatisfied with this opinion. Only 5.95% (5 people) dissatisfied. This value approves that promotion opportunities in the OMD is transparent for everyone. Staffs know about it and they know how steps to turn that opportunities to reality. Normal staffs in the Department

can be promoted to team leaders, or Heads of Divisions or Departments. They can also be promoted to managers of unit companies.

Supported to the fact that promotion opportunities in the OMD are transparent for everyone, the variable “Promotion program is fair” gains satisfaction from staffs. The mean is 3.41. However, there are more neutral opinions. It is easy to understand. The fairness is difficult to identify. In many situations, it can be fair with one person, and it is unfair with another. 41 people which is almost half of the OMD’s employees have the same thought.

#### **4. Discussion and Conclusion**

Job satisfaction does not merely focus on satisfying one factor. It is the combination of many. 5 most fundamental aspects that the author has studied about are the work itself, promotions and promotion opportunities, supervision, coworkers, and pay. In order to reach a certain level of job satisfaction, it is necessary to harmonize those factors. Practical research shows that skillful employees are highly productive. But it is difficult for the company or the department to keep them working. Therefore, ensuring the increase of staff satisfaction in work, maintaining good human resources is a big task, which is considered the strategic goal of all enterprises and organizations.

Key Performance Indicators (KPI) for every employee need to be reviews monthly or quarterly aggressively. It will tell immediately whether the staff and the job are suitable. If the employee performs well, he or she should be encouraged and enabled to perform better. If the assessment shows inconsistencies between the employee and the position, the manager can carry out the rotation of employees in the OMD. He/ She should be assigned to different team or divisions for better outcome.

In terms of working time, there should be support for employees who do OT. The current overtime calculation is on weekends and according to work plans only. To motivate the employees, the OMD need to also count OT on weekdays also. And people who do not have the work plans but work on weekends also should be paid. These pays might be lower.

At present, the total monthly income of employees is calculated as the total of fixed salary, allowances (if any), overtime pay (if any), minus personal income tax (if any), social insurance, health insurance, unemployment insurance, union’s fee, and other advances and deductions (if any). But to improve employee satisfaction with payroll, the HR department should implement plans that cover additional pay based on KPIs. KPIs should be reviewed quarterly, monthly and annually. In order to record the level of accomplishment of an employee's work, assessment of competency/level, level of dedication, impact of the job position that the employee is undertaking, the Human Resources Department needs to immediately adjust staff pay on the principle of competing with other departments or companies of the same size. Salary adjustments are made in two rounds of the year, in May and October. The employee's salary adjustment must meet the following conditions:

- Employees have a minimum working time of at least 12 months (excluding unpaid leave, maternity leave, etc.) since the last salary adjustment at the company.

- Employees must achieve KPIs. Employees should not violate discipline or who are not subject to employee disciplinary action within the six months preceding the salary adjustment period.

- Adjustment rates are based on the difference between the employee's current salary and the salary reference as well as the level of employee completion.

In addition to a fixed monthly wage, employees may receive additional pay such as seniority allowance of 1% of total basic salary; additional staff allowance after each year of seniority; 1% per month but not exceed 8% per month. Seniority allowances are paid to employees who worked for more than 2 years at the Department.

Seat arrangement, birthday celebration, having lunch together are few basic activities that brings colleagues together. Organizing sports events, or attending volunteer activities, and social works are other options. These activities on weekend or holidays are joyful for staffs and their families. These actually are so profitable for the image of the Department and BVL. It helps to increase the value of the company.

Supervisors should listen to and acknowledge employees' opinions in order to give compliments when employees do a good job, and to have reminders when employees have not done their job well. Supervisors should show reasons why job is not done the way it is supposed to be done, and solutions for the particular case. Above all, Heads of Department or Divisions need to let people know that the OMD cannot be success without employees' values.

Listening to employees is essential to building the OMD's culture of behavior. Leaders listen to employees, encourage them to express their views and thoughts on the job, promote creativity in their work, and assist employees to complete their work. The work which is well-structured must be treated fairly with other employees'. For example, the OMD may organize programs called "Employee Gratitude Month" This is the event where employees and supervisors can be closer together. They can also talk, and share opinions, workload as well as recommendations for each Divisions.

Building a "One day supervisor" program for departmental staff so that as employees can understand the responsibilities. Thanks to that, employees will have sympathy to their managers and try to cooperate more. It also helps individual leaders to identify potential employees for appropriate remuneration policies and policies.

Develop and implement staff competency assessments at each division in the OMD. When the Department or the Company needs management level, priority should be given to internal employees based on the results of the evaluation. Promotion opportunities need to be transparent. This is a motivational tool that encourages employees to strive for the best in their work.

The Department should pay more attention to training professional knowledge and skills. All of employees at the OMD have training course of their positions. However, these courses are just an overview. They should be longer and more specific. Moreover, there are no courses to provide knowledge of different divisions. It is a prevention for employees when opportunities come to change positions in different divisions. Therefore,

it is necessary to have a clear training policy which is reasonable and appropriate to the reality. At the same time, it requires a professional training team with both professional qualifications and practical experience to improve the quality of training.

Develop a career development process for each position so that employees know what qualifications and skills they need to develop in order to be qualified for a higher position. Requirements for each position in the Department, even the Head of Department must have a detailed description so that each employee can grasp and constantly improve themselves. Information of pay, bonus or welfare for each position should be provided.

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# SOLUTIONS FOR HUMAN RESOURCE DEVELOPMENT OF MECHANICAL ENTERPRISES IN VIETNAM

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## **Abstract**

*To develop mechanical industry in Vietnam, it is a long process that needs to emphasize on four critical factors including human resources, technology, finance and distribution systems. In which, improving human resource is an important solution for sustainable development of each enterprise. Through survey, this article constructs factors affecting human resources development in mechanical enterprises in Vietnam. The self-report questionnaire was completed by 392 workers of 24 mechanical enterprises. After observing researches, the author indicates four basic factors including: (i) Technology, (ii) Motivation, (iii) Learning Culture of the enterprise and (iv) Abilities of employees. Therefore, the study suggests some recommendations for improving human resource development in mechanical enterprises in Vietnam.*

**Keywords:** human resource; human resource development, mechanical enterprise, Vietnam.

## **1. Introduction**

Over time, the development of the mechanical industry has always been the motivation for the development of many other industries. In the current trend of integration, the Vietnamese mechanical industry has been exposed to many limitations. The majority of enterprises have backward technologies, lack of domestic raw materials, low quality of human resources and weak management effectiveness, difficulties in mobilizing capital, developing markets and competition. In which, human resource development is one of the key solutions to improve capacity of mechanical enterprises.

Human resource development is one of the most important strategies for organizations to help employees gain proper knowledge and skills needed to meet the environmental challenges. The basic content of human resource development is to increase the value of human resources in capacity and quality. The primary goal of any training program is to impart to employees a new set of KSAs (knowledge, skills and abilities), behavior or attitudes. Developing employees' knowledge and skills through training is essential for organizations to successfully persist in today's challenging business world.

Training programs in organizations provide a variety of benefits. Organizations gain through the improved performance and increased productivity that accompany employee development, while employees enjoy extrinsic and intrinsic rewards associated with skill development and performance improvement (Elangovan et.al., 1999). Effectiveness is measured by how many training participants successfully apply their learning on the job

(penetration); how long training participants continue to apply the learning on the job (sustainability); and how quickly the organization will realize the benefits for the entire target audience (speed).

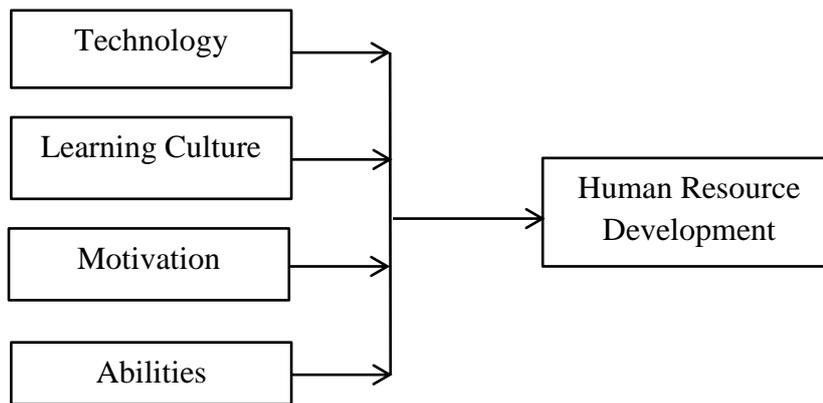
However, in order to have an effective human resource development program, every company needs to identify the factors that affect its. Mechanical enterprises also have their own characteristics, so doing survey and exploring basic factors affecting human resource development will help enterprises have solutions in the right direction and high efficiency.

The article will take investigation in order to build the key factors affecting the human resource development in the mechanical manufacturing enterprises. It recommends solutions to improve the efficiency of human resource development in those enterprises.

The General Statistics Office show that there are 16 762 mechanic enterprises in Vietnam, including 119 state-owned enterprises and 146 foreign enterprises. The total output of the whole industry was VND1,049,950 billion, of which VND314.77 billion came from domestic engineering, with more than 500 types of products such as machine tools, electric motors and metal products. We guaranteed 32.5% of domestic demand and 30% for export. In 2015 we import \$ 32.5 billion of mechanical equipment while the export value is only \$ 26.6 billion. In fact, if the domestic mechanical companies develop, occupy the domestic market, exporting will make a big revenue. At present, the output of mechanical engineering accounts for only 22% of the total industrial production value, while investment capital accounts for more than 16% and the labor force accounts for 12% with over 500,000 employees.

In terms of human resources and management capacity, the mechanical industry lacked the strength of R&D consultants and leading experts. Human resources in mechanical companies do not have suitable training and development plans. In addition, there is not a contractual cooperation between training institutions, laborers and employers; Employment structure in labor market is still unreasonable. Currently, mechanical enterprises face with serious shortage of research and development engineers, especially the forces of designers, general engineers or chief engineers for the whole design projects. On the other hand, our mechanical industry depends heavily on foreign supervisors and consultants. In general, the quality of human resources does not meet the requirements of high-tech manufacturing in the market mechanism. Moreover, the management level of owners of the mechanical enterprises is quite low, not active and sensitive to the competition. Strategic relation between enterprises in accordance with the basic principles of the process of production organizing in deep specialization and wide cooperation has not been paid attention and developed.

The purpose of this study is to identify factors that affecting human resource development and based on them, imply solutions for mechanical enterprises. The author shows 4 factors which are defined in Figure below.



### **1. Technology**

Technology is an important factor in assessing the production capacity, which directly affects the production quality. The technology reduces labor expenses, thus reduces costs of labor and raw materials, leading to business efficiency. The human factor of technology covers the knowledge, skills and habits of participants in the implementation of technology. Therefore, the development of human resources is to meet the demands of production technology in the enterprise. Technology changes, workers also need to adapt to master the technology. This ensures efficient exploitation of technology.

### **2. Learning Culture of the enterprise**

The learning culture of the enterprise is understood as the process of forming, developing and maintaining the interest of learning and improving the level of all employees in the enterprise. The role of leaders is very important in this process. Leaders and all managers of the company consider the human resources development as an investment activity besides do encourage self-studying and self-improvement. Moreover, the company builds a synergy between the colleagues in each unit. To what extent are supervisors involved in clarifying performance expectations after training; identifying opportunities to apply new skills and knowledge; setting realistic goals based on training; working with individuals with problems encountered while applying new skills; and providing feedback when individuals successfully apply new abilities (Holton et al., 1999). Research focusing on how individual differences and the work context influence informal learning is growing but incomplete. Informal learning provides opportunities for individuals to acquire knowledge and skills on-the-job through work-related tasks, activities and interactions with others (Tannenbaum et al., 2010). Van Noy et al. (2016) argue that informal learning is an efficient and effective way to learn because knowledge and skills necessary for effective performance can be obtained on a ‘just-in-time’ basis.

Informal learning is similar, yet unique, from other ways individuals learn in the workplace. Informal learning, continuous learning, workplace learning, deliberate practice and self-development all focus on individuals learning in anticipation of future needs and taking responsibility for learning (Orvis & Leffler, 2011; Raelin, 1997). Informal learning is more organic, continuous, and learner-driven than instructor-led training, the most prevalent type of formal training method used by organizations (Association for Talent Development, 2015). Informal learning typically occurs outside of a classroom context, the

learning approach and duration is determined by the learner, and learning may extend beyond the boundaries of the organization itself (Van Noy et al., 2016). Further, the learner determines what and when to learn and evaluates whether or not learning has been successful.

In learning culture, self studying is very important and it is a part of informal learning. We adopt Noe et al. (2013) definition of informal learning which is theoretically grounded and based on empirical studies that have shown that informal learning includes both self-focused and other-focused activities (Doornbos et al., 2008). Specifically, Noe et al. (2013) characterize informal learning as cognitive activities and behaviors that can be subsumed in three categories: learning from oneself (spending time reflecting how to improve one's performance and experimenting with new ways of performing), learning from others (interacting with peers and superiors to solicit feedback on ideas and devise strategies for performance improvement), and learning from non-interpersonal sources (reading trade publications and searching the internet for useful resources and information). Informal learning is both learner-driven and contextual in nature which means it is influenced by both individual differences and features of the work setting.

### **3. Abilities of Employees (Self-Efficacy)**

It is possible to say that the ability of the employee is an important factor influencing the effectiveness of human resource development. When employees are well aware of learning activities, they will achieve high academic efficiency as well as apply the knowledge and skills learned in work the best. People's judgments of their capabilities to organize and execute courses of action required to attain designated types of performance. Other researchers also suggested that the characteristics of trainees such as motivation and attitudes are more important to training success than are course's contents (Quinones, 1997).

### **4. Training Motivation**

The role of motivation for human resource development can not be excluded. The learning motivation of employees is the catalyst to increase training effectiveness. Learning motivation comes from readiness to attend the training course of the workers. If workers know the true benefits from their activities in human resources development, they will participate voluntarily and actively. Learning motivation from the business is mainly through the design of useful courses, increasing the value of learners in career after learning.

Some researchers indicated that if employees had no choice of participation, their training motivation would decrease (Guerrero and Sire, 2001; Quinones, 1997; Baldwin and Magjuka, 1991). So, they must know aim and content of each course before taking place. Clark et al. (1993) found that job utility and career utility have significant influences on employees' training motivation. Thus, training programs that are job- or career-related will influence employees' training motivation (Mathieu and Martineau, 1997). Noe and Wilk (1993) showed that the more benefits that employees feel they can obtain from participating in training activities, the higher their rates of participation in such activities.

One critical determinant of training effectiveness is the trainees' level of training motivation (Mathieu et al., 1993; Mathieu and Martineau, 1997; Tannenbaum and Yukl,

1992). Noe (1986) suggested that characteristics such as motivation and attitudes are malleable individual difference factors that play a critical role in achieving training effectiveness. Even if trainees possess the ability to learn the content of a course, they may fail to benefit from training because of low motivation.

Pay attention to motivating in the learning environment for learners besides demanding the necessary skills. Learners will have more motivation to learn what makes sense to them. For effective learning, it is essential to transfer the skills and behaviors of the training environment to the work environment in order to direct the worker to the aspects of the job. The author also emphasizes lifelong learning within the enterprise to ensure the opportunity to learn the skills needed to work and to expand the career opportunities of individuals. It is also important to note when designing and evaluating the training of human resource development in enterprises. Learning requires both ability and motivation, and the training program's design should consider both. Learners are more motivated to learn something that has meaning for them (Gary Dessler, 2016)

**Table 1: Summary of Factors affecting Human resource development in Researches**

<b>Factor</b>	<b>Author and year</b>
Self characteristics	A.R.Elangovan, Leonard Karakowski (1999), Jayawardana et al. (2008)
Lifelong learning, self efficacy	Phana Dullayaphut, Subchat Untachai (2012), Avram Tripon (2013), Noe et al. (2013), Gary Dessler (2015)
Technology	Graham Beaver and Jim Stewart (2004), Rosemary Hill and Jim Stewart (2000)
Learning culture	Tracey, J.B. et al (1995), Peter L. Jennings, Paul Banfield (1996), Graham Beaver and Jim Stewart (2004), Xiao J.(2005), Ji Hoon Song et al. (2012)
Support	A.R.Elangovan, Leonard Karakowski (1999), Xiao J.(2005), Jayawardana et al. (2008), Graham Beaver and Jim Stewart (2004)
Motivation	A.R.Elangovan, Leonard Karakowski (1999), Noe, 1986, Tsai, W. C et al. (2003), Jayawardana et al. (2008), Gary Dessler (2015)
Working environment	Noe A. Raymond et al (1993), A.R.Elangovan, Leonard Karakowski (1999), Jayawardana et al. (2008)

## 2. Methodology

The study used the descriptive method of research which describes factors affecting human resource development in mechanical enterprises as perceived by the respondents. It is also the result or findings. To study the realities of human resources of Thai Nguyen mechanical companies, the author conducted the survey at 24 mechanical companies in 2017. To determine sample size of population, we use the Slovin formula as below:

$$n = \frac{N}{1 + N * e^2}$$

n is the sample size.

e is the accepted error (5%).

N is the total population size.

So the sample size of population 17,319 workers was 392. We conducted a survey of the factors affecting human resource development in mechanical industry. The participants are managers, engineers and workers who work in mechanical enterprises in Thai Nguyen province. The survey collects the participants' the assessments of 4 factors affecting affecting human resource development in mechanical industry by using a 1-5 point Likert scale. Respondents would be presented in the column corresponding to the 5 point Likert scale which has 5 ranges.: 5: strongly agree; 4: agree; 3: Neutral; 2: Disagree; 1: strongly disagree. The questionnaire was designed and adjusted with the advice of 12 managers who are businessmen and professionals in the field of mechanics. The total number of questionnaires was 392. The method of collecting was to send questionnaires directly to interviewees, including managers (69 votes), engineers and mechanical workers (323 votes). After collection and cleaning, 376 valid responds were used for analysis.

### 3. Results

	<b>Factors</b>	<b>Mean</b>
<b>T</b>	<b>Factor Manufacturing Technology - Technology</b>	
T1	The company's technology always change	3.12
T2	Product quality depends on technology	4.06
T3	Technology determines the competitiveness of the business	3.87
T4	Training employees to update new technology is essential	4.11
<b>M</b>	<b>Factor Motivation</b>	
M1	Training helps me get things done more efficiently	4.11
M2	Training helps myself in developing career	3.84
M3	Being sent to study is my honor	3.78
M4	I look forward to the opportunity to learn more	3.89
M5	Achievement in my work is always recorded and paid appropriately	4.02
<b>C</b>	<b>Factor Learning Culture of the Enterprise</b>	
C1	Leaders consider training as an investment activity of enterprises	3.23
C2	The training process is designed and implemented well	2.94
C3	The line manager understands my work	4.12
C4	Learning opportunities for employees are fair	3.51
C5	Line manager always support staff when needed	3.94
C6	The company always encourages self-studying	4.23
C7	Retraining and additional training takes place regularly at the Company	3.79
<b>A</b>	<b>Factor Abilities of Employees</b>	
A1	I find myself able to learn fast	3.58
A2	I find myself better at work than my colleagues	3.31
A3	I always observe and learn from those who are better than me	3.85
A4	I am aware of and active in learning the knowledge and skills for the job	4.02

Technology: Results from the survey shows that although technology does not change regularly, it adds value to the business competitiveness. Then, training employees to adapt requirements of production is very necessary and in time.

Learning culture: In mechanical, most of managers are matured from working in production unit; so they know clearly about tasks of workers and can observe all aspects of their work. Managers encourage subordinates to self-study at work place as the main method to improve their performance. However, the training process is not designed and implemented in mechanical enterprises as well as needed. Furthermore, training budget in each enterprise is different, quite little in small and medium scale. This depends on what leaders' viewpoint and desire from human resource development.

Motivation: Majority of mechanical enterprises know how to make motivation for worker by using management's tools as compensation, and promotion.

Abilities of Employees: The ability of employees to make the most of the efficiency of human resource development as well as the effectiveness of the work. The application of knowledge and skills to work is largely dependent on their ability.

#### **4. Discussion and Recommendation**

The article has built factors affecting human resources development of mechanical enterprises, including: Technology, Motivation, Learning Culture and Abilities of Employees. These enterprises need to adjust these to have positive effects on goals of human resource development. In future studies, we will analyze the impact of these factors and their effects on training effectiveness.

The findings suggest that the availability of four factors above influence human resource development. The implication for managers is that they need to focus on creating and sustaining a continuous learning culture in their organizations, and provide the required support for employees in the acquisition and application of skills and knowledge in order to improve activities of human resource development.

#### **Recommendations**

From the research findings, we propose some recommendations for improving human resource development in Vietnam mechanical enterprises as follows:

In general, labors in mechanical enterprises have sufficient qualities, health and qualifications to work. Managers are also initially interested in human resource development to serve their business. However, this activity has many limitations which come from a number of reasons, as follow:

- The majority of mechanical enterprises are small and medium enterprises, so they have not paid much attention to human resources development in the medium or long term. Therefore, official fund for this is still limited.

- The policy and orientation for human resource development of enterprises are not good. In particular, human resource planning in long-term has not been implemented. The

training plan is only available annually, even on the spot. Training and retraining for laborers is not implemented regularly.

- The majority of mechanical enterprises perform evaluating results of work performance for the main purpose of compensation, not related to the objectives of human resource development.

- The policy of attracting talents of enterprises is not really attractive; recruitment process is not entirely rational and scientific.

- The awareness of employees about training and development is not correct. The ability to update professional knowledge of workers is limited, passive, so training results is in low efficiency.

In order to develop the human resources for mechanical enterprises in Vietnam, to meet the demands of development, it is necessary to pay attention to the following groups of solutions:

*Firstly*, to perfect mechanisms, policies and activities to support human resource development

First of all, each enterprise should develop specific training mechanism and policies to support training activities. In addition, the departments should coordinate with personnel department to carry out the staff assessment, make plan to use workers after training.

Improving the knowledge for HR staff should also be emphasized. At present, the number of staffs in the personnel department mainly graduates in the technical majors, so enterprises should organize more training courses of high quality, participate in seminars and conferences on human resource management. In addition, implement selection effectively to recruit qualified employees.

*Secondly*, improving human resource development activities

Mechanical enterprises should make plan for human resource development in both short and long term. Determining the actual training needs should be in accordance with the setting of standards, in comparison between job analysis and performance appraisal.

The objective of human resource training must be practical, feasible and suitable with the conditions of each enterprise; At the same time, it must be clear and easy to understand and have specific criteria for evaluation. The training should have a quantitative limit of learners, time and the number of courses to ensure that production is still taken place.

The selection of trainees is an important task, so it is necessary to develop criteria for evaluating the capacity of workers. It should be based on the production plan, personnel plan, the plan of each department or unit; Additionally, evaluating the achievements and capacity of employees to make a list of trainers for each unit. Encourage staff to self-assess to propose the required course.

The HR department is in charge for designing appropriate training programs, selecting teachers; organizing and monitoring the training process and evaluating post-

training. More modern training methods should be applied, with the use of short lectures combined with case studies, group discussions, key study exercises.

Evaluating each training program to see what has been not done and to take experience for the following programs.

*Thirdly*, improving the efficiency of human resource use

Establish and maintain a relationship between training institutions and employment institutes. It is necessary to investigate the need for employment, the demand for human resources, know the trend of labor market in the economy to have the basis for training and retraining types of labors. Enterprises can follow the above direction through the following contents:

- Attach training facilities to research, scientific experimentation and production. Promote vocational training and vocational training in high schools; To intensify scientific experimentation and production in professional schools; Encourage the linkage between schools and professional training institutions, production and service establishments.

- Through direct exchange with businesses, professional schools develop training plans on the size and structure of the profession.

- Expand training by address, training on the spot, overcome the imbalance in the distribution of human resources.

- Raise and nurture positive employee motivation in training and career development. In particular, creating conditions for workers to work, earn high income can even get rich from their own career is considered the most meaningful and consistent with the current trend./.

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# QUALITY OF STAFF OF FARMERS ASSOCIATION OF HAI DUONG PROVINCE: STATUS AND SOLUTIONS

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## **Abstract**

*Farmers Association of Hai Duong Province is a socio-political organization, protecting legitimate rights and interests of over 300,000 farmers in the province. Activities of the associations have brought farmers access to new technology, linking farmers' activities with programs and projects on socio-economic development, loans and creating jobs. In order to help many farmers transform their agricultural economy, farmers actively participate in the movement of building new rural areas, enhancing cultural and artistic activities, sports and physical training. This is a solid foundation for political stabilization, social order and safety, as important preconditions for speeding up industrialization and modernization of agriculture and rural areas in Hai Duong province. In addition, there are still shortcomings such as the number of staff at all levels have not met the requirements, limited capacity of expertise, skills, practical experience is lacking. The movements are unevenly developed in localities, which have not yet aroused the potentials, creativeness and activeness of farmers. The shortcomings are rooted in many causes. The reason is that the personnel quality at the provincial level and at other level has not met the requirements in the new situation. Therefore, it is necessary to analyze the current situation in order to propose suitable solutions to the current socio-economic situation.*

**Keywords:** *agriculture, farmers, province, quality, technology, socio – economic.*

## **1. Introduction**

Hai Duong province is located in center of the Red River Delta, which has favorable economic and geographical position, has many advantages in trade exchange with northern key economic triangles as well as neighboring provinces. Hai Duong is located on total area of 1.651km<sup>2</sup>. Total land area is 165,477 ha, of which agricultural land is 106,577 ha, non-agricultural land is 58,165 ha. There are 12 administrative units in whole province, including 10 districts, 1 city and 1 town. Of which two mountainous units are Chi Linh town and Kinh Mon district. The total number of communes in the province is 265, of which 24 are in mountainous communes.

In order to build up the organizational structure of the association at all levels in the province to meet the requirements during renovation, the Farmer Association of the province also introduce the viewpoints and solutions to improve the quality of the staff of the Farmers Association at all levels. These aspects are to improve the quality of the staff of the Farmer Association at all levels must come from the point of view of the Party.

Development and improvement of the quality of the staff of the Farmers Association at all levels must be based on the long-term and comprehensive development strategy of the association, especially in the period of accelerating the industrialization and modernization. the Farmers Association should be stronger to meet the role of organizing farmer movements and activities of the Association. Improving the quality of the staff of the Farmer Association at all levels must be based on knowledge, mindset and force ... and be carried out synchronously from recruitment process. This is followed by training process in order to equip new knowledge and skills while well arranging and using the right personnel effectively, in line with the position and practical capacity.

## **2. Research methods**

The article uses a combination of research methods such as synthesis, comparative analysis from collected data sources, using statistical techniques, extrapolating forecasts to analyze and evaluate the processing of collected information. Set up forms, charts during the study. The statistics are collected through the statistics and reports published by the Organization - Inspection Board of the Farmers Association of Hai Duong Province. Through the data collected to analyze the quality status of the staff of the Farmers Association in Hai Duong province. On the basis of data analysis, evaluation, comment and solution should be followed.

## **3. Current status of the quality of the staff of the Farmers Association of Hai Duong province**

The Hai Duong Farmers Association has tasks such as propagandizing and educating officials, members and farmers about the Party's guidelines and policies, regulations of the Farmers Association; In order to stimulate and promote the tradition of patriotism, revolutionary will, self-reliant spirit, creative labor, enrichment and support to develop the production of members and farmers during industrialization and modernization.

- Mobilizing, gathering and acting as the core for organizing farmer movements for socio-economic and cultural development, building new rural areas, building a family of cultural farmers; Caring for the material and spiritual life of members and farmers, participating in the planning and implementation of policies and programs for socio-economic development of the State in rural areas; Participating in the cooperative economy, the cooperative organized activities to support the farmers and mobilize the farmers to exercise the rights and duties of the citizens and participate in the movement to protect the fatherland.

- To gather farmers to join the Association, improve the number and quality of members. To build a strong association and organize the study and training to raise the scientific-technical and professional levels in production and business for members and farmers; Training and fostering professional staff to meet the requirements and tasks of the industrialization and modernization of the country.

- Based on the guidance of the Vietnam Farmers Association, the provincial Farmers Association has the duty to directly consult the provincial Party Committee and the provincial authorities to work out the contents and programs of the Association and the

movement in accordance with the actual situation in the locality. The Provincial Farmers Association is responsible for directing the professional guidance to district-level farmers' associations in the process of implementation.

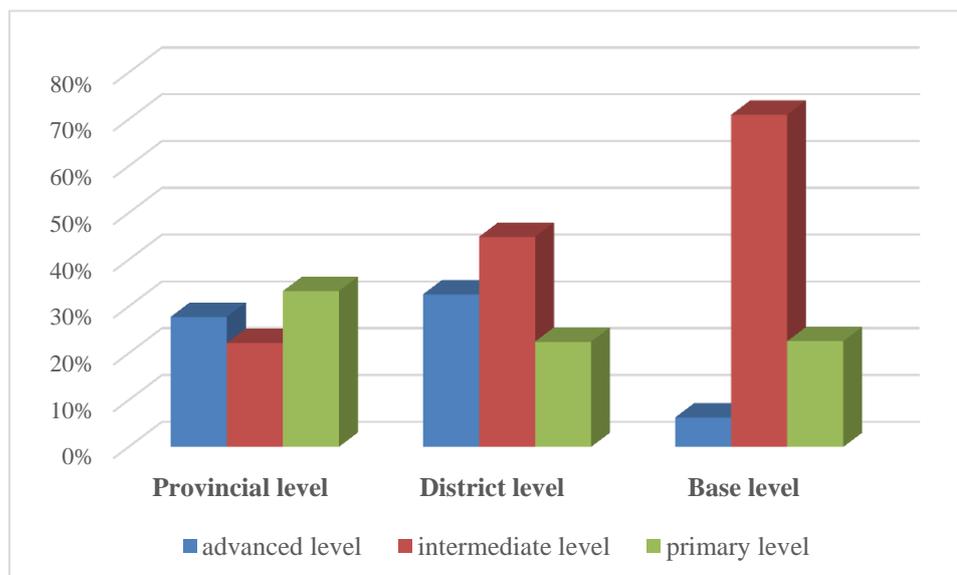
**Table 1: Qualification of staff at all levels of the Hai Duong Farmers Association**

	Year 2008			Year 2017		
	Provincial level	District level	Base level	Provincial level	District level	Base level
<b>1.Total</b>	<b>20</b>	<b>46</b>	<b>256</b>	<b>18</b>	<b>49</b>	<b>256</b>
- Female	6	27	13	6	25	29
- Male	14	19	243	12	24	227
<b>2. By educational level</b>						
- PhD	0	0	0	0	0	0
- MA.	0	0	0	3	9	0
- Universities and colleges	19	37	14	14	39	115
- Vocational training schools		5	94	1	1	101
- Preliminary vocational training schools			34			
<b>3. By political theory level</b>						
- Bachelors	5	9	0	5	16	16
- Vocational training schools	3	27	101	4	22	182
- Preliminary vocational training schools		4	146	6	11	58
<b>4. By age</b>						
- Below 31	3	12	0	2	5	1
- Between 31 and 40	7	8	19	9	23	30
- From 41 and below 50	6	12	95	3	10	92
- 50 or more	4	14	142	4	11	133

*Source: Organization - Inspection Division of Hai Duong Farmers Association in 2008 -2017*

According to the results of the table, the level of education and political theory at all three levels has increased remarkably. It can be seen that the contingent of staff in the provincial Association of Farmers' Association are basically trained, regular, qualified, responsible and enthusiastic in their work. In addition, there are still some young staff who have limited skills in advocacy and have no practical experience. In fact, the capacity to consult, propose, participate in the formulation, policy monitoring, social feedback; The capacity for concretizing local content of some key staffs is still limited. The allocation of payroll norms is not harmonious among localities and localities have many clues but they are only assigned with local officials with few basic clues. Some localities have not really paid much attention to the training and use of the staff of the association. In recent years, the quality of grassroots staff has been improved and the level has been improved, basically meeting the standards requirements for civil servants.

**Chart 1: Political theory level of staff of Hai Duong Farmers Association in 2017**



Regarding staff with political theoretical qualifications, only in 2017, the provincial level will have 27.8% of the staff of advanced level, 22.2% of the intermediate level and 33.3% of the primary level. At the district level, 32.6% had the advanced level, 44.9% of the intermediate level and 22.5% of the primary level. Grassroots level is 6.3%, intermediate level is 71% and primary level 22.6%. In addition, the level of education of staff at all levels is different, as can be seen in the table below:

**Table 2: Education level of staff of Hai Duong Farmer Association**

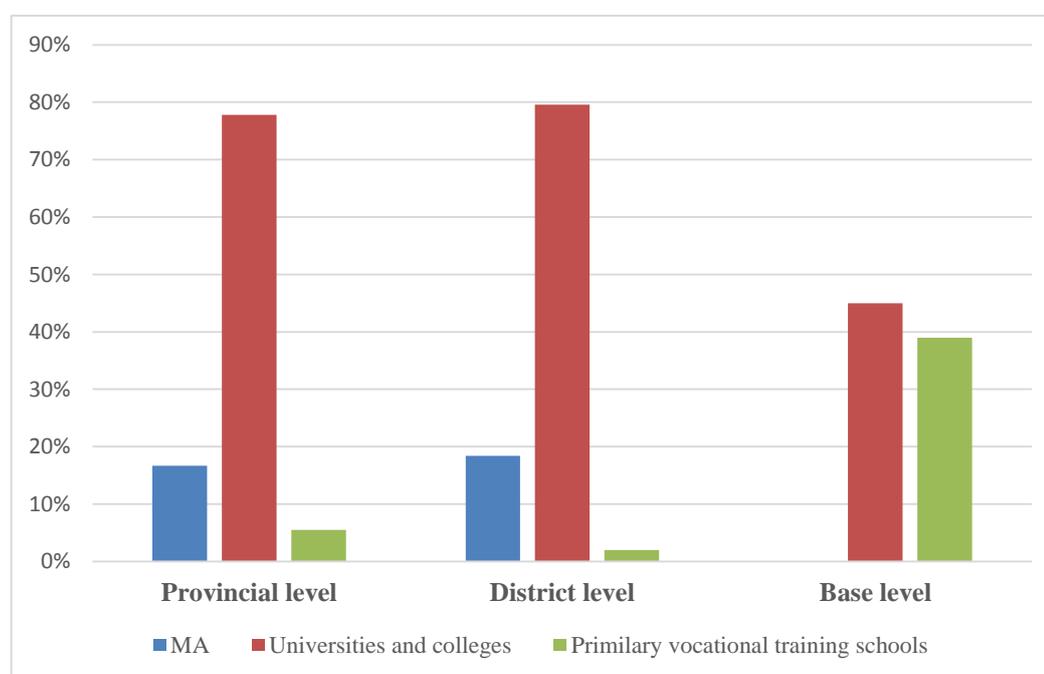
Year	Qualification	Level	Province	Districts	Bases
2008	<b>Total</b>		<b>25</b>	<b>46</b>	<b>256</b>
	MA	Quantity	0	0	0
		Rate %	0	0	0
	Universities and colleges	Quantity	19	37	14
		Rate %	76	80,4	5,5
	Intermediate and primary vocational training schools	Quantity	0	5	128
Rate %			10,9	50	
2017	<b>Total</b>		<b>18</b>	<b>49</b>	<b>256</b>
	MA	Quantity	3	9	0
		Rate %	16,7	18,4	0
	Universities and colleges	Quantity	14	39	115
		Rate %	77,8	79,6	45
	Intermediate and primary vocational training schools	Quantity	1	1	101
Rate %		5,5	2	39,4	

*Source: Organization - Inspection Division of Hai Duong Farmers Association*

It can be seen from the table 2 above that most of the provincial and district staff are well educated from universities and colleges. The education level is an important factor to

assess the professional level of staff. Through surveys and statistics, it can be seen that the staffs of the association have not appreciated the possibility of gathering farmers, organizing the implementation of directives, resolutions and policies. It may cause from qualifications of district and grassroots level staff in gathering farmers, guiding and organizing farmers to well implement the directives, resolutions and guidelines of the Party and the Association; besides, a number of staff who do not work hard, are lazy in thinking, there are many documents in the process of receiving and handling not shown the responsibility, even leaders after the meetings do not read carefully such documents. This shows the general situation when many staffs have not created themselves a basic knowledge base, really good to be able to master professional knowledge. This situation can be attributed to the fact that many staffs of the Association, especially the grassroots level are at old age, mainly working with experience, not trained, fully trained to build for themselves the ability. This will directly affect the professional quality and efficiency of work. Whole farmers movement are implemented more quantitatively rather than qualitatively, it must improve their level in all aspects.

**Chart 2: Educational background of staff of Hai Duong Farmers Association in 2017**



Normally, higher education staff will have better understanding of science, society, ability to learn, apply knowledge, and use better skills in the workplace. In terms of educational level, the rate of education has increased at all three levels. The proportion of provincial staff with master's degrees increased from 0% in 2008 to 16.7% in 2017, from 0% in 2008 to 18.4% in 2017, the level of the university and college level increased from 5.5% in 2008 to 45% in 2017.

Over the past years, the Provincial Farmers' Association has implemented a number of measures in terms of staff of the association, from recruitment, evaluation, training, improvement, planning and appointment of cadres and other staff policies.

- On receiving and assigning tasks to staff, the provincial Farmers' Association has successfully carried out the reception of civil servants. After the decision of recruitment of the provincial Party Committee, the Standing Committee and the leaders of the provincial Farmers Association have meetings to assess the quality and capacity of each staff and agreed to make the decision to receive and assign tasks for each staff to ensure that it is suitable with the capacity and level of training.

- Regarding staff assessment, it always is keep abreast of legal documents and regulations of the Central Committee and the provincial Party Committee for evaluation. The evaluation shall be based on the assigned responsibilities, tasks and results of each staff, ensuring the principles of objectivity, fairness and impartiality. Through staff assessment, the advantages and disadvantages of each staff to timely overcome, repair. Annual civil servant evaluation records are kept in the staff records. This is one of the bases for planning, training, retraining, appointment and transfer of staff.

- In terms of training and upgrading of staff from 2011 up to now, the Provincial Farmers Association has sent 6 comrades to participate in professional training courses. In particular, 5 staff joined in master's programs, one staff joined in university. There were 10 staff who were sent to participate in political theoretical classes ...

- Regarding the planning, appointment or transfer of staff, in recent years, the provincial Farmers' Association always apply in a scientific and rational manner. Including the staff policy, the Farmers' Association always encourages the staff enthusiasm, offer position allowance, reward ...

#### **4. Limitations**

In addition to the results achieved, the staff at all levels still have many limitations that need to be overcome as follows:

- In terms of professional qualifications, the ability to gather farmers, organize the implementation of directives, resolutions and guidelines of the Party and the Association is limited at both the district and grassroots levels. On training, especially in the field of agriculture, social work ... According to the assessment of grassroots level, it is not guaranteed, the district level's self-assessment is not high.

- Regarding the morality of the profession in terms of saving, integrity, justice, impartiality, corruption and fight against corruption, criticism and self-criticism are still hesitant, not dare to give serious solutions. Being active in learning, updating and improving knowledge, capacity building, professional level have not reached yet.

- In terms of occupational skills, criteria such as the ability to predict and direct the development of thoughts, emotions as well as mental status of farmer members, skills in applying information technology to work have not been met at grassroots level, especially criteria such as reporting skills, problem analysis skills, forecasting factors affecting the Association's work and the skills of observation and evaluation. the activities of subordinates and professional skills on inspection, supervision, the implementation of special topics on staff work at district level did not meet requirements.

## **5. Main solutions to improve the quality of the staff of the Farmers' Association at all levels in Hai Duong province**

### **➤ Strengthening political education**

Strengthening the education of political ideology, raising awareness of Marxism-Leninism, Ho Chi Minh's thoughts, building the contingent of cadres of the Farmers' Association with stable political background revolutionary spirit, sense of discipline and capacity to fulfill well assigned tasks. Organizing professional development courses on political theory and professional skills for the staffs of associations at all levels, striving to 2030, the percentage of staff of the provincial Farmers' Association has the political theoretical degree from the intermediate level. Up to 70%, of which bachelor degree or advanced theory account for 40%.

### **➤ Improve policies on training course**

Provincial Farmers Association should pay attention to the training and fostering of professional qualifications and management capacity, leadership for the staff of the Vietnam Farmers Association at all levels to meet the requirements and tasks of the Association in the period of industrialization, modernization and international integration. Based on the fact that the Association's staff are still weak in training, especially in the fields of agriculture and social work, it is necessary to continue building and perfecting the policy on training courses. To communicate and mobilize staff of the Farmers Association at all levels on the role and importance of personnel training, while actively participating in training and retraining programs on knowledge and skills to improve the level. It is necessary to renovate and improve training methods, professional training and fostering for staff of associations at all levels depending on each specific level.

➤ Improve standards framework for quality evaluation of farmers association and conduct quality assessment of staffs in accordance with the standard framework.

For the staff assessment of the Hai Duong Farmer Association in the past few years, mainly based on the self-review, review of staff and evaluation of the quality of party members at the end of the year, the construction of criteria Evaluation and remarks of staff have been researched but the standard framework for assessing the quality of the association's staff has not yet been established. Therefore, the assessment of staffs of the Association is sometimes general and emotional, even when building the project, the work of each staff members are difficult to identify with the role, the actual job position of each staff.

### **➤ Good implementation of policies for the staff of the Farmer Union at all levels**

In the work of the association and the farmers movement, the role of grassroots staff is a key factor that needs to be strengthened and built to meet the requirements of each position. Need to build a team in the Executive Committee of the Association has the ability to arouse the masses, promote collective wisdom, high prestige with members, farmers, political opinions and creativity at work. It need to select and foster to have qualities, capabilities, and tasks. Caring for the health of the staff of the Association by organization of annual healthcare for the staff of associations at all levels, organization of

cultural activities, sports and physical training, offering good psychology for the staff of the Association. At the same time, to fully implement the regime of health insurance and social insurance for its staffs. To well perform the task of receiving and assigning tasks to the Association's staff, ensuring that they are strictly democratic, fair, open and in strict compliance with the regulations on selection and selection of staff to meet work requirements and farmer movement in the new situation.

In short, in the current phase with the goal of reforming the state, reforming the national administration, reforming and improving the organizational and operational efficiency of the political in a strong manner, requiring the staffs in general and the staff of the Farmers' Association in particular to have sufficient qualities and qualifications to play an important role in the implementation of policies and guidelines of the Party and the policies and laws of the state. Therefore, improving the quality of the staff of Farmers Association at all levels of Hai Duong province is an urgent requirement in the context of industrialization - modernization and international integration today.

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# **AFTER SALES SERVICE IN MARKETING CHANNEL: CASE STUDY HONDA VIETNAM COMPANY**

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## **Abstract**

*Founded in 1996, Honda Vietnam is a joint venture between Honda Motor (Japan), Asian Honda Motor (Thailand) Co., Ltd. and Vietnam General Motors Corporation. Main products of Honda Vietnam include motorcycles and cars. After nearly 20 years in Vietnam, Honda Vietnam has constantly developed and become one of the leading companies in motorcycle production and automobile manufacturers in Vietnam.*

*Besides product quality, good customer service organization and management is key for business success. However, it lacks a systematic analysis on the automobile distribution management. This research, therefore, focus on customer service policy of Honda Vietnam company and suggest recommendation on better customer service improvement decisions, which will help the company to stabilize and compete in the new phase of development.*

**Keywords:** Automotive industry, Honda Vietnam, Marketing channel, Service quality

## **1. Introduction**

The automotive market of Vietnam is still estimated undersized with the over 20% growth pattern and more Vietnamese clients with intention to buy a car. This context reveals the prospective future for foreign investment and assembling operations to break through the barriers for Vietnamese market penetration. Today, there are 14 OEM (Original Equipment Manufacturers) brands with local passenger car production in Viet Nam, even though only 244,914 units were sold in 2015. Up to now, the market has not fulfilled car makers' expectations and the sales volume of individual brands is fairly limited by international comparison (Martin SCHRÖDER, 2017).

In 2018, the import tax on cars of less than 16 seats will be 0% for vehicles imported from the Asian region. Vietnam automobile market has encountered many difficulties, the competition gets fiercer than ever with more discount and promotion campaigns by the car manufacturers such as Toyota, Honda, Mazda, and Hyundai. (Honda Motor Vietnam Co., Ltd, 2016).

In such a competitive context, product quality is not enough. Organization and management of customer service become critically important. Hence, automotive companies started to measure the value of their customers in seeking to increase their profit

(Hawkes, 2000; Kim et al., 2006; Verhoef and Donkers, 2001). The customer value has been described as the difference between the benefits acquired from targeted customers for the sake of the enterprise and the burden costs in attracting and serving customers (Juehling et al., 2010; Kotler, 2000). As a result, establishing continuous and developing connections with customers will be positively cultivated in the return of investment, customer retention and even enhancing the brand image. In this regard, accomplishing high customer satisfaction level requires producing high quality of products (Hendricks and Singhal, 1997). Therefore, the research on customer service policy of Honda Vietnam Company to make better decisions on customer service improvement is essential for the company to stabilize and compete in the new phase of development.

## 2. Research method

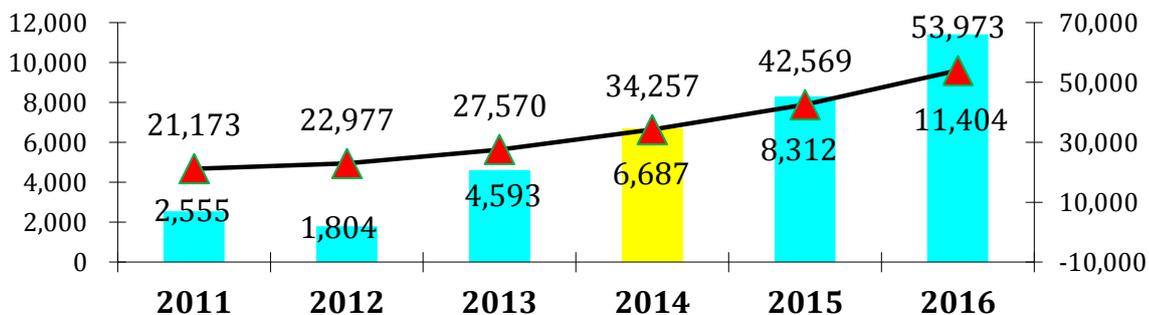
This article uses documents as a qualitative data source in research and discusses document analysis procedure in the context of actual research experiences. The application of document analysis to a grounded theory study is illustrated. We use secondary data: Statistics, reports from various sources: General Statistics Office of Vietnam, data from departments of Honda Vietnam Company, data from Minister of Trade and Industry and VAMA...

This article also uses the case study method. It is an empirical inquiry that investigates a phenomenon within its real-life context. The Honda Philosophy consists of Fundamental Beliefs (including "Respect for the Individual" and "The Three Joys"), the Company Principle, and Management Policies. Driven by its dreams and reflecting its values, Honda will continue take on challenges to share joys and excitement with customers and communities around the world to strive to become a company serving well the society. To enhance customer satisfaction, Honda Vietnam conducts customer satisfaction surveys in some product segments in Vietnam such as: motorcycles and automobiles. Results from the surveys are fed back to the departments involved to work out practical suggestions for improving daily performance.

## 3. Result

### *Overview of business situation of Honda Vietnam Company*

After more than one year since the license was granted, Honda Vietnam has successfully built a factory, dealer network, training programs for sales, service and driver safety for dealers' agents.

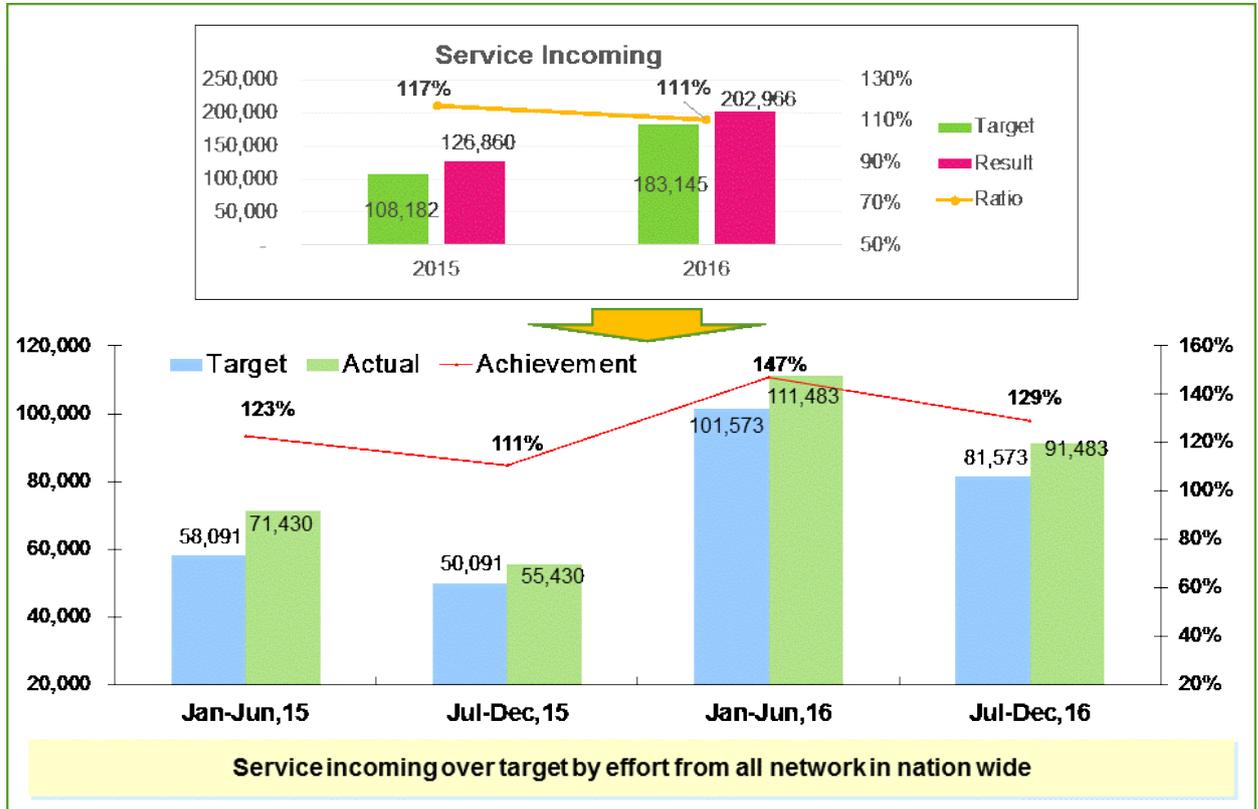


**Figure 1: Total number of Honda cars sold in Vietnam**

(Source: Honda Motor Vietnam Co., Ltd, 2012-2016)

***Incoming service at distribution channel in 2015 & 2016***

In 2015 we reached 126,860 customers using maintenance services, which exceeded the target of 117%. In 2016, we reached 202,966 customers using maintenance services, with an exceed of 111%. This is result from the effort of the whole nationwide network (Honda Motor Vietnam Co., Ltd , 2016).



**Figure 2: Honda Service incoming**  
(Source: Honda Motor Vietnam Co., Ltd, 2015-2016)

To achieve our strategic goals in 2015 and 2016, we had paralleled our factory operations and promoted the agency's operations. For Honda Vietnam, we had reinforced DLRs' activity every month, improved PM mobile activities, provided customer training on the importance of PM, took service campaigns. For dealers, they had reinforced some activities like conducting PM mobile and internal service campaigns, programming for appointment customers, improving DLR image for better comfort of customers, enhancing daily operation management.

***Customer satisfaction index 2015 & 2016***

Honda Vietnam always care about the customer satisfaction index (CSI). We will explain about the customer satisfaction index in 2015 and 2016 to show the efforts of Honda Vietnam and dealers in the system.

1, Analysis customer survey (CSI) 2015 & 2016

92Ki vs 93Ki

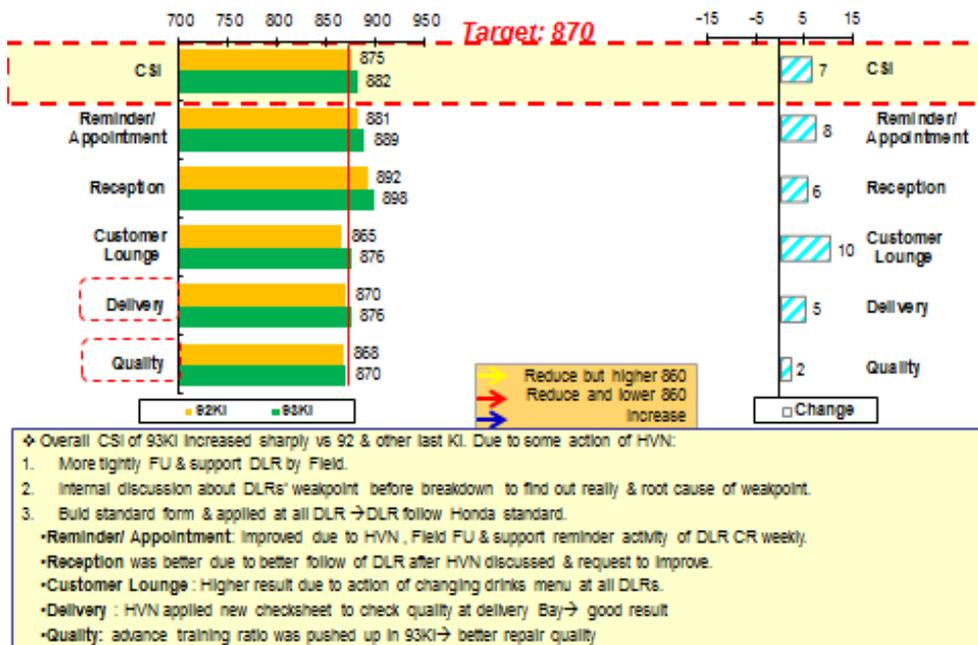


Figure 3: Honda – Customer Satisfaction Index, 2015-2016

(Source: Honda Motor Vietnam Co., Ltd, 2015-2016)

The chart of survey result shows that customer satisfaction index when approaching Honda Dealer tend to increase from the second quarter of 2015 and exceeded Honda's target. but it had big gap between best Dealer with worst Dealer. In 2016, Honda recognized the need to improve its dealerships to reduce the gap between Dealers and increase customer satisfaction Thanks to these actions, the result in 2016 had changed significantly and exceeded the expectation.

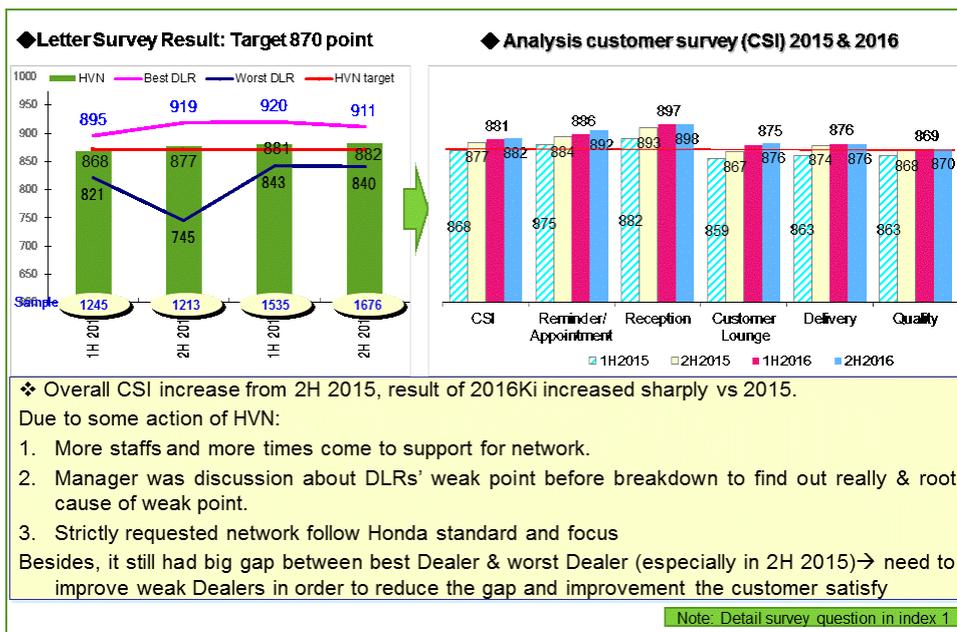
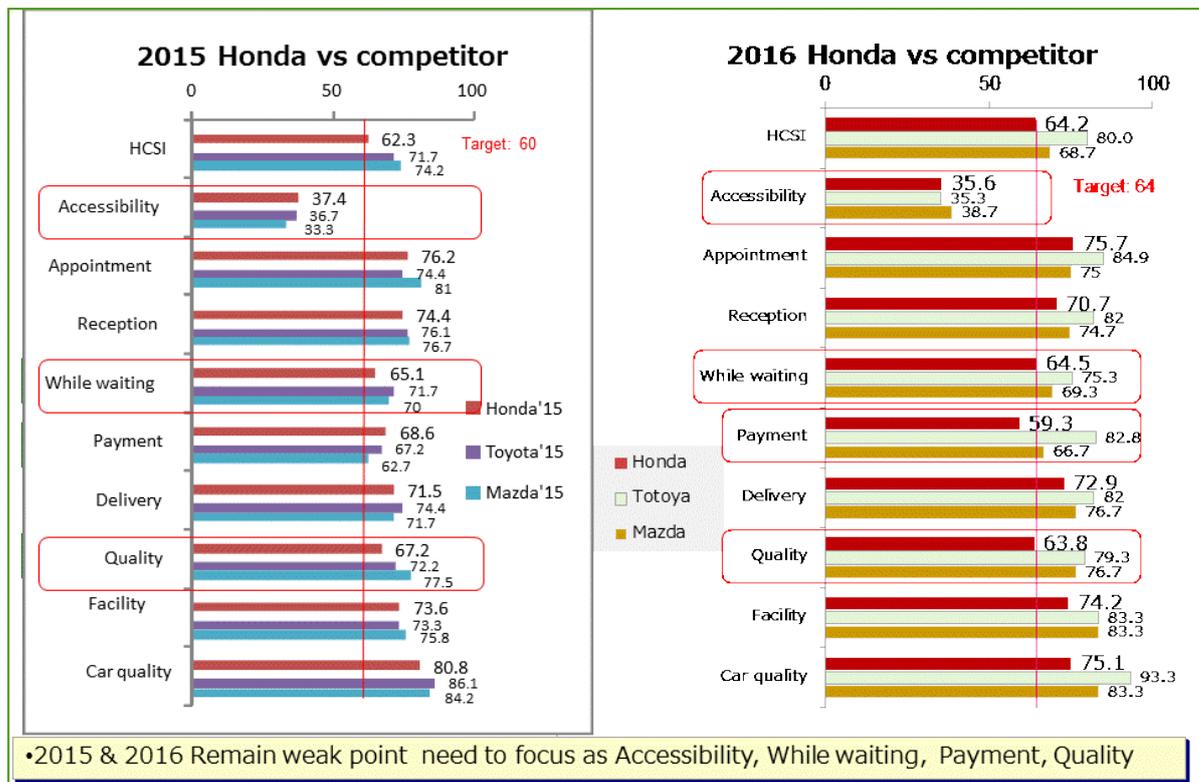


Figure 5: After sale operation: Letter survey Result - Customer satisfaction index (CSI) 2015 & 2016

Honda had set specific measuring criteria of customer satisfaction such as: reminder, reception, customer lounge, delivery and quality with a target of 870 points. After the analysis, the criteria in 2016 increases compared with 2015. In addition, some criteria had been increased, but not significantly higher than other criteria. By evaluating these weak points, we analyzed the weakness to figure out proper solutions to treat them. For example, with the weakness of customer lounge, we found that the skill of lounge staff was weak, and we had taken some activities like hospitality training and internal training for new staffs. After we took the action, we always check the result and take the picture if necessary.

***Evaluation of Honda service quality in benchmarking with competitors***

First, we took the primary market analysis between Honda and its competitor. The research time was in 2015 and 2016. The content of research was Honda CSI overall, DLR comparison and weak area. We used the method of face to face interview with the customers. We interviewed 690 customers in 2015 (Honda: 390; Toyota: 180; Mazda: 120) and 750 customers in 2016 (Honda: 450; Toyota: 150; Mazda: 150). We also used our CSI survey process and category ratio like.



**Figure 7: Honda service quality vs competitors**

(Source: Honda Motor Vietnam Co., Ltd, 2015-2016)

With the weakness of DLRs like accessibility, waiting time, payment, quality. We already asked DLRs to make countermeasure and follow up monthly with check sheet to make sure improvement. We also produced the letter survey every 2 months. In 2016 we did some on job training for staffs during visiting DLRs and continued some actions for weak points in 2015.

### ***Evaluation of Honda service cost with competitors***

In addition to evaluating service standards, Honda also analyzed the service prices with competitor. First, let's review about the labor cost between Honda and Toyota from 2014 to 2016. In 2014 the labor cost in Honda was 180.000VND and Toyota was 230.000VND. In 2015 the labor cost in Honda was 200.000VND and Toyota was 230.000VND. In 2016 the labor cost in Honda was 230.000VND and Toyota was 250.000VND. This means that the average labor cost of Honda is always less than the labor cost of Toyota. It was equal to 25% in 2016. This made the customer satisfy, because they got the good service with lower price.

For periodic maintenance (PM) price (PM Part & labor) between Honda versus Toyota, the PM cost of Honda standard is less than Toyota competitor by 12%. So, we can say that Honda service price is more attractive than Toyota.

### ***Customers' rating of service networks over competitors***

We survey the number of dealers of the main competitors. Toyota's service network has 46 dealers nationwide, Mazda's service network has 39 dealers, meanwhile Honda has only 19 dealers nationwide. That means Toyota has more advantages about the network compared with other Japan companies and Honda is the weakest.

With that challenge, Honda will open more dealers to deal with competitors. In 2017 we have 19 dealers nationwide. We will increase the dealer in the coming years: 28 dealers in 2018, 38 dealers in 2019 and 46 dealers in 2020 to compete with other companies.

### ***Evaluation of customers' expectation and Honda's level of meeting***

For the standard service procedure, it includes 8 steps: reminder, appointment, reception, estimation, while waiting, final check, delivery and follow up. There were 8/8 items that customers satisfy with Honda and there were 3/8 items that customers do not satisfy with Toyota. That means Honda operation is better than Toyota. However, CSI of Honda was a little bit lower than Toyota due to:

- Dealer network of Toyota is larger than Honda's (Toyota 46 DLRs, Honda 19 DLRs).
- Repair quality of Toyota is little bit better than Honda's. Therefore, Honda will consider on following items to beat competitors
  - Opening more dealers in provinces to widen dealer network.
  - Recruiting manpower of HVN instructor to enhance advance training activity

In service for customer, we take 3 categories such as facility, customer care and utility to compare with Toyota. With each category, we give out the max items and count the percentage. Honda in facility gets 100% but Toyota only get 73%. Customer care: Honda: 83 %; Toyota: 50%; Utility: Honda: 90%; Toyota: 60%. So, we can see that Honda take care of customer better than Toyota.

#### **4. Discussion and Conclusion**

In conclusion, although with the efforts in improving the network, quality of service as well as development of agent system, Honda has achieved encouraging results, it remains 3 main issues that need to improve. Weak point remained in almost service process, profit in network was negative and network for service was very small comparing with competitors.

When finding the issues, we took the discussion to find out the root causes for these issues and countermeasure for these.

First, weak point remained in almost service process. We defined that there were 6 main root causes. We did not have standard for field staffs following up the service network. KPI management did not have standard and the dealers controlled themselves. Repair quality was low comparing with competitors. It did not have clear check sheet before delivering. The process service did not control as standard. Honda factory had weak support for network. For these root cause, we discussed to find out the suitable countermeasures to enhance service process control.

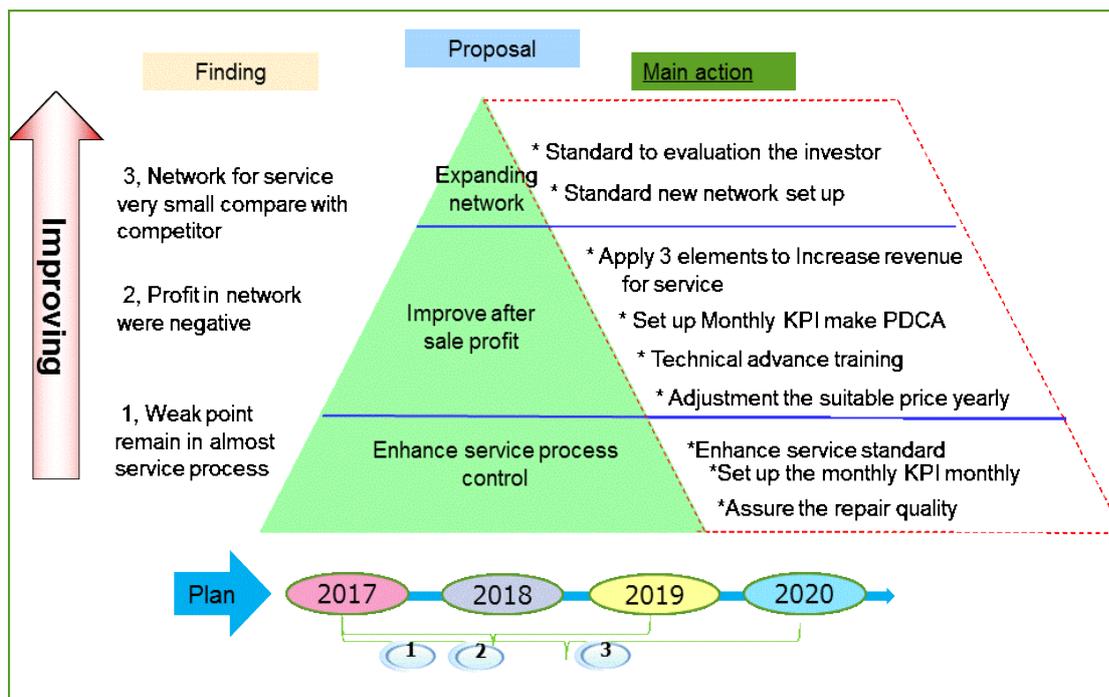
Second, profit in the network was negative. We found the root cause as follow: we lack knowledge for the network staffs and it did not adjust the price yearly. And the solution is to improve after sale profit, to train for the network staff knowledge of business, to consider about adjusting the price yearly.

Third, network for service was very small comparing with competitors. Reviewing process for qualify the candidate for building the service network and reviewing the standard to set up service network were the main root causes for the issue. Our action plan for this is to prepare for open network, to assure the repair quality by focusing on final check before delivery, to make standard for building new service network.

From above detailed analysis, the main weaknesses are service process, after sale profit and low network in comparison with competitors. Based on those, there are propositions to deal with these issues for improved service activities, which will increase the operation profit and cope with on the Vietnamese Market during 2017-2020. (The summary of weaknesses and solutions are presented in the table.

To facilitate a process-oriented perspective, waste-free After Sales Service should already be considered in the After-Sales Service planning. In the field of service planning, the development and documentation of service processes (process visualization and definition, reporting guidelines, process descriptions and repair instructions or process managers), technical instructions and drawings, development of country-specific guidelines, provisioning of spare parts or spare parts pricing are carried out, to provide After Sales Service employees with necessary tools and instructions for solving customer problems.

To get the CSI No 1, 3 countermeasures should be taken strictly. Each solution has important criteria. We must work hard and stick to it with periodic inspections to find out the root causes and provide timely solutions.



**Figure 8: Summary main weak point and proposal**

***First solution: Enhance control of service process***

Company should enhance the service process control. PDCA process application in service controlling the KPI system help to evaluate the effect of the process.

How to supply high service quality for customer is a big question for any automobile firms. The first thing we do is to enhance the service process. We follow the 8-step process as a standard criterion such as: 1. service reminder → 2. service appointment → 3. car reception → 4. repair order → 5. job control → 6. final inspection → 7. delivery → 8. follow up. On the other hand, we set up the monthly KPI and follow that. We come to check and discuss the target with dealers every month.

Moreover, we assure the repair quality by using the final check sheet which will be printed and handed over to the staffs for controlling purpose. After repairing, they must check all the repair parts and sign on the check sheet, which make sure that we can control the repair quality.

***Second solution: Improve after sale profit***

First, we find out 3 elements that increase service revenue. Increasing the number of visit per customer, increasing the revenue per visit, increasing the number of customer are 3 elements to increase after sales profit. When we have more profit, we can give better service for customers. Second, we use PDCA and monthly KPI to control the target of each dealer, each item in the service process. Third, the staffs are trained when they are recruited but they still need to focus on the advance training. The training will help the dealer to improve their quality of service. Fourth, review the price with competitor and then consideration for yearly price adjustment.

***Third solution: Distribution channel strategy and open network preparation***

Cost and customer-service improvements are necessary but not sufficient to transform auto retailing channels. The full potential of these programs cannot be realized without a

reasonable view of the different customer segments that should be targeted; the appropriate mix and level of marketing and distribution functions needed for each segment, and the best portfolio of distribution formats and channels to reach the targets (Evan Hirsh & al. 1999).

As discussed above, Honda Vietnam currently have less dealer system than its competitors. This reduces the majority of CSI and increases the risk of losing customers to use the service at the dealers. We have the plan to open network to provinces to satisfy the far customers. We have intension to increase the dealers to 46 dealers nationwide in 2020.

There are several approaches for the use of Lean Production Systems (LPS) in After Sales Service (Integration of LPS principles into the service planning). LPS allow companies to focus on activities that enhance the value of the product for the customer, by creating value and avoiding waste in the processes. Through a successful, sustainable implementation of a Lean Production Systems in a company, they can act more responsibly, faster, closer to the customer and transparently in the market. At the same time, productivity, quality and flexibility can be increased and customer-specific services can be manufactured under high-quality standards. But most of these approaches are limited to the single implementation of isolated principles, methods and tools (Uwe Dombrowskia , Constantin Malorny, 2017).

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# CLARIFYING THE EFFECT OF INTELLECTUAL CAPITAL ON FIRM PERFORMANCE: THE CASE OF VIETNAM

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## **Abstract:**

*In a corporate world where true value is no longer determined by physical assets alone, managers and practitioners consider more about developing inner capital of the company. Recent studies around the world also suggest an impact of intellectual capital and on firm performance. However, there are a few studies around Vietnamese company. The purpose of this empirical study is to investigate the three elements of intellectual capital, i.e. human capital, structural capital, and relational capital. It also focuses on assessing the contribution of Intellectual capital to the performance of a firm. Data is collected for enterprise surveys from 2012 to 2015 released by General Statistics Office (GSO) and analysed using regression, the result shows that there are positive relationships between the intellectual capital and performance of company business. In particular, human capital and relational capital have a strong effect on performance of firm. Yet, structural capital is not important and seems to reduce the impact of intellectual capital to the performance of the business.*

**Key:** Intellectual capital, Performance, Value added, Viet Nam.

## **1. Introduction**

By the end of the twentieth century, the economy began to undergo certain changes that had a decisive influence on economic growth and development. In this stage, the competitive advantage of individual countries as well as of enterprises is reflected not only in the traditional resource of production, such as properties of land, labor and other

economic assets (Sullivan, 2000). According to resource-based view, a company's resources, especially intangible assets, have an important role in helping the company achieve high efficiency and sustainability (Eisenhardt and Schoonhoven, 1996). The importance of the company's intangible assets is increasing (Lev, 2001). Bontis (2002) suggest that the current trend is that firms focus less on tangible assets than on intangible assets when seeking a competitive advantage.

Over the past two decades, intellectual capital (IC) has been adopted by most organizations around the world. Intellectual capital plays a fundamental role in modern organizations. It is part of the business foundation in the 21st century (Rudez and Mihalic, 2007). Intellectual capital, therefore, has been identified as one of the key drivers of corporate performance (Youndt et al., 2004). It can be said that measuring IC variables is not easy. Zambon (2004) asserts that no method is applied around the world to measure. However, quantitative studies have used the VAIC - value added method (Public, 1998) to measure the effect of IC.

The topic of IC has been studied and evaluated by many scholars to provide a concept for improving the efficiency of enterprises (Augier and Teece, 2005). However, in Vietnam, IC is a new concept. Thus, this study uses the quantitative measure, value added intellectual coefficient (VAIC) developed by Pulic (1998) as a measure of IC efficiency. Data is collected for enterprise surveys from 2012 to 2015 released by General Statistics Office (GSO) and analysed using regression. The paper is organised as follows. The following section discusses the prior IC literature, focusing on the relationship between IC efficiency (VAIC) and firm performance. The hypotheses to be tested and the method used to test those hypothesized relationships are described in the next sections. The results are then outlined, discussed and some conclusions are offered.

## **2. Literature review**

### ***Intellectual capital (IC)***

Edvinsson and Malone (1997) defined intellectual capital as knowledge that could be transformed into values, intangible assets which are not clearly listed in the corporate balance sheet, yet having positive influence on the efficiency of the business, thus showing the relationship between employees, ideas and information. They divide intellectual capital into human capital and structural capital. Human capital is based on the knowledge created and stored by the organization's employees. While structural capital is based on the presence, empowerment, and infrastructure of human capital. Structural capital is divided into organizational capital (the knowledge that is created and stored in the organization's IT system and processes that accelerate the flow of knowledge through the organization) and customer capital (relationships that an organization has with its customers). The study by Reed et al. (2006) conclude that intellectual capital can be divided into human capital, organization capital and social capital.

Although researchers may not agree to the exact classification and definition of intellectual capital, there is widespread agreement that it contains human capital (HC),

relations capital (RC) and structural capital (SC) (Edvinsson, 1997; Tayles et al., 2007). Therefore, our research will evaluate the capital (IC) based on human capital, relationship capital, and structural capital.

### ***Human capital (HC)***

Human capital is a key component of intellectual capital. The concept of human capital has been adequately and systematically mentioned since the 1960s. Human capital is defined as knowledge, skills, innovation and competence (Bontis et al., 2000). Edvinsson and Malone (1997) defined human capital as a combination of knowledge, skill, innovativeness and ability of company's individual employees to meet the task at hand. Human capital makes reference to the knowledge – explicit and tacit – that people possess, as well as their ability to generate it, which is useful for the mission of the organization (CIC, 2003).

### ***Relationship capital (RC)***

Relationships capital can be viewed as a perception of value that consumers hold when they engage with suppliers of (Petrash, 2001). In this way, we can see that the relationship capital is only obtained from the customer, which is the result of their perception of the company. Relationship capital is defined as the set of available resources of the organization and current relationships which are made through interactions between individuals or organizations (Kostova and Roth, 2003; Shipilov and Danis, 2006).

### ***Structural capital (SC)***

Structural capital is often used to refer to the processes and procedures that are created and stored in a company's technology system to accelerate the flow of knowledge through the organization (Carson et al., 2004). This definition differs from the approach given in strategic management literature (eg Gibson and Birkinshaw, 2004; Kang and Snell, 2009). Gibson and Birkinshaw (2004) put the structural capital into an imbalanced context by developing a set of systems and processes. It allows the ability of link systems and adaptations to maintain performance at the company level. Kang and Snell (2009) classify organizational capital into two alternative forms: mechanical and organic. The alternative forms of capital of an organization have different effects in integrating knowledge within a company.

### ***Performance***

According to Armstrong and Baron (2005), firm's performance is defined as the aggregate assessment of how many benefits an organization generates based on the amount of resources spent. Business performance is measured by the attainment of business objectives and the efficiency of the enterprise's use of resources to achieve the goals. For analysis and measurement, researchers evaluate organization performance through financial parameters such as profitability, market share, capital growth, etc. It is because of that financial results are one of firm's objectives and also a tool for management and decision-making, setting the next target within the enterprise.

### ***Hypothesis***

IC as a strategic resource that companies use to gain competitive advantage and create value for efficiency (Marr et al., 2003). Although experimental tests show mixed

results, after the findings of Chen et al., (2005) and Tan et al., (2007) and other theories based on resource-based theory, it can be hypothesized that there is a direct positive relationship between the efficiency of the IC and the performance of the firm.

*H1 (a).* VAIC positively affects the performance of the company.

Previous studies have found that different aspects of IC also have a significant impact on business performance (Chen et al., 2005; Chan, 2009). Hence, it can be assumed that the components of VAIC have a positive impact on the efficiency of the business:

*H1 (b).* HCE positively affects the performance of the company.

*H1 (c).* SCE positively affects the performance of the company.

In addition, capital efficiency has been found to have a significant positive effect on efficiency (Chen et al., 2005).

Therefore, this relationship is also hypothesized:

*H1 (d).* CEE positively affects the performance of the company.

IC or capital efficient use over a period of time may not affect performance until after some time. For example, new managers (HCs) may not add value until later become more experienced. New systems (SC) and new plant and equipment (CE) can having problems on the operation, the efficiency will decrease until it actually works again. Thus, Chen et al., (2005), and Tan et al., (2007) hypothesized that VAIC and its components over a period of time would positively affect performance in the following period:

*H2 (a).* VAIC of last year positively impacted the performance of the company this year.

*H2 (b).* CEE of last year before had a positive impact on the performance of the company this year.

However, human capital has a certain lag when creating growth for business efficiency. Clarke (2011) confirmed that last year's HCE had a greater impact on the current year's business performance than the current HCE. However, he also proposed a longer time series evaluation:

*H2 (c).* HCE of two years before positively impacted the company's operations this year.

*H2 (d).* SCE of two years before had a positive impact on the performance of the company this year.

*H2 (e).* VAIC of two years before positively impacted the performance of the company this year

### **3. Methodology**

#### **Sample**

This study uses the annual survey data of the General Statistics Office (GSO), consists of firm from 2012 to 2015. Due to missing data on selected variables, the final sample for analysis consists of firm-year observations depending on the particular variable

concerned. After processing to retrieve the information needed for the study, the sample used included more than 500 thousand observations described in the following table 1:

**Table 1: Sample distribution by industry**

<b>Firms</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Agriculture and Forestry	951	985	951	828
Seafood	33	41	25	33
Mining industry	289	252	216	211
Processing industry	19,467	17,700	19,035	18,328
Production and distribution of electricity, gas and gas	410	287	411	382
Build	18,255	16,908	16,939	18,345
Commercial	58,848	54,036	53,699	56,725
Hotels, restaurants	3,104	3,101	3,394	4,066
Transportation, warehousing	11,212	10,408	10,745	12,802
Other services	31,087	27,805	27,379	30,131
<b>Total</b>	111,729	143,712	131,617	132,874
	549,824			

### **Measurement of variable**

#### *Measurement of IC*

One of the most common method to calculate IC performance is the VAIC model developed by Pulic (1998). This model measures the added value of any business along with the individual contribution of each type of asset (HC, SC, and CE) to value creation. VAIC is an index-based measure that uses financial reported data. It calculates asset value and IC efficiency - which is very useful for managerial decision-making.

#### *Calculating VAIC*

To calculate VAIC, the ability of a company to generate value-added (VA) for all stakeholders must first be calculated. In the simplest form, VA is the difference between output and input. The results show net revenue and input contain all costs incurred in earning revenue except for labor costs as a value-creating entity (Tan et al., 2007). This VA is also defined as the net value generated by the firms in the year (Chen et al., 2005) and can be expressed as:

$$VA = S - B = NI + T + DP + I + W$$

Where: S is the net revenue (output); B is the material and service purchased or the cost of the goods sold (input); NI is net income after tax; T is the tax; DP is depreciation; I is the cost; and W is the salary and salary of the employee. The above equation VA is called the "Positive Value-Added" approach (Riahi-Belkaoui, 2003) and is the method used in this study.

### *Human Capital Effect (HCE).*

Human capital (HC) includes skills, experience, productivity, knowledge and suitability of employees in the workplace. In the VAIC model, HC levels are defined as wages over time (Pulic, 1998). In particular, higher wages for more skilled workers add value to the company than lower-wage employees. HCE for a dollar spent on human capital or how many employees will generate VA and calculated as follows:

$HCE = VA/HC$  where HC is the total salaries and wages.

If wage is low and VA is high, the company is using HC effectively. If the VA is low-wage-related, HC's are not used effectively and the HCE will be low. Higher HCE results from the efficient use of HC to increase value through operating profit.

### *Structural Capital Effect (SCE).*

Structuring (SC) includes components such as strategy, organizational networks, patents and brand names. Pulic (1998) calculated SC as follows:

$SC = VA - HC$ .

Thus, VA is affected by the effect of HC and SC. SC depends on HC, and larger HCs will be transformed into improved internal structures (Nazari and Herremans, 2007). HC and SC are inversely related (Tan et al., 2008). With this equation, SC decreases as HC increases, which is logically incompatible with SC's theoretical definition. To correct this problem, Pulic (1998) calculates SCE as follows:

$SCE = SC/VA$ .

SCE is the SC dollar of the company and for every dollar of value added, and when the HCE increases, SCE increases. If the counting methods for both HCE and SCE are calculated in VA above the numerator, this generates a logical inconsistency (Pulic, 1998).

### *Capital Use Efficiency (CEE).*

CEE includes the efficiency that SCE and HCE do not capture. Pulic (1998) argues that IC cannot create value itself, and therefore it must be combined with the use of physical and financial capital (CE).

Therefore, CE is calculated as total assets minus intangible assets and CEE is determined as follows:

$CEE = VA/CE$  where CE is the total book value of the company.

The CEE says that VA is made up of a dollar spent on capital (CE).

Value Added Intelligence (VAIC). VAIC measure by:

$VAIC = HCE + SCE + CEE$ .

### ***Measurement of Performance***

Firer and Williams (2003), based on previous research on corporate performance, have adopted a measure of corporate performance in terms of financial variables related to

profitability. The yield and valuation parameters of the market are: ROA, ATO and MB. These variables are defined as follows: ROA: net profit margin (dividend preference of the company is negligible, or not included) divided by the book value of total assets in the yearend financial statement. ATO: The ratio of total revenue to the total book value of assets reported in the financial statements at the end of the year. MB: market capitalization rate (stock market price) on book value of net assets.

According to Pham Thi Thanh Huong (2017), ROE and ROA indicators accurately reflect the efficiency of using financial resources of enterprises and not much impact of changes in the stock market. Another study on enterprise efficiency by Li-Chang Hsu and Chao-Hung Wang (2010) used ROA as a measure and definition for enterprise efficiency.

Therefore, this study uses ROA to measures performance. ROA defined as: Return on assets (ROA): Profit before tax/Average total assets.

### ***Control variables***

To minimise the impact of other variables that may explain observed relationships with firm performance, two control variables (leverage and industry) are included within the regression models:

- Leverage: A company with high debt ratios will usually focus on fulfilling the requirements of creditors. This is not consistent with the point of view of making a profit from VA and VAIC. As with previous studies (Shiu, 2006; Chan, 2009), we assume that leverage is a control variable. Leverage is calculated as: Leverage = Total debt/Total assets.

- Industry: Kujansivu (2007) note that the effects of IC vary from one industry to another. Chen et al. (2005) and Tan et al. (2007) divides the VAIC regression models and regression models into groups, and finds significant differences in the interpretation of strength across disciplines. Similarly, Firer and Williams (2003) suggest that the industry is controlled in this study through a dummy control variable. This counterfeit symbolizes the impact of different industries under the VSIC 2007 industry category.

### ***Empirical models***

The three hypotheses to be empirically tested are reflected in the following three equations relating VAIC (Model 1) and components of VAIC (Model 2) to firm performance.

$$Perf_{it} = \beta_0 + \beta_1 VAIC_{it} + \beta_2 VAIC_{it-1} + \beta_3 Control\ variables_{it} + \varepsilon_{it} \text{ (Model 1)}$$

$$Perf_{it} = \beta_0 + \beta_1 HCE_{it} + \beta_2 SCE_{it} + \beta_3 CEE_{it} + \beta_4 HCE_{it-1} + \beta_5 SCE_{it-1} + \beta_6 CEE_{it-1} + \beta_7 Control\ variables_{it} + \varepsilon_{it} \text{ (Model 2)}$$

Where:

Perf is Return on assets (ROA); VAIC is Value added intellectual coefficient; HCE is Human capital efficiency; SCE is Structural capital efficiency; CEE is Capital employed efficiency;  $\beta_0$  = Constant; i = firm; t = year (between 2012 and 2015).

Control variables: LEV = Leverage; industry.

## 4. Result

### *Descriptive statistics*

Research from the survey data sets and using the variables: Human Capital Efficiency (HCE), Efficiency, Capital Efficiency (CEE), Capital Efficiency (CEE), Net Asset Return on Total Assets (ROA).

**Table 2: Descriptive statistics for selected variables**

Variable	Obs	Mean	Std. Dev.	Min	Max
vaic	546,924	353.2564	165011.2	-1018.45	109000000
vaic_lag1	296,202	-4.787787	237614.6	-48600000	109000000
vaic_lag2	150,498	-309.2309	127304.9	-46800000	11500000
hce	546,924	0.0355678	1.077847	0.00	359.04
hce_lag2	216,734	0.0262839	0.2832389	-0.31	46.27
cee	549,824	430.2587	164575.5	-0.06	109000000
cee_lag1	297,670	85.83999	237025.7	-48600000	109000000
sce	549,824	-78.89301	75.73992	-1018.47	1.00
sce_lag2	217,821	-34015.5	8746385	-3360000000	6801
ROA	549,330	0.0179176	6.931913	-157.84	4914.19

In which, X\_lag1 is a delayed X variable for a period, X\_lag2 is a delayed X variable for two periods (X = vaic, hce, cee, sce)

### *Regression analysis and hypothesis testing:*

**Table 3: Regression results**

		ROA	
Independent variables		Coefficients	t-statistic
Panel A (VAIC, VAIC_lag1, VAIC_lag2, leve, branch, ROA)	<b>model 1</b>		
	const	0.14349	1.88
	VAIC	0.002825	36.56**
	VAIC_lag1	-1.85E-06	-0.41
	VAIC_lag2	-8.17E-10	-0.02
	Adjusted R <sup>2</sup>	0.005	
	Obs	148704	
	T	5	
Panel B (HCE, HCE_lag2, CEE, CEE_lag1, SCE, SCE_lag2, leve, branch, ROA)	<b>Model 2</b>		
	Const	-0.163	-0.77
	HCE	3.273287	460.56**
	HCE_lag2	0.690122	25.84**

CEE	0.006815	38.25**
CEE_lag1	3.17E-09	0.09
SCE	-0.00036	-5.88**
SCE_lag2	-1.21E-11	-0.03
Adjusted R <sup>2</sup>	0.191	
Obs	215371	
T	5	

\* indicates significant at the 5 percent level; \*\* indicates significant at the 1 percent level

**Multiple regression results: direct relationship with current year performance**

Table 3 (Panels A and B) shows the results of regression coefficients for all independent variables VAIC and its components, using ROA as the dependent variable. Model 1 at Panel A presents the results for VAIC while Model 2 at Panel B presents the results for VAIC components.

In Model 1 of Table 3, VAIC coefficient is positive and significant at the 1 percent level across all performance measures. Adjusted R<sup>2</sup> is 0,005 for ROA. This result indicates that there is a relationship between overall IC and company performance, thus contributing to the hypothesis *HI (a)*: VAIC positively affects the performance of the company. In the Vietnamese environment, VAIC has little impact on performance. This result is consistent with prior studies by Clarke (2011), accordingly, in Australia, VAIC is positively related to firm performance at the 1 percent level.

In Model 2 of Table 3, the coefficients of both HCE and CEE are significant at the 1 percent level and positively related to performance (ROA). *HI(b)* and *HI(d)* are supported. This result is consistent with previous studies by Chen et al., (2005) and Ting and Lean (2009). Accordingly, the use of physical, financial and human resources effectively is important for businesses to generate higher profits. However, these results are not consistent with companies in South Africa (Firer and Williams, 2003), Taiwan (Shiu, 2006) and Hong Kong (Chan, 2009), where there is a significant negative relationship between HCE with performance. SCE has the opposite effect and low impact on performance, this finding is generally consistent with previous VAIC studies. Chen et al. (2005), showing small, negative and negligible SCE efficiency with ROA. Ting and Lean (2009) and Shiu (2006) also found a negligible and negative relationship between SCE and profitability. *HI(c)* is not supported.

Remarkably, in all models, adjustment R<sup>2</sup> was increased significantly with the components of VAIC (Table 3). R<sup>2</sup> increase from 0.005 in Model 1 to 0,191 in Model 2, these results are consistent with Chen et al. (2005). In general, these results suggest that VAIC components have greater explanatory power when they are incorporated into individual VAIC indicators. SCE is the only VAIC component that shows opposition, thus indicating the most

important way to improve company performance is through HCE and CEE. SCE appears to detract from the predictive power of the other two components in the VAIC index.

***Multiple regression results: direct relationship with following year performance***

There is no significant relationship between VAIC of the last or two-year time period, therefore, H2(a) and H2(e) are rejected. Two-year period SCE ( $SCE_{t-2}$ ) is negatively yet insignificantly related to ROA. This is consistent to study of Martin (2014). Last year, CCE ( $CCE_{t-2}$ ) is positively but insignificantly related to ROA. This can be understood that in terms of Vietnam in general, the constituents of IC have no lag effect.

However, two-year period HCE ( $HCE_{t-2}$ ) is positively and significantly related to ROA at 1 percent level. This generally support for H2(b). Coefficient is 0.69 for ROA. This result is consistent with previous studies (for example, Chen et al. (2005)) which is that it takes time when to investing in human resource. However, our study has investigated further time series to discovered that investing in human resource will bring benefit to company many years after that.

**5. Discussion and conclusion**

The paper reviews a number of theories of intellectual capital in business in general, including human capital, structural capital, and relational capital. It also provides evidence for the relationship between intellectual capital and business performance. The paper examines intellectual capital through the VAIC model (Pulic, 1998) while assessing the relationship between intellectual capital and firm performance. In addition, using the estimation method with panel data has overcome the problem of lack of variables in model estimation, thus yielding better results than OLS when evaluating this relationship.

Using quantitative method, the article has shown that there are positive relationships between the intellectual capital and performance of company business. In particular, human capital (HC) and physical and financial capital (expressed in CEE) have a strong effect on performance of firm. Yet, structural capital is not important and seems to reduce the impact of intellectual capital to the performance of the business. Besides, the article shows that human capital is important in the current year and also has implications for future performance. Especially in the context of Vietnam, it can be seen that the impact of human capital is rather slow (2 years) compared to CEE financial capital (1 year). SCE seems to take longer to influence the performance of the company.

While it is possible to see the growing importance of intellectual capital to the company, more evidence and research is needed to evaluate this relationship and develop a framework for intellectual capital. We suggest that future studies seek out more deeply the dynamic nature of this relationship to provide more evidence from different parts of the world. Secondly, the VAIC model itself needs to be rigorously verified its reliability when used to measure IC performance. One of the limitations of the VAIC model is that it does not separate the relationship, thus, future studies can build and add to this importance in the IC component of the VAIC model. In addition, in order to supplement and further develop this research, more sophisticated statistical techniques (such as non-linear

regression and quantile regression) can be used and can be investigated in a more efficient manner over time.

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# THE EFFECTIVENESS OF FINANCIAL AND ACCOUNTING INTERNAL OPERATION CONTROL OF THE FACULTY OF HUMANITIES AND SOCIAL SCIENCES, KHON KAEN UNIVERSITY

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## **Abstract**

*This study investigated the effectiveness of financial and accounting internal control of the Faculty of Humanities and Social Sciences, Khon Kaen University as well as proposed methods for improving such operation. The participants in this study were twenty-three people, including (1) three administrators, (2) three financial officers study were twenty-three people and (3) seventeen counting Committees. The questionnaires were used to collect data, and the collected data were analyzed by descriptive statistics. The overall internal control assessment result based on COSO concept was at the low level. When considering each component, the results were revealed as follows. The first component which was the internal environment was at the moderate level. The second component which was the risk assessment and the third component which was the control activities were at the level of needed to be improved. The fourth component which was information and communication was at the moderate level. The fifth component which was monitoring and evaluation was at the low level. Although the results of the evaluation of the first component which was internal environment and the fourth component which was information and communication were at the moderate level, they were still needed to be improved and developed based on COSO concept for better financial processes of the Faculty of Humanities and Social Sciences.*

**Keywords:** financial and accounting internal control ,internal control assessment result based on COSO

## **1. Introduction**

### ***1.1. Background and statement of the problem***

Finance and accounting section, the Faculty of Humanities and Social Sciences of Khon Kaen University, is to administer the faculty's treasury and manage budgets for effective disbursement. Specifically, it deals with financial planning, generation of income and expense reports, the payment of an advance, financial auditing and monitoring of documents of the faculty staff (Faculty of Humanities and Social Sciences, 2012). Apart from that, it regulates disbursement of all programs and all projects of those programs, offer some advice as well monitors the operation related to finance and accounting. In doing so, the finance and accounting section's operation complies with laws, rules and regulations of Khon Kaen University Act B.E. 2558, Section 4 on Accounting and

Auditing (Khon Kaen University, 2012). In addition, it is obliged to manage the internal control in accordance with State Audit Commission's regulation of the establishment of internal-control standards B.E. 2544.

In relation to internal control auditing of the Faculty of Humanities and Social Sciences, it consists of two aspects: university auditing and self-assessment report (SAR). During the past ten years of auditing from 2007 to 2016, university auditing showed that there were serious issues of disbursement, conserving and sending money to the treasury in 2011 as well as non-transparent internal control from 2008 to 2010, which affected the faculty's administration and caused financial damage. In the meantime, the self-assessment report found that the effective internal control required the assessment of the internal control for treasury administration, particularly related to disbursement, conserving and sending money to the treasury.

As can be seen, it can have effects on the operation of finance and accounting section of the Faculty of Humanities and Social Sciences. Thus, the present study aimed to investigate the effectiveness of the internal control of finance and accounting and to propose the methods for the effective internal control. In particular, it focused on the disbursement system, the systems of conserving and sending money to the treasury.

### ***1.2. Purposes of the Study***

According to general background, the research has two purposes, those are:

1.2.1 To study the efficiency of financial and accounting operation control of Faculty of Humanity and Social Sciences, Khon Kaen University.

1.2.2 To suggest a model for improving the efficiency of financial and accounting operation control of Faculty of Humanity and Social Sciences, Khon Kaen University.

### ***1.3. Anticipated Benefits***

According to the purposes of the study, it is expected that the research will provide benefits to the learners as following:

1.3.1 The research could provide knowledge about improving the efficiency of financial and accounting operation control, especially on payment system, savings system, and money sending system of Faculty of Humanity and Social Sciences, Khon Kaen University. In addition, the given knowledge could be the guideline for maximizing faculty's financial and accounting effectiveness.

1.3.2 The learners acknowledge the improving the efficiency of financial and accounting operation control of Faculty of Humanity and Social Sciences, Khon Kaen University applying and following the concept of COSO, which could benefit to the development of mindset for further improvement,

1.3.3 The learners have the guideline for financial and accounting operation to reduce operation errors and to improve the operation effectiveness.

## **2. Method**

### **2.1. Research Framework**

This research investigates the assessment of the efficiency of operation control within the organization including payment system, savings system, and money sending system of Faculty of Humanity and Social Sciences, Khon Kaen University. The investigation also provides the guideline for performance improvement of operation control of Faculty of Humanity and Social Sciences, Khon Kaen University corresponding to the COSO framework as following:

2.2 Content framework — In this study, the researcher has compared the data collected from internal financial and accounting operation control of Faculty of Humanity and Social Sciences with 5 components of COSO framework: 1) Internal environment 2) Risk Assessment 3) Controlling Activities 4) Information and Communication 5) Following up as well as the concept of internal control for developing this research model and guideline.

2.3 Target group framework — The population of this study is 24 people who related to financial and executives which are Dean of Faculty of Humanity and Social Sciences, Associate Dean for Administration, director of financial and accounting, and cash counting directors.

2.4 Time Scope — the period of the study is January 2017 — January 2018.

## **3. Results**

### **3.1. Research Methodology**

The study of “The Efficiency of Financial and Accounting Internal Operation Control of Faculty of Humanity and Social Sciences” aims for probing efficiency of financial and accounting internal operation control of Faculty of Humanity and Social Sciences Khon Kaen University and suggests the guideline for improving the efficiency of financial and accounting internal operation control of Faculty of Humanity and Social Sciences Khon Kaen University following COSO internal control. The research is qualitative research which the researcher has set the method and process as following: 1) Population and Target group 2) Research Tools 3) Data Collection 4) Data Analysis.

### **3.2. Population and Target group**

1.1 The population of this research is the group of people involving in financial system, which includes payment system, money keeping, and money sending, 24 people consisting of 3 faculty’s executives, financial staffs 3 people, and 18 cash counting directors.

1.2 Target Group of the research are 24 people i.e.

- 1) Three executives of Faculty of Humanity and Social Sciences
- 2) Three financial staffs
- 3) 17 cash counting directors

**Table 1. Population and Target Group**

Type	Position	Amount (person)	Total (person)
Executive	1. Dean	1	3
	2. Associate Dean	1	
	3. Head of Office	1	
Financial Staffs	1. Finance and Accounting Analyst	3	3
Cash Counting Directors	1. Educator	11	17
	2. General Officers	5	
	3. Policy and Strategy Analyst	2	
	4. Staffs	3	
	5. International Relations Officers	2	
Total		29	23

### ***3.3. Data Collecting Tools***

The tools for collecting data is questionnaire which has its creating process as following:

1.1 Structured Interview questionnaire was used in this research data collection as shown below

1.2 The questionnaire was created under the concept of State Audit Office of the Kingdom of Thailand evaluation, theory and studies related to the concept of COSO to decide the structural interview questionnaire of Financial and Accounting Internal Operation Control.

1.3 Structured Interview was designed to be consistent with the objective of the study composed of money receiving, money keeping, and money sending in accordance with COSO internal operation control. The main points of the questions are:

The first point is the questions about the internal control of money receiving, money keeping, and money sending of Faculty of Humanity and Social Sciences.

The second point is the questions about COSO internal control assessment consisting of 5 factors i.e. 1) internal environment 2) risk assessment 3) controlling activities 4) information and communication 5) following up

1.4 The questionnaire is checked by experts which are independent study advisor, thesis defense committee, and Faculty executive to consider whether the questions are appropriate, complete, and consistent with the objective of the study.

1.5 Adjusting the incomplete part of the questionnaire according to experts' suggestions and sending to the experts to recheck the questionnaire again. Then, the questionnaire is going to be prints to collect the data.

### **3.4. Data Collection**

The data will be collected to study about the assessment of internal operation control of receiving money, money keeping, and money sending of Faculty of Humanity and Social Sciences, Khon Kaen University according to the COSO internal operation control. The process has been divided into two parts as following:

3.1 Primary Data is the directed collected data from target group which the researcher utilizes the method as following:

1) Asking for permission to meet the faculty Dean to explain the objectives and the research procedure. The process of data collecting must have the access to data givers and their cooperation including the data of the assessment of internal operation control of receiving money, money keeping, and money sending of Faculty of Humanity and Social.

1.1) Contact to the data providers for making an appointment

1.2) Meet the data providers according to the appointment. In the process of data collecting, researcher is going to begin with the first question in the questionnaire to the last question. The model of the interview is described below:

2) In the interviewing with the executives, it is person-to-person interviewing which the researcher is the asker, then write the answers to the questionnaire

3) In staffs interviewing, the staffs are gathering to the meeting room, then the researcher asks them and let them write the answers to the paper themselves.

3.1 The data collected from the interviewing; the research is going to fill them to the table to make the result of the process and have them checked by the committee.

3.2 In order to double check the correctness of the answers, the researcher is going to make a meeting consisting of all of 3 groups before analyzing the data.

3.3 Secondary data is the data gathered from the study of concept, theory and related papers. The data related to the assessment of internal operation control of receiving money, money keeping, and money sending of Faculty of Humanity and Social.

### **3.5. Data Analyzing**

In data analyzing, the analyzed data will be primary data which was sorted into table by interviewing points combined with secondary data from the study of concept, theory and related papers. Apart from that, the internal controlling according to concept of SOCO. The analysis is followed the research objectives which are to assess and to suggest the guideline for internal operation control of money receiving, money keeping, and money sending for the Faculty of Humanity and Social Sciences. The analyzing points are:

First point: Analyze the internal control of money receiving, money keeping, and money sending for the Faculty of Humanity and Social Sciences. The analyzed data comes

from interviewing in part 1 using average and percentage. If the outcome is above 80%, it means the faculty has a good internal control.

Second point: Analyze the internal control of the Faculty of Humanity and Social Sciences according to the concept of COSO in five components. The analyzed data comes from the second part of the interviewing using average and percentage. If the outcome is above 80%, it means the faculty has a good internal control.

There are five level of assessment i.e.

- (1) 100% - 90% means very good
- (2) 89% - 80% means good
- (3) 79% - 70% means moderate
- (4) 69% - 60% means low
- (5) 69% - 0% means improvement needed

Third point: Compare the controlling in part 1 and part 2 for finding the differences before suggesting the guideline for internal financial operation control according to COSO. Moreover, in comparison, the researcher will stick to five components of SOCO concepts to be control group and then compare them with the collected data.

## **4. Discussion and Conclusion**

### **4.1. Research Summary**

Form the assessment of internal operation control of money receiving, money keeping, and money sending of Faculty of Humanity and Social, Khon Kaen University, the result overall is Low ( $\bar{x} = 24.2$ ,  $SD.= 9.3$ ). When separately considering the assessment of internal operation control by COSO factors, it was found that the factor 1 'Internal environment' of internal operation control is low ( $\bar{x} = 5.7$ ,  $SD.= 2.7$ ). The factor 2 'Risk assessment' of internal operation control is good ( $\bar{x} = 8.8$ ,  $SD.= 3.2$ ), the factor 3 'Controlling activities' of internal operation control is low ( $\bar{x} = 4.6$ ,  $SD.= 2.9$ ), the factor 4 'Information and communication' of internal operation control is moderate ( $\bar{x} = 2.8$ ,  $SD.= 1.2$ ), and the factor 5 'following up' of internal operation control is improvement needed ( $\bar{x} = 1.5$ ,  $SD.= 1.4$ )

However, the overall result of the assessment of internal operation control of financial and accounting according to the concept of COSO internal operation control is low ( $\bar{x} = 19.9$ ,  $SD. = 12.7$ ) When separately considering the assessment of internal operation control by COSO factors, it was found that the factor 1 'Internal environment' of internal operation control shows  $\bar{x} = 11.7$ ,  $SD.= 6.5$ . The factor 2 'Risk assessment' is  $\bar{x} = 1.7$ ,  $SD.= 3.0$ , the factor 3 'Controlling activities' is  $\bar{x} = 2.7$ ,  $SD.= 2.4$ , the factor 4 'Information and communication' of internal operation control is moderate  $\bar{x} = 2.7$ ,  $SD.= 1.5$ ), and the factor 5 'following up' of internal operation control is low ( $\bar{x} = 1.6$ ,  $SD.= 1.3$ )

### **4.2. Discussion**

(1) Internal environment, in this study consists of honesty and morality aspect, knowledge aspect, skill, staffs' capability, cooperation of executives and committee aspect,

executives' management aspect, organization structure aspect, HR aspect, and obligation aspect. It was found that the result is going in the same way as research of Nussaba Krobkrong (2013) and Anurak Pakdee (2013) which adopts the seven aspects to be the framework. In addition, in the honesty and morality aspect, it is in the 'should improve' level (53.6%) as well as the aspect of staffs' knowledge, skill, and capability is in low (63.5%) agreeing with Nussaba Krobkrong (2013) and Anurak Pakdee (2013).

(2) Risk assessment, there are three aspects to be considered i.e. addressing risk, analyzing risk, and risk management which is similar to Anurak Pakdee (2013) and Deemai Intarapanich (2008)

(3) Controlling activities, in this component, the result is similar to the research of Pairoj Damrongsak (2010) and Anurak Pakdee (2013) which suggest that there have to be consisted of 1) Determined systematic controlling activities 2) Determined the standard or policy and process 3) Determined investigating process 4) Determined the assessment controlling.

(4) Information and communication, there are four points in this component covering main two contents including 1) Correct, complete, and up-to-date information help eliminate the weak links within the internal control which is similar to Kittipong Pochanasombut (2014) and 2) the communication allows staffs to communicate effectively rendering the staffs know their role and their duty about the controlling which is going the same way as of Nussaba Krobkrong (2013)

(5) Following up and assessment, the questions in this component are consisted of three points: 1) The faculty continually and consistently follows up and assesses of internal operation control 2) The faculty allows the internal operation checker to assess and report directly to the executives 3) The executives acknowledge the flaws and fix them immediately. The result is alike to Thidaporn Inchum (2011) and Pairoj Damrongsak (2010) which are included 1) Follow up system of internal management system 2) Internal operation control committee 3) following up and fixing detected problems 4) financial data correctness affirmation 5) responsibility and punishment of the committee when the error occurs.

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# ANALYSIS TECHNICAL EFFICIENCY, TECHNOLOGICAL GAP AND TOTAL FACTOR PRODUCTIVITY OF VIETNAMESE TEXTILE AND GARMENT INDUSTRIES

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## Abstract

*The study used meta- frontier framework, data envelopment analysis approach and the global Malmquist total factor productivity index to analyse technical efficiency and productivity change as well as its components of Vietnamese textile and garment firms during 2013-2015. The results show that: (i) The total factor productivity of Vietnamese textile and garment firms fell in the period 2013-2015, and technical change is the main reason to constraint productivity growth. (ii) The private garment sector has taken real effort to improve technology. On the other hand, state-owned and FDI garment sectors have been significantly improving technical efficiency in the use of production factors.(iii) FDI textile firms have been improving effectively technology, whereas state-owned textile firms have showed improvements in technical efficiency. Meanwhile, the private textile sector has experienced a slowdown in all components of total factor productivity. (iv) There is a large technological gap among Vietnamese textile and garment sectors, which has become wide for the garment industry. And this gap is the reason for differences in total factor productivity between Vietnamese textile and garment sectors.*

**Keywords:** Data envelopment analysis, Global Malmquist total factor productivity, Meta-frontier, Technical efficiency.

## 1. Introduction

In recent years, Viet Nam has taken part in international economic integration by signing many free trade agreements (FTAs) such as: Viet Nam-Europe Union free trade agreement, Viet Nam- South Korean free trade agreement, Viet Nam-Asean free trade area, etc ... In negotiation to sign these agreements, Vietnam textile and garment industries have always been considered to be the industry that have national fundamental interests, and able to gain great income when these agreements being put into force.

According to the statistics data of the Vietnam Textile and Garment Association, the average growth rate of export value in the last 5 years is 14.74% per year, export turnover in 2016 have got 28.5 billion USD, account for 16% of industrial production value and became the industry whose export turnover was the second position in the country (after telephone and telephone accessories), contributed significant part to the national export turnover, and became one of five world's biggest textile and garment exporters. Having more than 6,000 large and small firms, textile and garment industries

have created jobs for 5% of industrial workers, account for more than 2.5 million employees and one fifth of new jobs every year. Therefore Viet Nam has been considered the country whose textile and garment export capability ranked 4<sup>th</sup> position in the world (after China, India and Bangladesh).

Although the textile and garment industries play an importance role in the development of economy, the performances of these sectors in recent years has not met their potential. Foreign direct investment (FDI) textile and garment firms with the advantage of international integration and many preferential policies of the state just accounted for less than 20% of firms and about 4% of total labour force. However, the share of export turnover made up about 70%. State-owned textile and garment firms still have many limits in management, thus the production cost is high and productivity is low. In addition, private garment textile and firms are almost small and medium firms. As a result, It is difficult for them to access capital and land as well as attract high quality labour force in comparison with FDI textile and garment firms, leading to low production efficiency.

According to the analysis of efficiency and productivity of Vietnamese textile and garment firms today, It is assumed that state-owned, private and FDI textile and garment firms have the same production technology at each period, which may lead to biased estimation of productivity. In order to overcome these drawbacks, the study will analyse the efficiency and productivity of Vietnamese textile and garment firms by using the meta-frontier approach and the global Malmquist total factor productivity ( Malmquist TFP) index. Each type of textile and garment firms (state, private and FDI textile and garment firms) is considered to have different technological levels in each period. From that, technical efficiency, technological gap and total factor productivity of Vietnamese textile and garment firms are estimated.

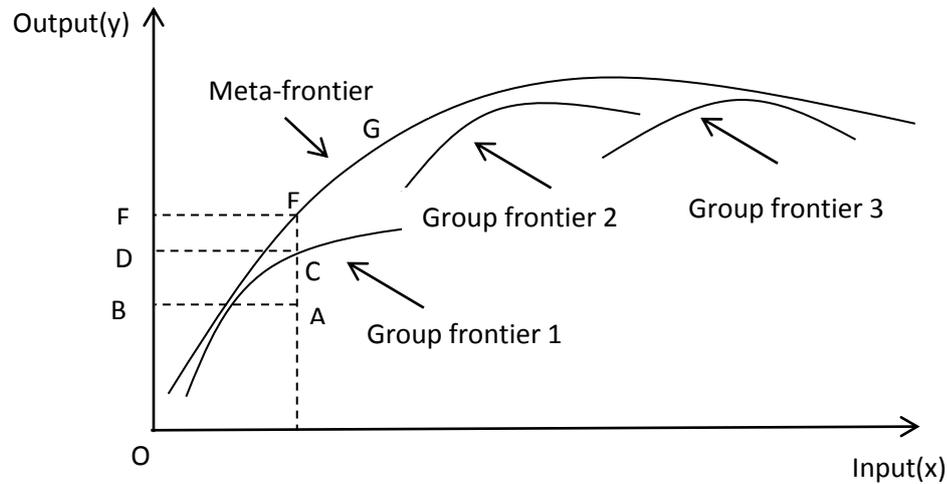
## **2. Method**

The concept of meta-frontier was proposed by Hayami (1969), Hayami and Ruttan (1970). Since then, Battese et al (2002,2004) have developed meta-frontier approach to estimate technical efficiency, technical change and total factor productivity. The meta-frontier approach can be applied in both data envelopment analysis (DEA) and stochastic frontier analysis (SFA) frameworks.

Up to now, not only Viet Nam but also many countries in the world have studied in different economic sectors using the DEA approach to estimate meta-frontier. For example, Rao et al (2003), O'Donnell et al (2008) used DEA approach to analyse differences in agricultural productivity of 97 countries in Asia, Europe, America and Africa. Alexandra Kontolaimou and Kostas Tsekouras (2010) studied about the effectiveness of cooperative banking in Europe. Qunwei Wang et al (2013) analysed energy efficiency among provinces in China. Nhat.Q.M (2011) used the DEA approach and meta-technology ratio (MTR) to estimate the technical efficiency of three rice monocultures and two crop rotation in Tra Vinh province. Bao. H. D (2016) studied technical efficiency, factor productivity and technological gap between agricultural areas of Vietnam, etc.

The figure 1 below presents definition of technical efficiencies in meta-frontier and group frontiers.

**Figure 1: Technical efficiency and technology gap ratio in meta-frontier framework**



Let's consider firm A in the group 1, there are two measures of technical efficiency that can be derived. Firstly, technical efficiency with respect to meta-frontier. It is defined by using concept of output oriented distance function and using meta-frontier:

$$TE(x,q) = D_o(x,q) = OB/OF \quad (1)$$

Secondly, using the group frontier to define technical efficiency.

$$TE^k(x,q) = D_o^k(x,q) = OB/OD \quad (2)$$

Where  $TE(x,q)$  is always less than or equal  $TE^k(x,q)$

The Figure 1 shows that, there is a gap between meta-frontier and group frontiers, which reflects the backwardness between group technology and meta- technology. This gap is measured by the concept of technology gap ratio (TGR) (Battese et al. 2004).

The output orientated technology gap ratio ( $TGR$ ) for group  $k^{th}$  is defined as:

$$TGR^k(x,q) = \frac{D_o(x,q)}{D_o^k(x,q)} = \frac{TE(x,q)}{TE^k(x,q)} \quad (3)$$

The formula (3) can re-write as:

$$TE(x,q) = TE^k(x,q).TGR^k(x,q) \quad (4)$$

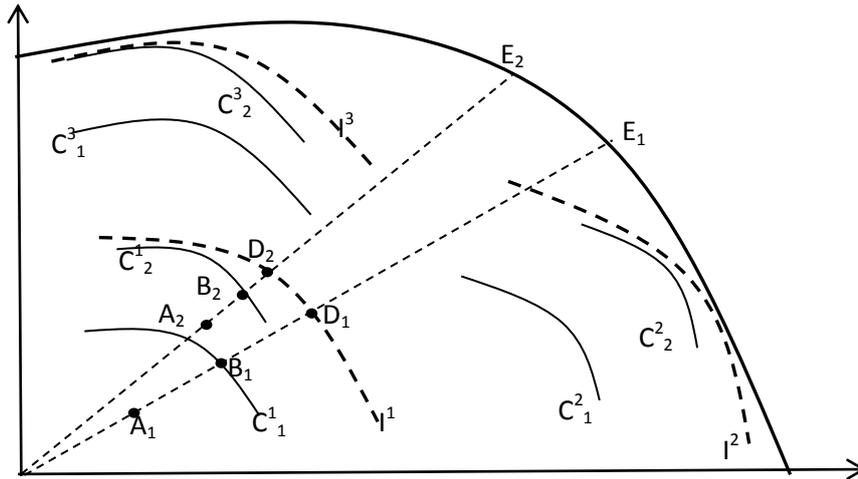
The formula (4) shows that technical efficiency with respect to meta-frontier consists of two components: Firstly, the current knowledge of production, natural environment, socio-economic of each group ( $TE^k$ ). Secondly, the technology gap of each group over the whole industry (O'Donnell et al. 2008). Oh and Lee (2010) proposed the concept of technology gap change to measure the trend of technology gap ratio as:

$$TGC = \frac{TGR_{t+1}}{TGR_t} \quad (5)$$

$TGC > 1$  means the production technology gap of groups is getting closer.

Unlike traditional DEA studies that focus only on efficiency and technological gap at a specific time. The global Malmquist TFP index was proposed by Pastor and Lovell (2005) and developed by Oh and Lee (2010) to measure technical efficiency change, technical change and productivity growth. The Figure 2 describes concept of the global Malmquist TFP as:

**Figure 2: The concepts of the meta-frontier Malmquist indexes**



Where  $C_j^i$  are contemporaneous frontiers of groups at a specific time,  $I^i$  are inter-temporal frontiers for groups and there is only one global frontier  $G$ .

The contemporaneous Malmquist TFP index of an observation within group  $k^{th}$  is defined at technology of period  $t$  as:

$$M_C^t(x^t, q^t, x^{t+1}, q^{t+1}) = \left[ \frac{D_{t+1}(x^{t+1}, q^{t+1})}{D_{t+1}(x^t, q^t)} \times \frac{D_t(x^{t+1}, q^{t+1})}{D_t(x^t, q^t)} \right]^{0.5} \quad (6)$$

Where  $M$  is Malmquist TFP index,  $D_t(.)$  is output orientated distance function with respect to frontier of period  $t$ .

The inter-temporal Malmquist TFP index of an observation for each group is defined as:

$$M_I(x^t, q^t, x^{t+1}, q^{t+1}) = \frac{D^I(x^{t+1}, q^{t+1})}{D^I(x^t, q^t)} \quad (7)$$

Where  $M_I$  is inter-temporal Malmquist TFP index,  $D^I(.)$  is output orientated distance function with respect to inter-temporal frontier of group  $I$ .

Following Pastor and Lovell (2005), this index can be decomposed as:

$$M_I(x^t, q^t, x^{t+1}, q^{t+1}) = \frac{D_{t+1}(x^{t+1}, q^{t+1})}{D_t(x^t, q^t)} \times \left\{ \frac{D^I(x^{t+1}, q^{t+1})}{D_{t+1}(x^{t+1}, q^{t+1})} \times \frac{D_t(x^t, q^t)}{D^I(x^t, q^t)} \right\} \quad (8)$$

Due to  $D^{t+1}(x^{t+1}, q^{t+1}) / D^t(x^t, q^t) = TE^{t+1} / TE^t = TEC$ , the first component in the formula (8) measures technical efficiency change.  $D^l(x, q) / D(x, q)$  is Best Practice Gap (*BPG*) defined by Pastor and Lovell (2005) and Oh and Lee (2010). *BPG* is ratio of output orientated distance function with respect to inter-temporal frontier over output orientated distance function with respect to contemporaneous frontier and takes the value in  $[0;1]$

$$BPG^{t+1} = \frac{D^l(x^{t+1}, q^{t+1})}{D^{t+1}(x^{t+1}, q^{t+1})}; BPG^t = \frac{D^l(x^t, q^t)}{D^t(x^t, q^t)} \quad (9)$$

$BPG^{t+1} > BPG^t$  describes technological improvements from period  $t$  to period  $t + 1$ .

We will use this to describe the concept of Best Practice Gap Change (*BPC*). *BPC* that measures technical change is defined in the global Malmquist TFP index framework in the following way:

$$BPC = \frac{D^l(x^{t+1}, q^{t+1}) / D_{t+1}(x^{t+1}, q^{t+1})}{D^l(x^t, q^t) / D_t(x^t, q^t)} = \frac{D^l(x^{t+1}, q^{t+1})}{D_{t+1}(x^{t+1}, q^{t+1})} \times \frac{D_t(x^t, q^t)}{D^l(x^t, q^t)} \quad (10)$$

In summary, inter-temporal Malmquist TFP index can be written as:

$$M_t(x^t, q^t, x^{t+1}, q^{t+1}) = TEC \times BPC \quad (11)$$

Because output orientated distance function is homogeneous of degree one in output, each  $\lambda \in \mathbb{R}^+$  then  $\lambda D(x, q) = D(x, \lambda q)$  (Oh and Lee, 2010). Therefore, the formula (11) can be re-written as:

$$BPC = \frac{D^l(x^{t+1}, q^{t+1} / D_{t+1}(x^{t+1}, q^{t+1}))}{D^l(x^t, q^t / D_t(x^t, q^t))} \quad (12)$$

Similarly, the global Malmquist TFP index is constructed as:

$$M_G(x^t, q^t, x^{t+1}, q^{t+1}) = \frac{D^G(x^{t+1}, q^{t+1})}{D^G(x^t, q^t)} \quad (13)$$

Where  $D^G(x^t, q^t)$  is output orientated distance function with respect to meta-frontier. Because there is only meta-frontier in period  $t$  to  $t+1$ , the formula (13) is not in the geometric mean form. We can decompose  $M_G$  into the following components:

$$M_G(x^t, q^t, x^{t+1}, q^{t+1}) = TEC \times BPC \times \left\{ \frac{D^l(x^t, q^t)}{D^l(x^{t+1}, q^{t+1})} \times \frac{D^G(x^{t+1}, q^{t+1})}{D^G(x^t, q^t)} \right\} \quad (14)$$

According to the concept of technology gap ratio has been introduced above we have:

$$TGR_{t+1} = \frac{D^G(x^{t+1}, q^{t+1})}{D^I(x^{t+1}, q^{t+1})} ; TGR_t = \frac{D^G(x^t, q^t)}{D^I(x^t, q^t)} ; TGC_{t,t+1} = \frac{TGR_{t+1}}{TGR_t} \quad (15)$$

Therefore, the formula (14) can be re-written as:

$$M_G(x^t, q^t, x^{t+1}, q^{t+1}) = TEC \times BPC \times TGC \quad (16)$$

This formula implies that the following steps can be implemented to increase total factor productivity: Effective exploitation of existing production resources; Technological improvements within groups; Improvement the technology of industry.

Because output orientated distance function is homogeneous, (14) can be re-written as:

$$M_G(x^t, q^t, x^{t+1}, q^{t+1}) = \frac{D_{t+1}(x^{t+1}, q^{t+1})}{D_t(x^t, q^t)} \times \left\{ \frac{D^I(x^{t+1}, q^{t+1} / D_{t+1}(x^{t+1}, q^{t+1}))}{D^I(x^t, q^t / D_t(x^t, q^t))} \right\} \times \left\{ \frac{D^G(x^{t+1}, q^{t+1} / D^I(x^{t+1}, q^{t+1}))}{D^G(x^t, q^t / D^I(x^t, q^t))} \right\} \quad (17)$$

This formula allows to compute the global Malmquist TFP index and its components by solving linear programming problems. Oh and Lee (2010) constructed six linear programming problems to determine the value of distance functions:  $D_t(x^t, q^t)$ ,  $D_{t+1}(x^{t+1}, q^{t+1})$ ,  $D^I(x^t, q^t / D_t(x^t, q^t))$ ,  $D^I(x^{t+1}, q^{t+1} / D_{t+1}(x^{t+1}, q^{t+1}))$ ,  $D^G(x^t, q^t / D^I(x^t, q^t))$ ,  $D^G(x^{t+1}, q^{t+1} / D^I(x^{t+1}, q^{t+1}))$ , and from the traditional DEA approach we used these distance functions to measure technical efficiency.

### 3. Results

#### 3.1. Data description.

In this study, Vietnamese textile and garment firms are divided into three groups based on ownership including: State-owned textile and garment firms, private textile and garment firms and FDI textile and garment firms. Data used in the study are secondary data collected from the firms survey data of Viet Nam General Statistics Office (GSO) from 2013 to 2015. The author processed and separated the needed data for textile and garment industries then obtained data of 1455 textile firms, including 287 FDI textile firms, 58 state textile firms and 1110 private textile firms, as well as data of 3035 garment firms, including 50 state-owned garment firms, 594 FDI garment firms and 1110 private garment firms.

To estimate the productivity growth of textile garment firms as well as their components by meta-frontier approach, the study uses one aggregated output as added value, which is calculated according to the guidelines of GSO in the following: Value Added (VA) = Fixed Assets Depreciation + Total Employee Income + Profit + Indirect Taxes. Two inputs are labour (L) and capital (K). L is the average number of employees in the year, which is calculated as the average of the number of employees at the beginning of the year and the end of the year for each firm. K is the average assets at the beginning of the year and at the end of the year for each firm. Table 1 summarizes descriptive statistics

for three groups of the textile and garment industries in the period of three years from 2013 to 2015.

**Table 1: Data summary for value added and inputs of Vietnamese textile and garment firms in the period 2013-2015**

	<b>Variable</b>	<b>State-owned firms group</b>	<b>Private firms group</b>	<b>FDI firms group</b>
<b>Textile industry</b>	<b>Value Added (VA)</b>			
	<i>Mean</i>	34365.28	8342.76	86771.34
	<i>Std.Dev</i>	98187.08	30741.81	407948.80
	<b>Capital (K)</b>			
	<i>Mean</i>	207296.60	37914.80	354949.30
	<i>Std.Dev</i>	954948.90	120602.60	1594758.00
<b>Garment industry</b>	<b>Value Added (VA)</b>			
	<i>Mean</i>	32635.79	15100.21	91798.70
	<i>Std.Dev</i>	52742.67	62182.35	141394.90
	<b>Capital (K)</b>			
	<i>Mean</i>	57765.41	25635.98	103452.00
	<i>Std.Dev</i>	127072.00	109930.00	193588.90
<b>Textile industry</b>	<b>Labor (L)</b>			
	<i>Mean</i>	244.08	67.17	294.56
	<i>Std.Dev</i>	663.28	197.44	606.65
<b>Garment industry</b>	<b>Labor (L)</b>			
	<i>Mean</i>	370.52	173.18	1019.96
	<i>Std.Dev</i>	539.48	567.73	1354.71

*Source: The author's calculation*

### **3.2. Results of the global TFP Malmquist Index.**

Based on the theoretical model given above and firms survey data of GSO in the period 2013-2015, the author used DEAP 2.1 software (Coelli, 1996) to solve linear programming problems. Then the author calculated the global Malmquist TFP index and its components TEC, BPC and TGC. The table 2 presents summary of the estimated results for the global meta-frontier Malmquist TFP index and its components by groups of garment industry in the period 2013-2015.

**Table 2: Meta-frontier Malmquist total factor productivity and its decompositions of garment industry**

<b>Type of firms</b>	<b>TEC</b>	<b>BPC</b>	<b>TGC</b>	<b>TFP</b>
State-owned garment firms	1.009	0.981	0.999	0.989
Private garment firms	0.935	1.069	1.002	1.002
FDI garment firms	1.154	0.873	1.000	1.007

<i>Mean</i>	<b>1.033</b>	<b>0.974</b>	<b>1.000</b>	<b>0.999</b>
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*Source: The author's estimation from DEAP 2.1 outputs.*

The results show that the meta-frontier total factor productivity of the garment industry has decreased on average by -0.1% per year. In which, mean technical efficiency has increased by 3.3% per year, technical change has decreased by -2.6% and there was no change of technological gap.

As mentioned above, due to differences in production technology between different types of garment firms, the tendency to change total factor productivity as well as its components for each type garment firms are also different. FDI garment firms have the highest total factor productivity growth rate of 0.7% per year. This was followed by the figure for private garment firms, at 0.2% per year. Meanwhile, state garment firms showed a decrease of -0.11% per year in total factor productivity. State-owned and FDI garment firms have better results in improving their technical efficiency, while private garment firms have better results in technical change. However, the contribution of the average technical change of the garment industry decreased by -2.6% per year. This suggests that technical change is the main reason for being constrained to productivity growth of Vietnamese garment firms.

The technological gap ratio change (TGC) estimations show that state-owned garment firms are shifting farther away from production technology. This means that they relatively more backward in garment production technology. Otherwise, private garment sector shows its fastest growth in applying new production technology with 0.2% increase in technological gap ratio (TGR) and there is no change in TGR for FDI garment sector.

The estimations of technical change show that state-owned garment firms are backward in technology compared to private and FDI garment firms. Meanwhile, private garment firms take the lead in technical change. Although the results of technological gap ratio change are significant, it is only the relative rate of change in the lead in technology among the types of garment firms. The position of the production technology of each type of garment firms is more clearly indicated in the calculation of the technology gap ratio.

**Table 3: Technological gap ratio (TGR) summary in the meta-frontier DEA of garment industry**

<b>Type of firms</b>	<i>Mean</i>	<i>S.D</i>	<i>Min</i>	<i>Max</i>
State-owned garment firms	0.685	0.019	0.640	0.712
Private garment firms	0.914	0.035	0.862	1.000
FDI garment firms	0.952	0.023	0.650	1.000

*Source: The author's estimation from DEAP 2.1 outputs.*

FDI garment firms have the best technology with average TGR of 0.952, following by private garment firms and state garment firms that have the most backward production technology.

Combining the findings of the technological gap ratio and the results of the technological gap ratio change, we can see that the FDI garment sector has the leading

technology, however this position may be lost because of slow technical change (BPC). The private garment sector which was leader the in technological gap ratio change has played an important role in the development of garment industry, with significant technological change (6.9% per year). Meanwhile, the state owned garment sector was the least one in production technology and has become more backward compared to private and FDI garment sectors.

**Table 4: Meta-frontier Malmquist total factor productivity and its decompositions of textile industry**

Type of firms	TEC	BPC	TGC	TFP
State-owned textile firms	1.046	0.941	0.996	0.980
Private textile firms	0.999	0.992	0.999	0.990
FDI textile firms	0.993	1.018	0.999	1.010
<i>Mean</i>	<b>1.013</b>	<b>0.984</b>	<b>0.998</b>	<b>0.993</b>

*Source: The author's estimation from DEAP 2.1 outputs.*

In the estimates results productivity of textile industry show that, the average total factor productivity of this industry has decreased by -0.7% per year. In which technical efficiency has increased by 1.3%, contribution of technical change has decreased by -1.6% and technological gap has decreased by -0.2%.

FDI textile firms have got the highest productivity growth rate (1% per year), whereas there has been a decrease of productivity in state-owned and private textile sector. State-owned textile firms have taken effort to improve their technical efficiency, while FDI textile firms have made better progress in technology. Moreover, the private textile sector has decreased in all components of total factor productivity. Following the estimates results above, the performance of Vietnamese textile industry has been incomprehensive in the last few years and backward in technology. All of textile sectors are negative in technical change as well as technological gap ratio change. These are two major reasons that cause to reduce productivity of Vietnamese textile industry. Presently, weave and dyeing processes are still the least developed sectors in Vietnamese textile and garment industries. In fact, nearly 70% of fibre output is exported because domestic weave and dyeing firms do not meet the demand of fibre consumption. Meanwhile, garment firms have imported a large amount of fabric from abroad.

**Table 5: Technological gap ratio (TGR) summary in the meta-frontier DEA of garment industry**

Type of firms	<i>Mean</i>	<i>S.D</i>	<i>Min</i>	<i>Max</i>
State-owned textile firms	0.953	0.039	0.744	0.981
Private textile firms	0.996	0.016	0.845	1.000
FDI textile firms	0.849	0.030	0.716	1.000

*Source: The author's estimation from DEAP 2.1 outputs.*

However, only estimation *TGC* could not reflect positions in production technology of different textile sectors , that is better explained by examining estimated technical gap

ratio (TGR) of each sector in the period shown. The table 5 presents estimated technological gap ratio of each sector, which shows that private sector is leading by technology in the period 2013-2015. This is followed by state-owned textile firms and FDI textile firms that have the most backward production technology. However, because FDI textile firms have made a great effort in technical change (1.8% annual) while private and state-owned textile sectors decreased, FDI textile sector may develop strongly and become the best one. This can be explained by the fact that FDI textile firms investing in Vietnam have backward technology leading to low production efficiency. However, since the free trade agreements were signed by Vietnam, the wave of foreign investments in Vietnamese textile industry have become huge in order to gain benefit from export taxes of textile and garment products. Therefore, in the coming years, the FDI textile sector as well as Vietnamese textile industry might strongly develop.

#### **4. Discussion and Conclusion**

This study uses meta-frontier approach and a global total factor productivity index to analyse total factor productivity change as well as its components in the Vietnamese textile and garment sectors. The empirical results show that:

The total factor productivity of Vietnamese textile and garment firms fell in the period 2013-2015, and technical change is the main reason to constraint productivity growth. The private sector has taken real effort to improve technology. On the other hand, state-owned and FDI garment sectors have been significantly improving technical efficiency in the use of production factors. It is opposite to textile industry, FDI textile firms have been improving effectively technology, whereas state-owned textile firms have showed improvements in technical efficiency. At the same time, the private textile sector has experienced a slowdown in all components of total factor productivity.

There is a large technological gap among Vietnamese textile and garment sectors, which has become wide for the garment industry. This gap is the reason for differences in total factor productivity between Vietnamese textile and garment sectors.

The study uses the data envelope analysis method to estimate the meta-frontier and total factor productivity. Therefore it is sensitive to the dominant observations and the effects of statistical noise are not taken into account. However, from the study results, some recommendations can be considered for Vietnamese textile and garment industries as:

The State should have direct support policies and facilitate for textile and garment firms to raise their scientific and technological capacity as well as increase technology in the production process. Especially, The government should encourage to invest in weave and dyeing industrial parks in order to meet the conditions of infrastructure, environment, technology, etc., that promotes the development textile industry to meet the demands of the garment industry.

In recent years, the government has offered preferential policies for state-owned and FDI textile and garment sectors. However, the estimated results show that the technological change as well as the productivity of these sectors are inadequate. By contrast, the private textile and garment sector is facing many difficulties in such policies

to develop production. As a result, the state should have fair policies for textile and garment sectors.

In the process of developing Vietnamese textile and garment industries, it is necessary to focus on the private textile and garment sectors. Because they are important sectors that account for about 80% of the total Vietnamese textile and garment firms and attract a huge number of the labour force in the textile and garment industries. The government should have policies to support private textile and garment firms to access land, credit support, etc that motivate the private textile and garment sectors development.

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# FOLKSONGS: ONLINE BUSINESS

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## Abstract

*The objective of this academic article is to study about the online publication of Thai folksong literatures from two composers, Kong Huay Rai and Chutima Sodasak, who have publicized their works via YouTube website. This article discusses three works: Sai Wa Si Bo Tim Kan (You Have Said Already You Won't Leave Me), Khu Khong (The Soulmate); both written by Kong Huay Rai, and Poo Sao Ka Law (Party-Animal Lassie) by Chutima Sodasak, sung by Lamyai Haitongkham. All of these have been presented to the audience through YouTube channels.*

*The study, which analyzes the influence of music phenomenon to online popularity on YouTube, reveals that until nowadays each of these three songs has earned tremendous views on YouTube: 369 million views for Khu Khong, which is the song of a Thai TV series Naki (Nagi, "Naga Goddess"), 13 million views for Sai Wa Si Bo Tim Kan, and 335 million views for Poo Sao Ka Law. This phenomenon corroborates that representing music production works on YouTube becomes a cutting-edge online business strategy as it provides artists with a decent chance to earn tremendous popularity and establish their audience base. Therefore, YouTube can be concluded as a highly effective business tool for showcasing music production works as a mainstream channel, gaining more positive acceptance reflected by the increasing numbers of views and follows, and maximizing the benefit from online business advertisement.*

**Keywords :** Folksong, Folksong Literature, Online Business, YouTube

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## **Folksong and Online Business**

Nowadays, technology plays a significant role in aiding music listeners as it both increases their convenience and economizes their time factor. According to a survey in 2015, internet usage among Thai people has considerably increased. Considering between the method of access; mobile devices and computers, 82.7 percent of the internet access came from mobile devices (Public Organization, 2015), which supports the fact that internet is an ideal source for music listening because it provides a wide range of music, facilitates consumers' reach to songs, enables extra services such as music downloading, or enables audio-visual alternatives on YouTube. The significant benefit of online music listening is it becomes more user-friendly and offers wider range of music options through more categories: artists, albums, genres, labels, popularity, album cover, lyrics, which helps consumers select the right music of their choices (Possakorn Pongnetrpanich and Kritsana Wisamitanant, 2016: 80)

Video clip is one of good online substitutes for compact disc (CD). Because of growing popularity, music providers need to create collections of music to be provided to consumers through applications. Raekkwon Sawasdiapat and Pornthip Yenjabok (2014:12), who wrote an academic journal about Mono Music Record Label's YouTube marketing communication strategy, found that YouTube becomes the main channel for representing the record label's artists and their works. Besides, the largest proportion of popularity gained was contributed by releasing music videos (MV's) with the length of a semi-short film and creating YouTube channels to audience with generous choices of music videos. It also helped to publicize artists and their works and earn them greater positive responses. This strategy, hence, has become Mono Music's most effective marketing selling point. As music market grows more and more competitive, increasing more music distribution channel therefore becomes a suitable solution. In the present, the importance and popularity of CD fades because the advance of technology has generated various means of substitutions such as music downloads, which promotes time economization, or pirate cassettes, which reduces music production cost. Accordingly, in order to combat against these threats, music providers need to establish and develop online business channels that can benefit musical professionals, regardless of labelled or freelance. One of those means is YouTube communication.

This academic article therefore aims to study the three folksong literatures: *Khu Khong*, *Sai Wa Si Bo Tim Kan*, and *Poo Sao Ka Law*. All pieces have been publicized and exhibited on YouTube website, which has made a phenomenal difference to Thai folksong music by substantially growing new songsters' popularity measured from numbers of views and follows from YouTube audience. Consequently, new composers can reap the maximized benefits from showcasing their works through online business channels as they can debut without relying excessively on record labels.

## The Online Presentation of Folksongs

YouTube brings about new phenomenon to music industry because musical composer can express their song on YouTube. They can gain popularity, debut through the online platform, and enjoy a great success, which becomes the inspiration for modern composers. Therefore, I would



**Figure 1** Kong Huay Rai

Source : [https://www.google.co.th/search?q=Kong + Huay Rai](https://www.google.co.th/search?q=Kong+Huay+Rai)

distinctiveness in term of vocal, lyrics and melody composition, and performance, in his works. Distinctive vibe of modern north-eastern Thai musical style is incorporated in Kong's pieces, especially *Sai Wa Si Bo Tim Kan*, which received a substantial popularity from general public and won Mahanakhon Awards in 2017 (Wikipedia, 2018).

Kong composed the piece from his own experience, depicting the agony of his heart bruised by the broken promise. The lyrics, combined with Sarapanya melody, is written with ancient Isan (north eastern Thai) dialect. Having gained abundant followers in his own YouTube channel, he joined Sound Mee Haeng Record, the new-wave record label, having his original work re-edited, sound re-recorded, and MV re-filmed. Currently, this new edition gained 13 million views on YouTube, which is incomparable with the original one. Nevertheless, *Sai Wa Si Bo Tim Kan* has been sung frequently in various singing competitions (Theerapat Charoensuk, 2018).

The sensation in this masterpiece thus provided him a good opportunity to contribute in *Naki*, a TV series on Channel 3, by composing songs namely *Khu Khong* (The Soulmate), the original soundtrack for the show. *Naki's* popularity, belief about Naga



Tim Kan

Source : <https://www.youtube.com/watch?v=yiDgLA18soc>

like to discuss about two composers who become greatly known and earn tremendous popularity across YouTube in this article.

**Kong Huay Rai** Akkaradej Yodjumpa, known professionally as Kong Huayrai or Kongla Yodjumpa,

is a singer and composer from Sakon Nakhon province. He enjoyed a great success from exhibiting his composition works on YouTube because of

**Figure 3** The View Number of Khu Khong  
Source : <https://www.youtube.com/watch?v=wsHNUOgJJZU>

(imaginary creature in Thai and Indian literatures that resembles a snake combined with many kinds of animals), and the lyrics of *Khu Khong*, which is an Isan-dialect love ballad, portraits about the steadfast love that will never fade away no matter how long the time flies or how impregnable the obstacle is. Despite breaching the fate, the couple is still willing to belong together at any cost or sacrifice. *Khu Khong*; therefore, means the soulmates who will always wait and be there for each other forever. This song became one of the hits in 2017, reaching 369 million views on YouTube currently. This song won many prizes: Looktoong Mahanakhon Awards for Most Popular Song, JOOX Awards for Folksong of the Year, and Nataraj Award for Best Drama Music. (Wikipedia, 2018).

These successes made Kong the first frontline Thai folksong artist who earned popularity and debuted via online channel, which became a new phenomenon of Thai folksong music. He was then invited to perform as a presenter for different product brands, persuaded to act in movies, and hired to write original soundtracks.

**Chutima Sodapak** is a composer from Bueng Kan province who presented her work on the YouTube at the age of only 17. Her career as a singer started when she began to write the first song, *Bo Kwaang Taang Eye* (I'll Get Outta Your Way, My Sweet), and launched it on both her personal Facebook and YouTube channel. Next, Chutima wrote another song, *A-Deet-Koey-Pung* (My Ruined Past) and publicized it online. Later, a local record label became interested in Chutima's work and persuaded her to join the team, which made her one of the prolific key persons who generate a great number of dramatically popular music works.

Chutima wrote another song *Poo Sao Ka Law* (Party-Animal Lassie) for a folksong



**Figure 4** Chutima Sodapak

Source : [https://www.google.co.th/search?q=Chutima + Sodapak](https://www.google.co.th/search?q=Chutima+Sodapak)

singer, Lamyai Haithongkham. The Song depicts the lifestyle and the characteristic of Thai provincial girls in general with a simple and uncomplicated language, such as the starting verse that says, “Hao-Kae-Poo-Sao-Ka-Law. Bo-Maen-Poo-Sao-Ka-Rian. Bo-Dai-Ka-Yun-Mun-Pian. Pakka-Si-Kian-Young-Dye-Yuem-Moo.” This phrase means “I’m a party animal girl; not a nerdy one, so I am not that studious, you know. I still always need to borrow my friends’ pens at every lecture.” This candid, unfussy way of language usage; as a result, effortlessly grabs the audience’s attention because it can easily touch

their emotion. Having been launched on the YouTube.

The Song became highly successful and so great a sensation that the Prime Minister needed to talk about it in his speech. Despite the absence of music video, *Poo Sao Ka Law* still met an extraordinary success because of the lyrics written with a down-to-earth and

straightforward vocabularies depicting the actual lifestyle and social context of northeastern Thai people in the modern days. (Theerapat Charoensuk, 2018). Chutima has been invited to perform in many concerts. Her phenomenal success epitomizes a music professional who makes a stellar debut on YouTube. As a conclusion, YouTube; therefore, becomes one of innovative means for new-entry music professionals to reap the maximized benefit from online business.

### Summary

Both Kong Huay Rai and Chutima Sodapak started their career from producing their own music works, publicizing those pieces on YouTube, and gaining popularity from



**Figure 5** The View Number of Poo Sao Ka Law  
 Source : [https://www.youtube.com/watch?v=xir5VPhIJ\\_M](https://www.youtube.com/watch?v=xir5VPhIJ_M)

a small group of audience. Eventually, they became highly successful. Nowadays, *Sai Wa Si Bo Tim Kan*, the song about a provincial man with a broken heart, has received 13 million views on YouTube. Moreover, because of the popularity of the TV soap opera *Naki*, its original soundtrack *Khu Khong* (The Soulmate) has earned many prizes, especially Nataraj Awards for Best Drama Music, and thus 368 million views on YouTube at present. Additionally, *Poo Sao Ka Law* (Party-Animal Lassie), the song that talks about Northeastern Thai society and

lifestyle, sung by Lamyai Haitongkham, has become so big a Talk-of-the-Town that it now has been earning 335 views on YouTube. The success of these three songs on YouTube has implanted new-wave music professionals with the motivation to debut without relying on any big record labels. They can simply produce their own music works from home and just launch them straightaway on YouTube.

Online music business has dramatically grown, which thus enables music producers to showcase their creations or brainchildren online and allows music listeners to enjoy the wider range of music choices. It is a convenient choice for artists, composers, and singers, to produce and exhibit their works at any point of time. Accordingly, to act in line with the advent of Thailand 4.0, which Thai economy will be mainly engineered by both technological development, knowledge base, and creativity, it needs to be ensured that all parties involved in music industry be supported continually and able to survive genuinely. Therefore, the productions of songs and music, which combines both scientific technology and artistic creativity together, need to be decently fostered and consistently developed in order to propel Thailand's knowledge-based economy forward.

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# IMPACT OF WORKING CAPITAL MANAGEMENT ON FINANCIAL PERFORMANCE OF LISTED FIRMS: THE CASE OF VIETNAM

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## Abstract

*The research investigates the impact of working capital management on financial performance by using the data collected from listed firms on Ho Chi Minh Stock Exchange (HOSE). The sample is comprised of 69 public firms over the period of 3 years from 2014 to 2016. Using the two variables including Cash Conversion Cycle (CCC), DIO (Days of Inventory Outstanding) as measurements for Working Capital Management, the research also takes the following variables into consideration: “Growth, Cash flow, Liquidity, Risk, and Leverage” which are proven to have impacts on firm performance besides working capital management. Regarding the measurements of financial performance, the variables include Return on Assets (ROA), Return on Equity (ROE), and Return on Sales (ROS). The results imply that Working Capital Management positively impacts the financial performance of firms in the sample. Thus, our study gives a new insight to managers on how to improve the financial performance with working capital management.*

**Keywords:** Working capital management, financial performance, Vietnam

## 1. Introduction

Financial management plays an important role in management activities of corporations. Financial management activities help to ensure capital for enterprises, to take measures so as to elevate operation efficiency and to control the business operation of firms. The contents of financial management include long-term investment decisions, financing decisions, short-term financial decisions (or working capital management), and many other decisions such as repurchase and mergence, repurchase of company’s shares. Working capital measures a company’s efficiency and represents the liquid assets that are available with a firm. It also indicates firm’s short term financial health and its capacity to meet day-to-day operating expense. Thus, working capital management has a significant impact on firm performance. However, in practice, for Vietnamese enterprises, how to manage working capital efficiently is still a problem. Therefore, it is important to quantify the relationship between working capital management and firm performance. From that point, the managers will have concrete and accurate foundations to manage working capital of their firms.

The purpose of this study is to analyze the impact of working capital management on the financial on HOSE in the period of 2014 to 2016. This research contributes another study on working capital management in the world, especially in a developing country. It

also helps managers make suitable decision on working capital management in order to elevate their firm performance.

## **2. Literature Review**

It is proven by many empirical studies that the performance of firms can be influenced by many factors, one of which is working capital management. Working capital is viewed as one of the measurements of both liquidity and efficiency of a firm.

In the world, many empirical researches have been conducted in order to examine the impact of working capital management on firm's financial performance. Most of the studies concluded that working capital management significantly influences firm's profitability. However, the specific relationship between the two factors varied according to countries and markets.

The impact of working capital management on firm performance was positive in a number of studies. One of them is Asaduzzaman & Chowdhury (2014) in Bangladesh, in which an empirical study was built, based on the data from Bangladeshi Textiles firms. The authors found a significant relation between working capital management and profitability, using four measures, Days of Inventory Outstanding (DIO), Days of Sales Outstanding (DSO), Cash Conversion Cycle (CCC), and Days of Payables Outstanding (DPO) to represent working capital management. While DPO showed a negative impact on profitability, the rest indicated a positive correlation with firms' profitability. Another empirical research from Nigeria, Imeokparia (2015) has also found a positive relation between working capital management and firms' performance. In addition, Akoto et al. (2013) had examined the impact by using the data from Ghanaian companies, and the results suggested that working capital management (as measured by CCC) positively influenced firms' profitability as measured by net operating profits.

On the other hand, many researches support the traditional belief of a negative relationship between working capital management and firms' performance; that is increasing working capital investment by raising proportion of current assets in total assets would negatively affect the profitability of firms. Using the same four measures of working capital management as the Asaduzzaman and Chowdhury (2014), Javid and Zita (2014) found a negative relationship between working capital management and profitability. Similarly, Padachi (2006), studying small-scale manufacturing enterprises in Mauritius for the period 1998-2003, showed that payables, and CCC are negatively related to firm performance (as represented by ROA), and that high level of investment in inventories and account receivables is associated with low profitability. Raheman and Nasr (2007) in Pakistan, Garcia-Teruel and Solano (2007) in Spain and Kaddumi and Ramadan (2012) in Jordan all came to the conclusion that managers can create more value by shortening CCC.

In addition, Salawu and Alao (2014) found mixed relations within the Working capital management and profitability when it comes to each measurement of the working capital used. The average collection period, the average payment period, were positively and significantly related to profitability; inventory turnover in days, CCC were also significant but negatively related to profitability. Interestingly, Gill et al. (2010) achieved the following

results: (i) there is a strong negative relationship between DSO and profitability; (ii) there is no relationship between DPO or days of inventory on hand and profitability of business; (iii) there is a strong negative relationship between the CCC and profitability.

Moreover, studies on the relationship between working capital management and business performance in Southeast Asia have been conducted. Zariyawati et al. (2009) revealed that reducing cash conversion period results in an increase in profitability. Studying companies listed on the Thai stock market, Napompech (2012) came to a similar conclusion; profitability can be increased by reducing CCC, inventory turnover days and DSO. On the other hand, Charitou et al. (2012) in the study of developing countries in Asia showed a positive relationship between working capital management (CCC) and corporate profitability (ROA).

In Vietnam, few studies on the impact of working capital management on firm performance can be found. First of all, Huynh (2010) reported that profitability of a firm is strongly negatively affected by its working capital management. Also, the profitability will grow when the number of days of account receivables and days of inventories on hand are diminished, and the opposite is true for number of days of account payables. Bui (2017) reported similar findings for 14 listed pharmacy firms and 50 unlisted ones. In contrast, Nguyen et al. (2016) found no correlation between the two factors.

Not many studies on the topic have been conducted in the emerging market Vietnam, and most of which only explore the results for one specific industry such as Pharmacy in Bui (2017), or the result for listed firms in general. Therefore, this study is devoted to finding and comparing the impacts of working capital management on firm performance in 5 different industries, as well as making some recommendations. Moreover, to provide a different and broader approach we are going to add ROS besides ROA and ROE, which are usually used in prior studies, as measurements of firms' performance.

### 3. Data Collection and Research Methodology

The sample of this study comprised of 69 firms listed on HOSE from 2014 to 2016. The chosen firms belong to five industries: Agriculture, fishery and forestry production, Construction, Food – Beverage – Tobacco, Transportation and Warehousing, and Wholesale and Retail. Industry classifications were based on the classifications on the website of vietstock.vn which used North American Industry Classification System (NAICS). The five industries selected are one of the leading industries in Vietnam, representing the three economic sectors: agriculture sector, industry sector, and service sector.

**Table 9: Descriptive Analysis of the Sample**

Sectors	No. of firms	Percentage (%)
Agriculture, fishery and forestry production	11	15.94
Construction	12	17.39
Food – Beverage – Tobacco	12	17.39
Transportation and Warehousing	19	27.54
Wholesale and Retail	15	21.74
<b>Total</b>	<b>69</b>	<b>100</b>

The data for this study were secondary data which was acquired from Vietstock.vn and the financial statements of the corresponding firms. Financial ratios including ROA, ROE, Net revenues growth rate, Cash Ratio, Liabilities to Assets, Days Sales Outstanding, DIO, and DPO were directly obtained from Vietstock.vn. Other figures such as Depreciation, Net revenues, Profit after tax, Total assets were taken from firms' financial statements. All 69 firms in the sample were required to have available financial statements from 2011 to 2016. In total, 207 firm-year observations were obtained for analysis.

The following regression models were used to investigate the relationship between firm performance and working capital management as:

$$\text{Model 1: ROE} = \beta_0 + \beta_1\text{DIO} + \beta_2\text{Growth} + \beta_3\text{CF} + \beta_4\text{Liquidity} + \beta_5\text{Risk} + \beta_6\text{Leverage} + \mu$$

$$\text{Model 2: ROA} = \beta_0 + \beta_1\text{DIO} + \beta_2\text{Growth} + \beta_3\text{CF} + \beta_4\text{Liquidity} + \beta_5\text{Risk} + \beta_6\text{Leverage} + \mu$$

$$\text{Model 3: ROS} = \beta_0 + \beta_1\text{DIO} + \beta_2\text{Growth} + \beta_3\text{CF} + \beta_4\text{Liquidity} + \beta_5\text{Risk} + \beta_6\text{Leverage} + \mu$$

**Table 10: Variables and Its Measurements in the Model**

<b>Variables</b>	<b>Measurement</b>
Return on Assets (ROA)	Net Income/Total Assets
Return on Equity (ROE)	Net Income/Owners' Equity
Return on Sales (ROS)	Net Income/Net Revenues
Days Inventory Outstanding (DIO)	(Inventory/Cost of Sales)*365
Growth	(Net Revenues <sub>t</sub> – Net Revenues <sub>t-1</sub> )/Net Revenues <sub>t-1</sub>
Cash Flow (CF)	(Profit after tax + Depreciation)/Total Assets
Liquidity	Cash and cash equivalents/Current Liabilities
Risk	Standard deviation of the ratio EBITDA/Total Assets
Leverage	Total Liabilities/Total Assets

This method was used to describe basic quantitative characteristics of the data in this study. It includes the following steps:

First, we calculate mean, median, maximum, minimum, standard deviation values to obtain basic conclusions and evaluation about the sample.

Second, we calculate the correlation between variables to ensure the significance of the regression analysis and to find the relationship between independent and dependent variables.

The study also used the multiple regression analysis on the panel data to measure the linear relationship between the variables in the four regression models and to test the hypothesis.

*The regression analysis process for each model includes the following steps:*

Step 1: Estimate the coefficients of six independent variables in each regression model with the corresponding dependent variable using the Fixed Effect and Random Effect methods in STATA12.

Step 2: Check for possible problems of the regression models include multicollinearity, heteroscedasticity, errors in functional form and omitted variables, serial correlation and normality distribution of error term.

Step 3: Suggest solutions for problems of regression models.

#### **4. Research Results**

##### *4.1 Descriptive Statistics of Data*

Table 3 illustrates the summary statistic of the variables in the model of the impact of WCM to firm performance of 69 firms listed on HOSE from 2014 to 2016. The data was collected yearly, therefore the total observations was 207.

ROA: the dependent variable which presents the firm performances of listed firms in the sample has the mean of 0.069 (6.9%), the magnitude of fluctuation was relatively large with the lowest ROA -0.944 (-94.4%) belongs to HUD3 Investment and Construction Joint Stock Company in 2014, compared to the highest ROA of 0.722 (72.2%) in 2015 achieved by KIDO Group. The standard deviation of ROA is 0.157.

ROE: the dependent variable which measures corporations' profitability has the mean of 0.153 (15.3%), with the lowest of -1.091(-109.1%) and the highest of 0.912 (91.2%); these were the ROAs of Japan Vietnam Medical Instrument Joint Stock Company in 2015 and KIDO Group in 2015 respectively. Its standard deviation is 0.203.

ROS: the return on sales of firms in the sample which presents companies' operational efficiency has the lowest and highest values of -2.632925 and 1.67826 respectively. The average value of ROS is 0.1229, which indicates that in general, firms in the sample use about 87.71% of their revenue to run businesses. Its standard deviation is 0.2905.

**Table 11: Descriptive Statistics of the Research Sample**

<b>Variables</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>n</b>
ROE	-1.091	0.912	0.153	0.203	207
ROA	-0.944	0.722	0.069	0.157	207
ROS	-2.632925	1.67826	0.1228809	.2904876	207
DIO	0	3579.38	141.127	326.784	207
Growth	-0.999	4.167	0.189	0.520	207
Cash flow	9.61	-1.5	0.237	1.060	207
Liquidity	0	8.29	0.774	1.393	207
Risk	0	64.99	1.470	6.589	207
Leverage	0	0.948	0.314	0.251	207

DIO: the independent variable which represents the number of inventory days and efficiency of inventory management has average value of 141 days. Therefore, about after 5 months, the inventory is rotated. Inventory days have a minimum value of 0 days and the maximum value of 3579 days and a standard deviation of 17 days. The zero DIO is explained that there are firms belonging to Transportation industry and they tend to have zero inventories.

Growth: the independent variable representing sales growth has the highest value of 4.167 (416.7%) while lowest value of -0.999 (-99.9%), which means firms in the sample have relatively high growth. The variable has the mean of 0.189 (18.9%) and standard deviation of 0.520.

Cash flow: the mean cash flow variable is 0.27 and its maximum and minimum values are 9.61 and -1.5, respectively. The standard deviation is 1.060.

Liquidity: cash ratio has an average value of 0.774, which indicates that most listed firms in the sample don't have good liquidity abilities. The maximum value of the variable is 8.29 while the minimum value is only 0 and the standard deviation is 1.393.

Risk: the average value of risk variable is 1.470, which indicates that most of the listed firms in the sample have high risk. The highest and lowest values are 0 and 64.99, respectively. The standard deviation is relatively high (about 6.589).

Leverage: the financial leverage variable ranges from 0 to 0.948. The mean is 0.314, which shows debt in average accounts for 31.4% in these listed firms. The standard deviation is quite small (0.251).

#### 4.2. Correlation Analysis

Table 4 shows that ROE, ROA and ROS negatively correlate with variables which are DIO, leverage and risk.

**Table 12: Correlation Matrix among Variables**

	ROE	ROA	ROS	Growth	Cash flow	Liquidity	Risk	Leverage	DIO
ROE	1								
ROA	0.6300	1							
ROS	0.5944	0.5387	1						
Growth	0.1630	0.0693	-0.0049	1					
Cash flow	0.0625	0.0863	0.1813	-0.1292	1				
Liquidity	0.0564	0.0763	0.1870	-0.0404	-0.0183	1			
Risk	-0.2961	-0.2639	-0.4965	-0.0741	-0.1007	-0.0112	1		
Leverage	-0.2645	-0.2662	-0.2861	-0.0302	-0.0813	-0.3859	-0.1317	1	
DIO	-0.2717	-0.1744	-0.1267	-0.1482	-0.0711	-0.1253	-0.0229	0.4114	1

Data in the Table 4 illustrate that positive correlations with variables that are cash flow, and liquidity. Besides, ROE and ROA both positively correlate with growth, whereas

the correlation between ROS and growth is negative. In particular, the independent variable risk has the strongest impacts on both ROE and ROS of a firm, while leverage has the most significant influence on ROA. In addition, the correlation matrix also indicates that the correlation coefficients between variables are all less than 0.7. Therefore, it is concluded that there is no strong correlation among variables in one model and the multicollinearity problem will not occur.

#### 4.3. Regression Analysis

Regression analysis is applied to find the relationship between firm performances and working capital management. We base on the results of the Hausman test to choose between Random Effect Estimation and Fixed Effect Estimation. The results of the test signify that Fixed Effect Estimation is to be applied on model 1, model 2 and model 3.

Table 5 shows the results that are obtained by using DIO as the measure of WCM.

**Table 13: Regression for Model 1, 2 and 3 using DIO**

	Model 1 ROE	Model 2 ROA	Model 3 ROS
Constant	-0.0013117	-0.006324	-0.1585821
DIO	0.0002323	0.00000604	0.0000983
Growth	0.0528023	0.0182362	0.0216537
Cash flow	0.5517989	0.384122	0.0216537
Liquidity	0.002385	-0.0132996	0.0075047
Risk	-0.0017772	-0.0018871	-0.0080626
Leverage	-0.0605691	-0.0227128	0.0508629
R-squared	0.5734	0.3002	0.6583
Prob(F-statistic)	0.0000	0.0000	0.0000
Observation	207	207	207

**ROE = -0.0013117 + 0.0002323 x DIO + 0.0528023 x Growth + 0.5517989 x Cash flow + 0.002385 x Liquidity -0.0017772 x Risk -0.0605691 x Leverage**

**ROA = -0.006324 + 0.00000604 x DIO + 0.0182362 x Growth + 0.384122 x Cash flow -0.0132996 x Liquidity -0.0018871 x Risk -0.0227128 x Leverage**

**ROS = -0.1585821 + 0.0000983 x DIO + 0.0216537 x Growth + 0.0216537 x Cash flow + 0.0075047 x Liquidity -0.0080626 x Risk + 0.0508629 x Leverage**

The result for the relationship between DIO and ROA in model 2 is not statistically significant, hence are not reported here.

The regression coefficient of DIO for ROE and ROS are 0.0002323 and 0.0000983 respectively. This means that on average, if DIO increases by 1 unit, it will increase ROE and ROS by 0.0002323 and 0.0000983 respectively, assuming the other factors remain unchanged. The estimated coefficient of DIO is statistically significant at the 10% level in

regressions for ROE and ROS. As a result, the high number of days of inventory will lead to higher ROE and ROS.

In addition, cash flow has positive relationships with ROE, ROA and ROS. These relationships are statistically significant at 10% level. Besides, the results of model 1 and 2 indicate that growth and risk have statistically significant relationships with ROE and ROS respectively. Growth has a positive impact on ROE, however risk negatively influences ROS. The  $R^2$  show that overall the model for ROE can explain 57.34% of all the variability, 30.02% is accounted for by ROA and 65.83% are accounted by ROS. Moreover, the F-statistics indicates that overall the significant level of 3 models is at 10% level.

## **5. Discussions**

### *5.1. Working Capital Management*

Based on the empirical results, the variable representing working capital management (DIO) had a significant positive relationship with firm performance in Vietnamese listed firms as DIO had statistically significant relationships with two out of three firm performance measurements (ROE and ROS). Although there has been a large number of research that found a significant negative relationship between DIO and firm performance such as the research of Deloof in 2003, our study on HOSE listed firms gave an opposite result. Our result indicates that when DIO are longer, firm performance is better.

The causes of this result can be explained by any of the following reasons. Firms with longer DIO may maintain a large amount of inventory, which may increase sales and lead to higher profitability, as stated by Deloof (2003). Larger inventory also reduces the risk of an out-of-stock event. If a stock-out happens, firms may incur high costs due to possible disruptions in the production process, or losses from business operations because of the scarcity of goods, according to Blinder and Manccini (1991). Moreover, maintaining large inventory can decrease supplying costs and protect firms against price fluctuations (especially in an economy with high inflation rates and adverse macroeconomic factors), among other advantages.

The positive association between DIO and firm performance adds to existing literature such as Mathuva (2010), Md. Asaduzzaman and Chowdhury (2014).

### *5.2. Growth*

Overall, growth rates had a positive relation with firm performance in Vietnamese listed firms. This result is in agreement with studies of Zeitun and Tian (2007), García-Teruel and Martínez-Solano (2007), and Nguyen et al. (2016). As can be seen, firms with high growth rates can create more profits from investments and have more opportunities to invest in profitable projects, which improve firms' performance. High growth rates also illustrate an increase in efficiency and a decrease in cost of capital.

### *5.3. Cash Flow*

Cash flow had a significant positive relationship with all firm performance measurements. This is because firms with high cash flow can invest in positive projects without raising external funds at high cost.

#### 5.4. Risk

Risk negatively affected ROS in Vietnamese listed firms. With fluctuations in cash flows, firms have higher probability of facing risk of default, financial distress and greater bankruptcy costs, which reduces corporate performance

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# THE ELEMENTS AFFECTING THE CUSTOMER-ORIENTED BRAND EQUITY OF TOURISM ESTABLISHMENTS IN HANOI

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## **Abstract**

*The study aims to develop a model for measuring and verifying the relationship between dimensions of brand equity and brand equity as a whole. The study uses quantitative methods to formally evaluate the scale and the impact of the factors on the customer-oriented brand equity of travel agencies in Hanoi. The samples were randomly selected from 215 questionnaires which were distributed and collected. The finding is that dimensions of brand value include brand awareness, brand association, perceived quality, brand loyalty, which have a strong impact on the brand equity of tour operator. This result implies that travel agencies should promote branding to improve brand awareness and brand loyalty in order to improve perceived quality and brand loyalty, thereby increase the brand value and competitive advantages.*

**Keywords:** Brand equity, travel agency.

## **1. Introduction**

The concept of brand equity has drawn so much attention of many scientists in the world since the 1980s. These studies showed the extremely important role of the brand. Building brand to increase competitive advantage has been proposed by many researchers such as Aaker (1991,1996), Keller (1993, 1998, 2003), Yoo et al. (2000, 2001) or Atilgan et al. (2005,2009) ... If the brand is considered as the tip of an iceberg, the brand equity is the sink which helps the businesses survive and stand out in the market among fierce competition. Particularly, in the service sector where the product is invisible, the quality is only perceived in the process of using, the process of production and consumption takes place simultaneously, the brand is the first factor to help the customers aware and encourage them to use the service. In the context of economic integration and extensive development, Hanoi in general and tourism in particular have the opportunity to develop their great potential. However, the competition is also extremely fierce among domestic enterprises and between domestic and foreign enterprises. Therefore, branding is extremely necessary and urgent. With the understanding of the factors affecting brand equity of travel agencies in Hanoi, the managers can make the right decisions towards the criteria that customers prefer.

However, the assessment of brand equity in the service sector is relatively new; most of the studies focus on tangible products and there is no formal study about the factors affecting brand equity of travel agencies in Hanoi. Thus, the paper focuses on the factors affecting the brand equity of travel agencies in Hanoi to provide the managers and policy makers of travel agencies with a more holistic view.

The author identifies three main approaches: Finance-oriented approach, Business-oriented approach, and Customer-oriented approach. Customer-based approach (a concept of brand equity) is considered in the context of making the marketing decision.

The brand equity in the financial sense (the value of financial assets which brand equity creates for the business) is defined as the cash flow that accumulates for the branded product compared with non-branded products (Simon and Sullivan, 1993). Buil et al. (2008) argue that brand creates profit for the brand and money flow for the organization. Brand equity is the added cash flow created by the investments in the brand (Srinivasan and Associate (2005)). However, this approach does not help the managers utilize and develop the brand values (Kim et al., 2008).

Business-oriented approach and customer-oriented approach was studied by Farquhar (1989), Aaker (1991a), Srivastava et al. (1991)). Farquhar (1989) defines brand equity as the value added to the business, distributor, or the consumer by what the brand brings to the product. Brand equity is a set of assets and liabilities associated to a brand name and its symbols that add to or subtract from the value provided by a product/service to a firm or to its customers (Aaker (1991a). Brand equity is the association and behavior of the consumers in the distribution channel which can produce sales as well as increase benefits for branded products compared to non-branded products? In addition, these associations and behaviors can bring advantages and differences to the business.

Brand equity in customer-oriented approach relates to only consumer perceptions of the brand rather than other objective indicators (Lassar et al., 1995). ). This approach was supported by many researchers such as Aaker (1991,1996), Keller (1993,2008), Kapferrer (1994), Yoo et al. Walfried Lassar, Banwari Mittal and Arun Sharma (1995), Zeithaml, (1988) Villarejo-Ramos and Sanchez-Franco (2005), Amarette and Hendriana (2011), Villarejo- Ramos and Sanchez-Franco (2005), Amaretta and Hendriana (2011) ... because the origin of all activities must come from the customers. This paper is also based on this approach. The two most prominent researchers for this approach are David Aker and Kevin Lane Keller, whose two most famous books are *Managing Brand Equity* published in 1991 and *Managing Customer – Based Brand Equity* published in 1993. The results of these two studies were also searched the most. Results from Keller's study was based on Aaker's study but it was more comprehensive and rigorous. According to Aaker, brand equity consists of brand loyalty, brand association, brand awareness and perceived quality:

*Brand loyalty is the core dimension of brand equity. It's like "the binding that a customer has for a brand".*

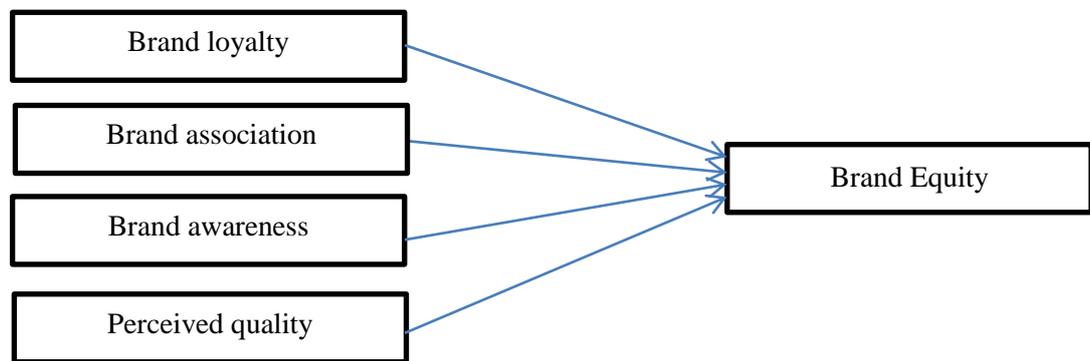
*Brand association is anything in the mind of the consumer when thinking about the brand. The set of brand associations in a meaningful way is called brand image. Brand*

*image plays an important role in differentiating the brand. Brand personality is considered as the key association of brand image as it creates the identities and durability of the brand (Aaker D., 1996a; Aaker D., 1996b). Brand association (BAS) is anything in the customer's memory that "links" to a brand.*

*Brand awareness refers to the ability of a customer to recognize or remember a brand as a component of a particular product (Aaker D. 1991).*

*Perceived quality is the perception of the customer about the quality or overall superiority of a product in relation to other competitive options.*

Therefore, the model of factors affecting brand equity as defined by Aaker is shown below:



There are many models of brand equity valuation but the author found that Aaker's model is the most suitable tool to analyze the factors affecting the customer-oriented brand asset of travel agencies in Hanoi area.

The following hypotheses are proposed:

*H1: There is a positive relationship between brand loyalty and brand value.*

*H2: There is a positive relationship between brand association and brand value.*

*H3: There is a positive relationship between the level of brand awareness and brand value.*

*H4: There is a positive relationship between perceived quality and brand value.*

## **2. Methodologies**

The study uses quantitative methods to formally evaluate the scale and the impact of the factors influencing the customer-oriented brand equity of travel agencies in Hanoi.

Once the research model and observation variables have been developed, quantitative research is conducted in four steps:

*Step 1:* Design survey sheet, carry out survey trial. Questionnaires are delivered directly and send online to the consumers.

*Step 2:* Design the official survey sheet.

*Step 3:* Conduct the official survey.

- The appropriate sample size for EFA analysis: The study has 24 variables need to be considered, so the minimum sample size needed is  $24 * 5 = 120$  observed variables (Hair & ctg 2006).

- The appropriate sample size to use regression model: For best regression results, the sample size should be:  $n \geq 8p + 50$  (where n is the minimum sample size needed, and p is the independent variable observed in the model). In this study, there are 19 observed independent variables with minimum sample size of  $8 * 19 + 50 = 202$  (Tabachnick & Fidell, 1996).

Thus, the minimum sample size 202 will help the author to achieve study purposes. The number of survey sheet delivered is 215, the number of the collected sheet is 215, the number of valid sheet is 215. Method of sampling is convenience sampling.

The surveyed objects are people in Hanoi.

*Step 4: Data collection and processing:*

- Statistics to describe the collected data.
- Analyze and process the data with the support of SPSS software version 22 for window operation.
- Data analysis is performed by measuring the reliability of the scale using Cronbach'Alpha coefficient, verify the value of the scale by exploratory factor analysis (EFA) and multivariate regression analysis to find out the importance level of the factors.

### 3. Results

Descriptive statistics of sample

Gender	Male	33.9%
	Female	66.1%
Ages	<20	5.3%
	20-30	12.8%
	30-40	22.2%
	40-50	37.3%
	>50	22.4%
Income	<5 million/month	17 %
	5-10 million/month	24.5%
	>10 million/month	58.5%
Married status	Not married	43.6%
	Married	56.4%

Descriptive statistics of the sample shows that in the total of 215 respondents, 33.9% is male, female accounts for a larger number of 66.1%. People aged 40-50 years old accounts for the largest proportion of 37.3%, the respondents younger than 20 years old is

only 5.3%. Income statistics show that over a half of the respondents earn more than 10 million VND/month. In addition, the proportion of the married and unmarried is approximately equal.

### Verify reliability of the scale

Synthesis of observed variables in the model

Name of variable	The number of observed variables	Type of variable
Brand awareness	3	Independent variable
Brand association	3	Independent variable
Brand loyalty	6	Independent variable
Perceived quality	3	Independent variable
Brand equity	4	Dependent variable

Verify reliability of the scales

	Correlation coefficient between variable and total	Cronbach' Alpha	Source
Variable "Brand awareness" of travel agencies			Yoo et al. (2000)
<i>I am aware of how X looks like</i>	0.603	0.765	
<i>I can realize X among other competitive brands</i>	0.745	0.708	
<i>I know the brand X</i>	0.801	0.795	
Variable "Brand association" of travel agencies			Yoo et al. (2000)
<i>Some personalities of brand X appear quickly in my mind</i>	0.635	0.806	
<i>I can quickly image the logo, symbol of brand X</i>	0.553	0.742	
<i>I have difficulty in recalling brand X in my mind</i>	0.604	0.764	
Variable "Perceived quality" of travel agencies			Yoo et al. (2000)
<i>X is a high-quality brand</i>	0.684	0.825	
<i>Sure that quality of brand X is extremely high</i>	0.752	0.648	
<i>Maybe brand X has many interesting programs</i>	0.895	0.786	
<i>Maybe X is very reliable</i>	0.659	0.702	

	Correlation coefficient between variable and total	Cronbach' Alpha	Source
<i>X must have high quality</i>	0.679	0.748	
<i>X seems to have poor quality</i>	0.708	0.729	
Variable "Brand loyalty" of travel agencies			Yoo et al. (2000)
<i>I think I am loyal to X</i>	0.559	0.802	
<i>X is my top choice</i>	0.864	0.677	
<i>I will not use the tours from another brand if X has them</i>	0.675	0.735	
Variable "Brand equity" of travel agencies			Yoo et al. (2000), Yoo & Donthu(2001)
<i>Even if the brands are the same, the use of X instead of other brands is still considered meaningful</i>	0.847	0.759	
<i>If another brand is exactly the same as X, I still choose X</i>	0.865	0.785	
<i>If another brand is as good as X, I still choose X</i>	0.679	0.825	
<i>If another brand is not different from X, choosing X is still a smart choice</i>	0.723	0.689	

*X is a particular brand*

*Source: Collection of the author*

According to Nunally & Burnstein 1994; according to Nguyen Dinh Tho & Nguyen Thi Mai Trang, 2009, the authors found that: The observed variables are greater than 0.6 which shows that these variables are closely related to each other and these scales are all selected. Observed variables have correlation coefficient between variable and total greater than 0.3, all of these variables are accepted and will be included in EFA.

Alpha values: greater than 0.8 means good scale; from 0.7 to 0.8 is usable scale; 0.6 or more is usable in case that the research concept is new or new in the research context (Nunally, 1978; Peterson, 1994; Slater, 1995, cited by Hoang Trong and Chu Nguyen Mong Ngoc., 2005).

### **Result of EFA**

With independent variables: Rotatel component Matrix, Kaiser- Meyer – Olkin and Bartlett's test

	Factors			
	1	2	3	4
NB1	0.756			
NB2	0.789			
NB3	0.825			
LT1		0.761		
LT2		0.825		
LT3		0.679		
TT1			0.812	
TT2			0.723	
TT3			0.895	
TT4			0.684	
TT5			0.748	
TT6			0.864	
CL1				0.748
CL2				0.746
CL3				0.694
KMO	0.866			
Chi-Square	10764.302			
Df	423			
Sig.	0.000			

With independent variables: Rotatel component Matrix, Kaiser- Meyer – Olkin and Bartlett's test

	Factors	
	1	
TS1	0.811	
TS2	0.762	
TS3	0.844	
TS4	0.648	
KMO	0.768	
Bartlett's test	Chi-Square	2365.768
	Df	254
	Sig.	0.000

Source: Survey of the author.

EFA is used to verify the values of the scale. The observed variables with load factor  $<0.4$  will be rejected (Clack and Watson, 1995). According to the analysis results, none of the observed variables is eliminated. The components with satisfactory transfer coefficients ( $> 0.5$ ) ensure a significant level of factor analysis (Hair et al., 1998). The KMO coefficients of independent and dependent variables are 0.866 and 0.768 respectively ( $> 0.5$ ), with mean Sig.=0.000 which reveals that factor analysis is appropriate, the variables are correlated and satisfy the conditions in factor analysis.

#### **Verify the importance of factors**

The results of multivariate regression analysis show the impact level of the factors; the level of impact expresses by the Beta regression coefficient through the equation:

$$TSTH = 0.385NBTH + 0.288LTTH + 0.172TTTH + 0.499CLCN$$

The results tell us:

For a change of brand equity, the travel agency needs 0.172 brand loyalty which means 0.172 of loyalty that a customer has for a travel brand.

For a change of brand equity, the travel agency needs 0.288 brand association which means 0.288 of anything in the consumer's mind when thinking about the travel brand.

For a change in brand equity, the travel agency needs 0.385 brand awareness which means 0.385 of the ability of a customer to recognize or recall a brand as a constituent element of a particular product.

For a change in brand equity, the travel agency needs 0.499 perceived quality which means 0.499 customer's perception of the quality or superiority of the product in comparison with other competitive options.

#### **4. Discussion and Conclusion**

After analyzing the data, the factors affecting customer-oriented brand equity of travel agency in Hanoi are assessed. Thereby, we can see that to improve customer-oriented brand equity of travel agencies in Hanoi, different solutions should be combined, specifically:

First: Group of solutions to strengthen and enhance the brand loyalty of travel agencies' customers. Loyalty is a factor depending heavily on feelings and experiences. Only with good experience, the customer will continue to use the product. Therefore, good customer care policies are needed. Building and supervising customer satisfaction indicators on a regular basis are necessary.

Second: Group of solutions to increase brand association of travel agencies' customers. Brand association is an important dimension of brand equity. Therefore, if the travel agency does not have effective solution to improve the brand identity, positioning and repositioning the brand in customer's minds is essential for brand association. Logos, colors, slogan, etc are the elements that customers find most easy to think about a travel brand. However, in building the brand, it is important to ensure that these associations can

create the identity which links to the customer and promote the communication; the design and spaces of publications should be unified.

Third: Group of solutions affecting the brand awareness of the customer towards travel agencies in Hanoi. The businesses should focus on building the brand identity that is different and meaningful in customer's mind. The customers can easily recognize the brand identity of a particular travel agency among other brands. Brand awareness is evaluated by the customers of travel agencies as the second important factor (the first important factor is perceived quality), thus the travel agencies should focus on investing in this group of solutions.

Fourth: Group of solutions to improve the perceived quality of the customer towards travel agencies in Hanoi. As the travel product consists of two parts which are tourism and other supporting services (food service, traveling...), product quality depends on both services and physical products. In order to improve perceived quality, it is necessary to improve the quality of customer service; improving the level and attitude of employees also contributes greatly to the quality perception of the customers. As surveyed, the factor that increases the brand equity of the travel agencies the most is perceived quality of the customer, thus the businesses should focus on improving product quality by delivering high-quality product and service packages.

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# ROLE OF R & D OPERATIONS TO IMPROVE COMPETITIVENESS FOR VIETNAM SMALL AND MEDIUM SIZED ENTERPRISES

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## ***Summary***

*Over the years, the Vietnam small and medium-sized enterprises was formed, flourished and has confirmed its important role in the economy. However, the competitiveness of Vietnam small and medium-sized enterprises is still very limited. Therefore, in the coming time, Vietnam should have utility solutions to help to improve competitiveness for these enterprises, which need special attention about the role of active research and development (R & D).*

## **Question**

*International economic integration is an objective tendency of every economy. For Vietnam, a country currently in innovation and development process, international integration is just the opportunity to expand the market, is both a major challenge for Vietnam product quality and cost. The pressure of integration, enterprises need a comprehensive plan including technological innovation, personal training, upgrading information systems and management, product quality assurance. So to see the important role of R & D operation and finding appropriate solutions to the small and medium-sized enterprises to enhance competitiveness based on R & D to meet the practical requirements.*

## **1. Characteristics of R & D activity in Vietnam small and medium-sized enterprises in Vietnam**

According to reports about technological innovation in the industrial enterprises in Vietnam (Institute for Economic Management Central, 2012), the enterprises' survey indicated that they usually conduct one or several active R & D depending on financial availability and business situation of their production as follows:

\* Research to improve existing manufacturing processes: The improvement of production processes include: improvements in technology, improvements in machinery, production methods, alternative materials, ... here are the research activity now conduct most. These can be explained by the investment in research activities to improve existing manufacturing processes which are less expensive than investing in new machinery and equipment, technological lines, while still having closed pole in improving product quality, enhancing productivity, and improving products or new products.

\* Products improved research and new products design: Type of activity rates are higher now when conducting studies followed by product innovation and design. Product enhancements conduct regularly and new products offering is an objective requirement for businesses, especially goods consumer, garments manufacturing, cosmetics, paint and

shoes businesses, etc to diversify products to meet customers' demand for the change of the external factors such as weather, environment, fashion and tastes, etc. These are the reasons which businesses often conduct regular activities.

\* To research and apply new production processes: With some enterprises, adoption research of new manufacturing process are usually done with the property that the business expansion would be rather than technological innovation. These means that new investment in the technology chain in business, to enhance the output of existing products or develop new products can be the same as category with the current product and can also be a completely different items. At the adoption of new production processes can be completely replace the equipment, machinery and technological factor, because these require businesses to have invested enormously.

\* Research and development: Research and implement the activities at the Vietnam small and medium-sized enterprises to conduct production technological innovation. These reflect the research and deployment capacity of the enterprise to be limited. In theory, research and deployment operations of businesses including practicement research are to renew the product manufacturing process; in the other hand, researchers create technologies for the production or upgrade technology and import products to suit the specific conditions. However, the reality current of businesses are be conducted research and implement the most application purposes, operational technology which would be rather than technological innovation.

\* Results of a survey in the framework of Vietnam other potential of science and technology assessment scheme in 2014 are as well as similar assessments. Those were shown when requesting enterprises list research operations and innovation implementation from 2004 to 2014 include: research and development, new products design, product availability improvement, new technological processes application and technology improvement as follows:

**Table 1: Percentage of R & D activities and technological innovations implemented by enterprises**

<b>Operation</b>	<b>The percentage of implementing enterprises (%)</b>
Current product improvements	98
Current technological process improvements	85
New products design	45
Design / application of new technological processes	30
R&D	8,5

*Source: Synthesis Report "Look at the factors affecting R & D activities of the company", NISTPASS, 2014*

## **2. The role of R & D activities in enterprises**

R & D closely connected with the creation of products and new production technologies have a direct effect on the country's growth rate and the enterprises

sustainable development. The investment for R & D is from the government, business and external financing. In developed countries, the average investment rate for R & D from the state budget compared to areas outside the state is about 1: 4, also in Vietnam, this rate is estimated at about 5: 1, which means that Vietnam R & D operation is still mainly by the state investment.

**Table 2: Funding for R & D performed in some countries**

*Unit: %*

	<b>Government</b>	<b>Industry</b>	<b>Others</b>
America	9,1	68,9	22,1
Canada	28,7	61,2	10,1
Swiss	3,5	74,1	22,4
Germany	31,3	36,7	26,7
Russia	24,5	69,9	5,6
Hungary	31,3	36,7	26,7
Japan	9,3	75	15,8
Korea	12,6	76,1	11,3
China	11,9	68,6	19,5

*Source: Synthesis Report "Look at the factors affecting R & D activities of the company", NISTPASS, 2014*

In every business, R & D is an integral part, they can be held in the form of hardware as technical department, technology department and be held in the form of "soft" R & D as with projects and research programs in business collaboration with research institutes, universities and technical, etc. Whatever be held in any way, the number of engineers working in R & D of each business now always the most elite technicians. They are not only people with high technical expertise, basic training but they were also capable of very good business and marketing when compared to research staff in research institutes and universities.

- In terms of investment structure, the allocation of the business under the technical department is staff home where most elite granted more funding than any other parts. This funding is growing over years belongs to business activity.

- R & D activities in the enterprise has four basic roles:

+ Strengthening of technology for the enterprise

+ Raising the status of the enterprise

+ Strengthening the export activities for enterprises

+ Growing and developing enterprises

In many businesses due to this particular size of business, R & D has no specialized department in charge which is often integrated into one of the business parts such as production department, sales department, etc. However, the interest in this activity has always been laid out in the business strategic development.

### **3. The content and orientation R & D activities to improve competitiveness for small and medium-sized enterprises in the context of integration**

For the process of production technological innovation, business needs can arise perform R & D to search for innovative ideas or seek solutions to solve the problems that arise when implementing innovation. Businesses can conduct R & D or make your outsourcing. Enterprises also can order agencies such as research institutes or universities to perform R & D belongs to the business needs .

Currently, many different assessments show that R & D activity in Vietnam small and medium-sized enterprises is very weak. Assessment of the results of the investigation VCCI in 2013 is that nearly half of the businesses currently have no R & D to export promotion. In addition, businesses in general and small and medium-sized enterprises in particular are passive, refuses to link or go to R & D organizations. Regional links between R & D institutions with manufacturers, and businesses in Vietnam today is very low. The link between areas is weak due to many reasons, but in which there is the most reason is no growth of the consultancy support services and technology market.

While the form of businesses counseling, supporting services thrive in developing countries, the Vietnam services today is not yet fully aware of the importance. The national legislation, statistical systems do not insist on this form. The important thing is that our country lacking of the consulting services to help enterprises to conduct technological innovation, promote the formation and development of scientific and technology market and improve the businesses competitiveness .

Technical services related to the regular production activities of the enterprise (maintenance services, maintenance and minor repairs of machinery and equipment) usually conduct. For SOEs, their technical staff are trained regularly, even all over the non-state enterprises. Moreover, the state-owned enterprises usually have a contract signed with an R & D organization to perform complex technical consultancy. The private enterprise applies only way to invite technical staff in large companies, through individual agreements in technical issues.

The role of other forms of support services in Vietnam has been overlooked as one of the factors that make it difficult for technological innovation in the small and medium-sized enterprises.

On assessing the effects of the factors limiting product innovation activities, technological processes of enterprises, is shown by the results of the investigation about techonological capacity in some industries. In the table, a scale was agreed as follows: 1: does not matter; 2: very little significance; 3: mean; 4: very significant; 5: the nature of the decision. The scores in the table is the average score on the results of businesses surveys in each sector in 2007.

**Table 3: To assess the impact of the factors limiting product innovation activities, technological processes of enterprises**

Affecting factors	Affecting level				
	Electronics, information, telecommunications	Seafood processing	Coffee processing	Construction	Agricultural engineering
<b>A. Factors belongs to the business</b>					
Lack of professional qualified human resources	2,7	3,5	2,3	2,4	2,5
Lack of information technology	2,7	3,6	3,3	2,4	3,5
Lack of outside technical support services	2,3	3,1	3,1	2,6	3,5
Lack of opportunities for cooperation with the outside scientific and technological organizations	2,6	3,1	3,5	2,5	3,2
Difficult to monitor the cost of innovation	1,8	1,8	1,9	2,1	2,2
Conservative and fear innovation thinking of business	2,1	1,6	1,9	1,8	1,2
<b>B. Other factors</b>					
Risk	1,9	2,0	2,3	2,5	2,3

Affecting factors	Affecting level				
	Electronics, information, telecommunications	Seafood processing	Coffee processing	Construction	Agricultural engineering
aversion, and waste of renovation money					
Lack of appropriate funding	3,1	3,7	4,1	3,5	4,9
The payback period for renewal is too long	3,0	3,1	3,1	3,1	3,7
Lack of the opportunity to interact with new technology	2,2	3,3	3,4	2,6	3,4
Fear of innovation is easy to imitate	2,4	-	-	1,8	2,3
Legal environment is not favorable	3,2	2,9	3,6	2,6	2,6
Tax regime does not encourage innovation	4,0	3,4	4,0	2,7	3,4
exchange goods enjoying psychology of the customer	3,1	1,1	-	2,4	3,1

Source : Report of the survey results about the level and technological capabilities in some economic and technical sectors of Vietnam ( NISTPASS.2014)

It can be seen clearly in the context of international economic integration today, the Vietnam small and medium-sized enterprises is still difficult in many aspects, especially in technology, project management, human resources, investment capital technological innovation, information technology, marketing and support services.

From the study of international experience shows that even if held under what form of R & D in every business whose main task is working to create new products, the product is competitive to meet market demand and implement the business development strategy. However, it is precisely because of the imposition of duties is quite narrow that many R & D enterprises, particularly in the case of businesses with medium-sized and small have failed to fulfill the functions required of a R & D enterprises as such, leading to restrict, confine within the framework of traditional products, waste resources and other business resources.

Worldwide, R & D functions in the enterprise is not only limited to the launch of new products. A professional R & D department in an enterprise often extended and one or more of the following activities:

\* Product R & D: this is R & D functions purely in terms of the product to give birth to the new product design, materials, properties and uses. For example, studies about fish sauce made from salmon, the seasoning made from seaweed or herbal tea bottle, etc. Enterprises to implement the R & D typically focuses more on product formulation, the section, texture, color, flavor, style. In addition, R & D products also include research to improve and enhance the products available quality.

Packaging R & D: in addition to R & D of new products, for some enterprises, especially enterprises in the field of manufacturing and trading, R & D also has the function of research and application of a new type of packaging material. Such a business in the industry launched the bottled green tea products, is filling at high temperature, required to have a plastic bottle made of heat-resistant material without being deformed, non-toxic. R & D department of the enterprise researches to produce a material suitable for the most appropriate cost for this new product.

The study of packaging products plays a huge role in the success of the consumer products. Actually, sometimes just changing the packaging material, while keeping component materials, quality and quantity of products inside, the consumption of the product would have increased several times. Packaging for products instant noodles in Vietnam today is an example in this case. When switching from paper packaging to plastic packaging, the products of the enterprise instant noodles Vietnam's capital budget position, was able to fairly compete with foreign products, though the quality inside have not changed much.

\* Technology R & D: research activities, seeking production technology, optimization process to get their product quality and cost optimization is one of the important functions of R & D. For example, natural fermentation technology differs by acid hydrolysis technology in the production of soy sauce.

\* Process R & D: The nature of this function is to study, identify the production, processing, assembly, operation, coordination. Its performance give high practical effect to

the enterprise. Typically for this activity is to improve the research and development of production processes (for products), processes serving (for services), operating procedures (for machinery). This activity can be considered R & D "software" of the product, other than the "hardware" is material, formulation, packaging. In fact, the work of R & D "software" is often overlooked or ignored, while efficiently bringing even higher than the "hardware". In particular, for the type of service, research and development processes meant to serve a very important, if not the decision in the success or failure of this kind of service.

In addition, to implement its mandate, R & D in the business can not help but focus on a process of scientific truth. It's reasonable for R & D, are usually placed for a name that so obviously "R & D process." This process defines the sequence of steps in R & D, described the collaboration between the R & D with other business parts such as marketing, production, quality control, finance from the receipt of the request, research, analyzes from pilot production to mass production.

Thus, R & D activities in the business not only the limits of pure and rigid on target launched new products or services. With this understanding, the function of R & D department will be expanded, the expansion of the scope of R & D for business take advantage of resources and cost savings.

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# IDENTIFYING BENCHMARKING FOR LISTED ENTERPRISES IN VIETNAM: A CASE STUDY OF LISTED CONSTRUCTION ENTERPRISES IN VIETNAM

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## **Abstract**

*For every enterprise, business activities always have hidden opportunities and risks. One of the biggest risks is bankruptcy. Therefore, how to identify the risk of bankruptcy and the benchmarking for bankruptcy is an important issue that capture the interest of enterprises. In this study, besides the determination of the Z-score, Z-score for bankruptcy risk measurement was determined in accordance with Vietnam's characteristic market conditions. The score threshold was determined from the Z'' model using US market data. This model has been validated in accordance with US market conditions. Through the assessment of corporate bonds, adjusted for emerging market conditions, national risk premiums in Vietnam, the Z-score threshold was determined to assess and to give warnings against the risk of bankruptcy of listed construction enterprises that were researched.*

**Keywords:** *Bankruptcy, Z-Score, Benchmarking for bankruptcy.*

## **1. Introduction**

The global economy in general and Vietnam's economy in particular have been moving in the cycle of growth - recession - crisis - recovery. Most recently, both the world and Vietnam suffered from a severe economic crisis starting in 2008. Starting with the US, the economic crisis rapidly spread to the rest of the world, affecting the global economy. According to the General Statistics Office, only in the two years 2011 - 2012, Vietnam had more than 100,000 bankrupt or downgraded businesses<sup>1</sup>. This led to nearly one million jobless claims. Only in the first three months of 2013, the Ministry of Planning and Investment announced that 15,200 businesses went bankrupt or ceased operations, up by 2,200 compared with the statistics of the same period last year<sup>2</sup>. It could be seen that this figure was just the tip of the iceberg with the sinking part was hundreds of thousands of business that "seemed to be thriving but were actual dead", all waiting for bankruptcy. The cycle of corporate bankruptcy would cripple more businesses. Among them, joint-stock

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<sup>1</sup> National business registration portal [dangkykinhdoanh.gov.vn](http://dangkykinhdoanh.gov.vn)

<sup>2</sup> National business registration portal [dangkykinhdoanh.gov.vn](http://dangkykinhdoanh.gov.vn)

enterprises and foreign invested enterprises that filed for bankruptcy occupied the most. Private enterprises had a greater number of bankruptcies than that of newly established and re-operating enterprises.

The risk of bankruptcy was increasing. Especially in the period 2011 - 2012, housing crisis occurred in Vietnam, the real estate market overheating triggered the burst of price bubbles. Listed construction companies in Vietnam had to experience the general crisis of the world and Vietnam.

In the world, there have been a numerous number of studies on benchmarking for bankruptcy, such as Altman (1968), Zhou & Zhao (2006), Porporato & Sandin (2007), Cerovac & Ivicic (2009), Ann-Katrin Napp (2011), and especially Altman's (2000, 2005) study of corporate credit rankings in the US market, and adjustments for other markets, including emerging markets. These studies, most of which used data sets on the US stock market and business that were active in the US market. Thus, these models or methods to measure bankruptcy thresholds could only be applied for Vietnamese enterprises once they were studied and adjusted, especially the determinants of the benchmarking for bankruptcy, which had to have the characteristics of Vietnam's economy. Therefore, the determination of the bankruptcy threshold for Vietnam is an indispensable requirement for measuring and warning the risk of bankruptcy for Vietnamese enterprises.

## **2. Literature review**

### **2.1. Business bankruptcy**

Bankruptcy was a recent phrase, especially in the period 2008 - 2012. In the research "Bankruptcy of listed enterprises and other issues", Le Vu Nam and Le Ha Diem Chau argued that bankruptcy was an inevitable consequence of an inefficient business for a long period of time. It was a natural process of screening in the market economy, thereby eliminating ineffective businesses, contributing to the health of the business environment, and restructuring the economy. Bankruptcy of businesses listed on the stock market, in many respects, was not always negative. On the market side, bankruptcy of a listed enterprise is to remove a poor quality stock, helping to protect investors and make the market operate more transparently and legally. On the side of investors, bankruptcy of listed businesses was an alarm to make them more careful in choosing investment stocks, restricting the habit of the mass investment due to crowd effect. The management agency would also draw some lessons and experience in monitoring, inspecting and managing listed enterprises to timely detect weak businesses that violated the disclosure of information, and to take strong measures to deter deteriorations. According to Huyen Chi (2012), in the market economy, business dissolution, bankruptcy, or disruption was normal, but when businesses fell into this situation, the impact it had on the society was not insignificant.

It was important to identify the risk of a financial institution going bankrupt. Many companies around the world have researched and issued warnings against bankruptcy. The Z-score model, created in 1968 by Prof. Edward I. Altman and other models based on that have attracted the attention of many researchers. Altman (1968), the Z model was a synthetic financial risk model that identified corporate financial risks on the basis of group

breakdown into "default" and "non-default". Developed on the basis of the Z model, many studies were developed on the basis of the Z model and empirical research because of the superiority of this model. This model allowed for easy calculation, comparison and identification of financial risks (Porporato and Sandin (2007), Ann-Katin Napp (2011), ...)

Despite numerous studies showing effectiveness in a variety of economies, overtime, Antman's (1968) model had the disadvantage of being based only on the book value that did not accurately reflect the real value businesses. This resulted in the failure of the model to keep up with the constant change of business as well as the economic environment.

## ***2.2. Business bankruptcy measurement model***

Developed on the basis of the Z model, many models have been used to predict bankruptcy, especially when considering additional factors affecting the forecasting. Gaunt and Gray (2010) studied the comparison of five models commonly used for bankruptcy prediction, using different independent variables such as accounting information, market data, enterprise data, .... The study also showed that some key accounting information such as profits, liquidity and financial leverage directly affect the prediction results. As a result, some financial indicators such as operating profit (EBIT) / total assets declining, profitability decreasing, low working capital / asset ratio or debt / equity structure being too high. In addition, a good bankruptcy prediction had to include sufficient accounting information, market data and corporate condition. However, the level of information transparency or market information effect in each market was different. Most of the models were tested in developed financial markets. Thus, some studies have focused on emerging market businesses or the use of Fuzzy logic to predict bankruptcies from one to three years in advance. Tomasz Korol and Adrian Korodl (2011) used financial statements of 132 joint-stock companies, of which 25 were bankrupt and 107 were not bankrupt. The results showed the effectiveness of the open logic model in the bankruptcy prediction. In the study by Pompe and Bilderbeek (2005), most financial indicators of the enterprise could predict the probability of bankruptcy. As such, it could be seen that besides the selection criteria, the more reliable was the source of information, the more accurate were the forecast results (Phillippe du Jardin, 2012).

Over the past four decades, the authors have focused on two main objectives to predict business bankruptcy. First, evaluate the conditions to increase the accuracy of the model. Second, focus on the explanatory variables that could be used to design the model. In addition, variable selection methods for modeling or verification techniques were also mentioned but they were not common. Philippe du Jardin (2012) proposed a research paper to assess the accuracy of the bankruptcy model associated with different classification techniques and variable selection methods. The study emphasized that it was impossible to design a search strategy without taking into account the characteristics of the classification technique as well as the suitability between *the classification technique* and *the variable selection method*. As a result, 70% of the variables affecting the results of the model needed to be selected, depending on the frequency of selection, variable names, etc. There were several financial variables given to determine the bankruptcy threshold. Depending

on the application conditions for each enterprise, the model of enterprise bankruptcy would be based on the appropriate financial variables.

*Thus, from the time that the Z model was built by Altman (1968), other studies have focused on development but mainly on the basis of the Z model. These studies also attempted to etch the disadvantage of this model. However, different countries had different market conditions, financial system, and specificity of the business sectors. In addition, the elements of national competitive advantage and macro conditions of each country were different. Therefore, when applying the Z-score model, it was necessary to pay attention to the national characteristics of each country and adjust the benchmarking for bankruptcy according to these specific factors.*

### **2.3. Research methods**

This research was based on the Z-score, which had been audited for listed construction companies in Vietnam, thus adjusting the sector's characteristics and featured advantages in accordance with each country.

**About the sample:** 30 listed construction companies in Vietnam, period of 2012-2015.

Enterprises would be divided into 2 groups: (i) group of companies with liquidity difficulties ( $Z < ???$ ); (ii) group of companies with low risk of bankruptcy ( $Z > ???$ ).

**About data collection:** Using the 2012 data set of 30 listed construction companies. Data included financial information and related information. In addition, national competitive price data and index adjustment information were collected during the study period.

**About the Z model according to Vickers** was suitable for emerging market conditions and overcame some disadvantages of the adjusted Z'' model. Thus, the  $Z_{jworks}$  model studied jointly for the listed construction companies are:

$$Z_{jworks} = 1,03 X_1 + 3,07 X_2 + 0,66 X_3 + 0,4 X_4$$

Of which: **X1:** Net working capital / Total assets

**X2:** Before-tax profit and interest / Total assets

**X3:** Before-tax profit / Debt

**X4:** Revenue / Total assets

With the data set of 30 listed construction stock companies from 2010 to 2015, the team would measure the Z-score according to each of the above models and decided on the most suitable model, which was the Vickers' Z model.

### **Some factors to adjust when building bankruptcy thresholds:**

Altman (2005) built a credit rating system for emerging market businesses. Accordingly, to adjust the industry, the national comparative advantage was very important. Accordingly, different countries had different adjustment coefficients and bankruptcy thresholds, depending on the market conditions, the financial system, the national position and the sector in which the firm was operating. Based on these factors, in

the Vietnamese market, to determine the appropriate threshold, it was necessary to adjust some factors as follows:

- Credit rating of US debt
- Adjustment of credit ratings for emerging markets
- Adjustment of national comparative advantage: Adjustment for Vietnam, sectoral adjustment. In this study, the construction industry was selected for adjustment.

### **The adjusted model:**

The adjusted model was the original  $Z_{jacworks}$  model plus/minus the specified correction factors.

## **3. Determining benchmarking for bankruptcy**

### **3.1. Overview of listed construction companies in Vietnam**

During the research period, the listed construction company has 30 companies in the period 2010 - 2015. Some important financial information directly affecting the threshold of bankruptcy of listed construction companies are as follows:

**Table 1. Some important financial indicators**

<b>Quota</b>	<b>Unit</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Short-term payment ability	Frequency	1,32	1,28	1,31	1,38	1,42	1,71
Quick payment ability	Frequency	0,76	0,76	0,81	0,87	0,28	0,15
Immediate payment ability	Frequency	0,15	0,11	0,15	0,18	0,91	0,11
Kỳ thu tiền bình quân	Day	187	373	654	94,26	83,08	89
Days in inventory	Day	101,4	48,35	74,23	66,48	50,71	114,50
Hệ số sinh lời TSCĐ	Frequency	0,41	0,33	0,22	0,11	0,002	0,12
Return on assets (%)	%	4,45	3,61	2,41	1,76	1,2	2,91
Hệ số sinh lời VCSH	%	13,8	6,66	-2,2	1,76	1,2	2,64

(Source: *Vietstock.com.vn* and author's calculations)

From the above data, it can be seen that the short-term solvency of these enterprises was greater than 1, ensuring basic short-term payment requirements.

In the period of 2010 - 2015, the collection period lasted from 6 to 8 months and the number of days in inventory was about 3 to 5 months. However in 2011 and 2012, along with the severe downturn of the real estate market, the term of payment was from 1 to 2 years. However, from 2013 to 2015, this coefficient was improved, making the collection period only around 3 months. The number of days in inventory increased or decreased due to contraction, suspension of production - business or expansion of the scale according to characteristics of economic development each year. However, the profitability of fixed assets was very low and tended to decrease. This reflected the characteristics of Vietnamese construction firms that did not focus on fixed asset investment, but mainly

used rented construction machines according to the characteristics of each project instead. In addition, the return on total assets has tended to decrease over the years. The rate of equity ownership fluctuated sharply, especially in 2012. Profitability recovered, but was still at low level. The number of enterprises suffering losses also increased rapidly compared to that of previous years, all of which are shown in the table below:

**Table 2. Number of listed construction companies in Vietnam with business results of losses from 2010 to 2015**

Time	Enterprises with PAT > 0		Enterprises with PAT < 0	
	Quantity	Ratio	Quantity	Ratio
Year 2010	30	100%	0	0%
Year 2011	30	100%	0	0%
Year 2012	27	90%	3	10%
Year 2013	27	90%	3	10%
Year 2014	26	86,67%	4	13,33%
Year 2015	12	92,31%	1	7,69%

(Source: Vietstock.com.vn and author's calculations)

As a result, using the analysis of some basic financial indicators, the research team found that the financial status of listed construction companies in the two years 2011 - 2012 significantly decreased compared to that in the periods of 2010 - 2011 and 2014 - 2015, which inevitably increased the risk of bankruptcy of this business group.

### **3.2. Determining the benchmarking for bankruptcy for listed construction companies in Vietnam**

Using the 2012 data set of 30 companies, with the help of SPSS software, the author calculated the Z-score of each business. Based on the 0.862 difference in liquidity ( $Z < 0.862$ ) and group 2 with low risk of bankruptcy ( $Z > 0.862$ ).

**Table 3. Descriptive Value of the Z-score from 2010 to 2015 of two groups of listed construction companies**

Report on Z-score						
Z-score	Mean	Number of observations	Variance	Lowest value	Highest value	% in total observations
Group 1	0,530	12	0,247	0,073	1,21	40%
Group 2	0,476	18	0,241	0,029	1,25	60%
Total	0,503	30	0,243	0,021	1,25	100.0%

(Source: author's calculations)

According to the results of the analysis of the data of listed companies in the period of 2010 - 2015

**Table 4. The average value of the index of listed companies from 2010 to 2015 - apply the  $Z_{jacworks}$  model**

Time	Enterprises with $Z > 0,862$		Enterprises with $Z < 0,862$		Average value of Z
	Quantity	Ratio	Quantity	Ratio	
Year 2010	3	10,00%	27	90,00%	0,548
Year 2011	2	6,67%	28	93,33%	0,513
Year 2012	3	10,00%	27	90,00%	0,463
Year 2013	2	10,00%	27	90,00%	0,430
Year 2014	1	3,33%	29	96,67%	0,444
Year 2015	1	7,69%	13	92,31%	0,522

(Source: author's calculations)

According to this result, the group of enterprises in danger of bankruptcy was up to over 50%, so these enterprises were facing difficulties in short-term payment.

According to a study by Altman (2000) with the Zeta model, for emerging markets, it was necessary to adapt the model to suit market conditions, including Vietnam. Specific model adjustments are as follows:

*First*, calculate Z for the Vietnamese market.

**Table 5. Value of Z-score over the years of listed construction companies from 2010 to 2015 - apply the  $Z_{jacworks}$  model**

Stock code	2010	2011	2012	2013	2014	2015
<b>BCE</b>	1.1459	0.9682	0.9572	0.8988	0.5399	0.5359
<b>C47</b>	0.5794	0.4524	0.2852	0.4624	0.2927	0.4144
<b>CDC</b>	0.5716	0.5355	0.4355	0.4241	0.5576	0.6439
<b>CIG</b>	0.7191	0.7398	0.6517	0.7057	0.4319	0.2021
<b>CII</b>	0.2547	0.1990	0.0295	(0.0300)	0.2549	0.1416
<b>CLG</b>	0.1755	0.3616	0.3591	0.2603	(0.0419)	0.2229
<b>CTD</b>	1.2130	1.2415	1.0346	1.0926	1.0655	1.0701
<b>D2D</b>	0.3799	0.2414	0.6557	0.5388	0.6015	0.4835
<b>FCN</b>	0.6105	0.6397	0.5396	0.6034	0.4948	0.5776
<b>HAS</b>	0.6748	0.6740	0.9138	0.7154	0.6331	0.7222
<b>HBC</b>	0.5036	0.4388	0.4252	0.3626	0.3483	0.3368
<b>HTI</b>	0.2379	0.3110	0.1740	0.0716	0.1004	0.1790
<b>HU1</b>	0.5330	0.5754	0.4072	0.4320	0.6154	0.6292
<b>HU3</b>	0.4467	0.7764	0.4753	0.5342	0.7668	0.5056
<b>L10</b>	0.3444	0.4154	0.4724	0.5781	0.7185	0.5058
<b>LCG</b>	0.6731	0.4968	0.2692	(0.0228)	0.4850	0.3803

Stock code	2010	2011	2012	2013	2014	2015
<b>LDG</b>	0.3983	0.3317	0.5440	0.4792	0.4641	0.7495
<b>MCG</b>	0.5511	0.4469	0.3981	0.1910	0.3033	0.3781
<b>MDG</b>	0.5062	0.2188	0.2029	0.2017	(0.0310)	0.2197
<b>PTC</b>	0.4678	0.4654	0.1632	0.4577	0.6461	0.4400
<b>PXI</b>	0.8817	0.5249	0.2772	0.3008	0.3159	0.4281
<b>PXS</b>	0.2203	0.2989	0.4798	0.2794	0.5427	0.3642
<b>PXT</b>	0.8181	0.6640	0.4819	0.3086	(0.3912)	0.3763
<b>REE</b>	0.4220	0.6371	0.5916	0.7127	0.6856	0.6098
<b>SC5</b>	0.5734	0.4824	0.5439	0.3260	0.4185	0.4754
<b>SRF</b>	0.8349	0.7562	0.7647	0.7888	0.6917	0.7673
<b>THG</b>	0.7040	0.6337	0.7305	0.6898	0.7188	0.7133
<b>UDC</b>	0.2186	0.1786	0.1479	0.2470	0.2661	0.1872
<b>VNE</b>	0.4839	0.3894	0.2812	0.1360	0.5525	0.3686
<b>VSI</b>	0.3005	0.2940	0.1884	0.1530	0.2679	0.2408

(Source: author's calculations)

Second, rate the credit based on the level of trust of the national convertible bond.

**Table 6. Credit rating of firms According to US market bond credit and emerging market convergence scores**

	Z' score	Ratings	Z' score	Ratings	
Healthy zone	>8,15	AAA	5,65 - 5,85	BBB-	Grey area
	7,6 - 8,15	AA+	5,25 - 5,65	BB+	
	7,3 - 7,6	AA	4,95 - 5,25	BB	
	7 - 7,3	AA-	4,75 - 4,95	BB-	
	6,85 - 7	A+	4,5 - 4,75	B+	
	6,65 - 6,85	A	4,15 - 4,5	B	Danger zone
	6,4 - 6,65	A-	3,75 - 4,15	B-	
	6,25 - 6,4	BBB+	3,2 - 3,75	CCC+	
	5,85 - 6,25	BBB	2,5 - 3,2	CCC	
			1,75 - 2,5	CCC-	
		<1,75	D		

(Source: Altman (2005))

For different countries and different market conditions, factors affecting the bankruptcy of enterprises were different. Therefore, emerging markets, especially for developing countries, had the featured characteristics. For example, the retained earnings were determined by the retained earnings in the past plus the value of stocks issued or provisioned (measured in surplus or deficit) and net profit for the current year. According to the study by Altman (2005) and Zeta (1977), the Z model for emerging market access (EMS) is as follows:

$$\text{EM Score} = 66,56 X_1 + 3,26 X_2 + 6,72 X_3 + 1,05 X_4 + 3,25$$

(X1: Working capital / Total assets, X2: Retained earnings / Total assets, X3: Operating profit / Total assets, X4: Book value of capital / Total liabilities)

The coefficient in the 3.25 model was determined by the mean of the Z'' score for US business bankruptcies, so when adjusting the coefficients for Z', it was necessary to adjust the coefficient 3.25.

Third, adjusting the level of credit for national convertible bonds for emerging markets

**Table 7. Credit rating of firms Adjust the adjustment factor of model Z''**

	Z'' score	Ratings	Z'' score	Ratings	
Healthy zone	>4,9	AAA	2,4 - 2,6	BBB-	Grey area
	4,4 - 4,9	AA+	2 - 2,4	BB+	
	4,1 - 4,4	AA	1,7 - 2	BB	
	3,8 - 4,1	AA-	1,5 - 1,7	BB-	
	3,6 - 3,8	A+	1,25 - 1,5	B+	
	3,4 - 3,6	A	0,9 - 1,25	B	
	3,2 - 3,4	A-	0,5 - 0,9	B-	Danger zone
	3,0 - 3,2	BBB+	-0,05 - 0,5	CCC+	
	2,6 - 3,0	BBB	-0,75 - -0,05	CCC	
			-1,5 - -0,75	CCC-	
		<-1,5	D		

(Source: Altman (2005))

Fourth, adjusting the level of trust by industry and competitive advantage for Vietnamese market.

The national risk premium reflected the comparative advantage of each country. As assessed by Aswath Damodaran's credit rating agency <http://www.stern.nyu.edu/~adamodar/pc/datasets/ctryprem.xls> in January 2017, the national premium of Vietnam was 2,74%. Thus, the level of ratings after adjustment of the national premium of Vietnam is as follows:

**Table 8. Credit rating of Vietnamese enterprises adjusted for the model Z''**

	Z'' score	Ratings	Z'' score	Ratings		
Healthy zone	>4,9	AAA	2,4 - 2,6	BBB-	Grey area	
	4,3 - 4,9	AA+	2,0 - 2,4	BB+		
	4,0 - 4,3	AA	1,7 - 2	BB		
	3,7 - 4,0	AA-	1,5 - 1,7	BB-		
	3,6 - 3,7	A+	1,2 - 1,5	B+		
	3,4 - 3,5	A	0,9 - 1,25	B		
	3,1 - 3,3	A-	0,5 - 0,9	B-		
	3,0 - 3,1	BBB+	-0,1 - 0,5	CCC+		Danger zone
	2,6 - 2,9	BBB	-0,8 - -0,05	CCC		
			-1,5 - -0,75	CCC-		
		<-1,5	D			

(Source: Altman (2005))

Fifth, after adjusting the credit rating for Vietnamese market, plus government bond yields, compare with market yields. Then, evaluate the credit rating and the Z'' score in line with Vietnamese market. The results of the Z-score are as follows:

**Table 9. Credit rating of Vietnamese enterprises**

Z score	Ratings
> 2,8	AAA
2,0 - 2,8	AA
1,3 - 2,0	A
0,5 - 1,3	BBB
-0,4 - 0,5	BB
(-1,4) - (-0,4)	B
(-2,8) - (-1,4)	CCC
(-3,6) - (-2,8)	CC
< -3,6	C

(Source: Altman (2010))

#### 4. Discussion

For each country, operational economy had many national characteristics. Therefore, it was necessary to consider the factors of national comparative advantage to determine the benchmarking for bankruptcy or to identify enterprises that were in the bankruptcy area in accordance with that particular characteristics. From the threshold of bankruptcy according to the adjusted Z-score for Vietnam and the results of the Z-score of listed construction companies, 30 enterprises had the level of credit ratings as follows:

Contecon Construction (CTD) was the only company rated AAA with Z score of 10,701. The rest were mainly BBB and BB. The number of companies in the BB and BBB group was 29, and no company was ranked lower than BB.

Companies rated BBB and BB are as follows:

**Table 10. Credit rating of 29 listed construction companies**

	<b>Stock code</b>	<b>Z (2015)</b>	<b>Ratings</b>
1	BCE	0.5359	BBB
2	CDC	0.6439	BBB
3	FCN	0.5776	BBB
4	HAS	0.7222	BBB
5	HU1	0.6292	BBB
6	HU3	0.5056	BBB
7	L10	0.5058	BBB
8	LDG	0.7495	BBB
9	REE	0.6098	BBB
10	SRF	0.7673	BBB
11	THG	0.7133	BBB
12	VNE	0.3686	BBB
13	C47	0.4144	BB
14	CIG	0.2021	BB
15	CII	0.1416	BB
16	CLG	0.2229	BB
17	D2D	0.4835	BB
18	HBC	0.3368	BB
19	HTI	0.1790	BB
20	LCG	0.3803	BB
21	MCG	0.3781	BB
22	MDG	0.2197	BB
23	PTC	0.4400	BB
24	PXI	0.4281	BB
25	PXS	0.3642	BB
26	PXT	0.3763	BB
27	SC5	0.4754	BB
28	UDC	0.1872	BB
29	VSI	0.2408	BB

*(Source: author's calculations)*

According to the results of Z scores and the ratings of 30 listed construction companies, apart from Conteccons Construction Joint Stock Co with AAA rating, the remaining BB and BBB companies were in the gray area. Therefore, it could be seen that most of listed construction companies in Vietnam (in research sample) were in danger of bankruptcy. Short-term liquidity was affected. This result was similar to the results of the financial analysis of solvency.

## 5. Conclusion

Bankruptcy was the state of enterprises falling into difficulties or suffering losses in business activities after employing necessary financial measures but still losing their ability to pay due debts. There were many reasons for business bankruptcy, including both subjective and objective ones. One reason was the fluctuation of the economy.

There have been many studies in the world to determine the benchmarking for bankruptcy. However, they focused mainly on the credit rating model, including the Z model (Altman (1968)). What they forgot was that this model was only tested with the data sets of businesses in the US market. Therefore, in order to apply this model to other economies, certain adjustments needed to be made. In the Altman's (2000) study on emerging markets, the Z'' model and the Zeta model was approached. The level of credit ratings was shown to depend on the financial system, the level of risk, as well as characteristic credit risk of emerging markets, thereby adjusting credit rating, approaching bond rating and associated Z-score. The underlying foundation of the emerging market credit rating model (EMS) was the adjustment of Z'' (Altman (1993)), resulting in emerging market rating and bond rating. Three main factors affecting the outcome of the model were (1) the depreciation of the currency, (2) sectoral alignment, (3) comparative advantage. Bond rating was essential to referencing the model. However, no organization in Vietnam announced the rating of corporate bonds. In addition, the bond market in Vietnam had many difficulties in the process of formation and development. Thus, US bond rating was used to adjust for emerging markets and Vietnamese market. In addition, the comparative advantage of the country was also a problem. In this study the author used the national risk premium of Aswath Damodaran.

In addition to the aforementioned problems, if the research model of the model were extended, the result would be better when calculating the Z-score. This was the biggest limitation of the model and was suggestive for other research in the future.

However, the results of the study insisted that most of the firms in the sample showed the expected results, which were consistent with the current financial situation based on liquidity analysis in accordance with the financial indicators of these enterprises. The important thing was that most businesses were in the gray area and there were some clear manifestations of financial difficulties.

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# EFFECTS OF FINANCIAL LEVERAGE ON PERFORMANCE OF LISTED FIRMS IN HO CHI MINH STOCK EXCHANGE MARKET

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## Abstract

*According to Thomas (2013), the success of a business is significantly determined by the way capital is mobilized and utilised. The amount of financial leverage may change across firms and/or time depending on the business culture, administration method, or the industry in which the business operates. In principle, there is no theoretically optimal level for the proportion of debt and equity (Modigliani and Miller, 1958). This research carried out with a panel data of 85 listed firms in HSX market during the period from 2006 to 2017 (financial sector will be excluded) and reveals that short term leverage is significantly positive correlated with business financial performance.*

**Keywords:** Capital structure, HSX, financial performance, financial efficiency.

## 1. Introduction

According to Thomas (2013), the success of a business is determined by the way capital is mobilized and utilised. The capital structure is defined as the ratio of long-term debt to equity, both of which are used by a business to pay for its assets (Swanson *et al.*, 2003). This proportion may change across firms and/or time depending on the business culture, administration method, or the industry in which the business operates. In principle, there is no theoretically optimal level for the proportion of debt and equity (Modigliani and Miller, 1958). Modigliani and Miller (1958) could be typically considered as the pioneers in concluding and modelling the relationship between capital structure and firm performance by proposing capital structure irrelevant theory. More recently, Shyam-Sunder and Myers (1999) proposed “pecking order theory” in which they advised that in terms of raising capital, companies should first use internal accruals, followed by debt, and then equity. Kajanathan and Nimalthasan (2013) argued that the impacts of capital structure on business performance and growth must be concluded based on specific characteristics of the firms, industries, or the whole macro economy of countries. It can be seen that the relationship between capital structure and firm performance has been argued widely in the recent years when it comes to financial management issues (Kajanathan and Nimalthasan, 2013).

From these points of view, this research aims to examine the impacts of capital structure (represented by the financial leverage) on firm performance of Vietnamese listed firms on HSX. The impacts will be moderated based on industrial characteristics to bring the most precise recommendation for Vietnamese listed firms.

## **2. Variables measurement**

### **2.1. Firm performance measurement**

In explanations of firm performance, there are many financial indicators which can be used as measures of firm financial performance such as returns on assets, returns on investment, returns on equity, gross and net profit margin, earnings per share, or tobin's q (Soumadi and Hayajneh, 2012; Pratheepkanth, 2011; Kajanathan and Nimalthasan, 2013; and Tan, 2012). In specific, in this study, Returns on Equity (ROE) will be used as dependent variables represents the business financial performance. ROE is one of the most important financial indicator to measure the companies' profitability. It represents the ability of companies to generate profit with the money invested by shareholders. ROE is calculated by dividing the net profit after tax to the book value of shareholders' equity (Soumadi and Hayajneh, 2012; Onalapo and Kajola, 2010; Krishnan and Moyer, 1997).

### **2.2. Capital structure measurement**

This paper will name the independent variables as the market debt ratio as measured by interest-bearing borrowings over the sum of interest-bearing debts and market value of outstanding common shares. In which, short-term and long-term market debt will be used to better characterise the role of each type of debts.

The market debt ratio (MDR) is conducted based on the ideas of Flannery and Rangan (2005) to consider the market capital capacity of the firm. In which,  $SMDR_{i,t}$  is defined as short-term interest-bearing debt of firm  $i$  at time  $t$ ;  $LMDR_{i,t}$  is long-term interest-bearing debt of firm  $i$  at time  $t$ ;  $D_{i,t}$  is the total interest-bearing debt, while  $S_{i,t}$  indicates the number of common shares outstanding of firm  $i$ .  $P_{i,t}$  denotes the price per share of stock  $i$  at time  $t$ .

### **2.3. Control variables**

Sales growth (SG), measured as rate of change in sales between the observation year and the preceding years, can have a positive effect on performance and growth as companies are able to generate higher profits. This variable has been used in testing the effect of capital structure on financial efficiency by Margaritis and Psillaki (2010); and Zeitun and Tian (2007).

Ramaswamy (2001); Frank and Goyal (2003); Jermias (2008), Ebaid (2009) suggest that the firms size may influence its performance; larger firm may have more capacity and capabilities. Therefore, this study controls the differences in firms operating environment by including the size variable in the model. Size is measured by the log of total assets of the firm (TA), as illustrated in the equation below, and included in the model to control for effects of firm size on dependent variable.

This research further includes liquidity (LQ), measured in terms of current assets ratio, as another control variable since it helps control for industry-related, firm-specific and business cycle factors.

### **2.4. Empirical research model**

The regression analysis focuses on the coefficient for short-term and long-term debt ratio, ( $\beta_1$  and  $\beta_2$ ). The control variables for profitability motivated by prior literature,

including the firm age, liquidity, and firm size (e.g., Coad *et al.*, 2016; Frank and Goyal, 2003; Jermias, 2008; Ebaid, 2009). Therefore, based on the relevance and reliability of such theories and approaches, the empirical model for this research will be developed and tested through panel regression model. The research's empirical model is illustrated below:

$$ROE_{it} = \beta_1 LnSTD_{it} + \beta_2 LnLTD_{it} + \beta_3 LnSZ_{it} + \beta_4 SG_{it} + \beta_5 LQ_{it} + \mu_{it}$$

The project will attempt to test the hypotheses below:

H<sub>0</sub>: Financial leverage has no impact on firm financial performance

H<sub>1</sub>: Financial leverage has positive impact on firm financial performance

In order to confirm the reliability of the quantitative model above, a number of econometric tests will be carried out as mentioned in the next part. Firstly, even though pooled ordinary least square (Pooled OLS) model has been criticised in this study, the author will still use Breusch and Pagan Lagrangian multiplier test to make sure that the Pooled OLS is not appropriate for this research. Secondly, Hausman test will also be used to figure out the appropriateness between fixed-effects and random-effects model. Finally, the autocorrelation and heteroskedasticity will be tested. Details are given below.

### 3. Research model analysis

#### 3.1. Unit Root Test (*Harris-Tzavalis test*)

The Harris-Tzavalis approach for unit root test has been applied across all variables to ensure the stationarity of the panel data. The results are showed in the tables below.

**Table 01: Summary of Harris-Tzavalis unit-root test**

Variables	Harris-Tzavalis Statistic	p-value
ROE	0.1567	0.0000
LnSTD	0.6963	0.0395
LnLTD	0.4779	0.0000
LnSZ	0.6852	0.0216
LQ	0.2012	0.0000
SG	-0.1014	0.0000

As can be seen from the table above, all the null hypotheses are rejected at the 5% significance level for all the unit root tests. Therefore, it is evident that the panel data contains no unit root and stationary.

#### 3.2. Breusch and Pagan Lagrangian multiplier

Breusch and Pagan Lagrangian multiplier has been proposed by Breusch and Pagan (1980) which is known as a typical test to determine between traditional pooled OLS and random-effect approach. The result is below.

**Table 07: Breusch and Pagan Lagrangian multiplier test for random effects**

$$ROE[\text{firm1},t] = Xb + u[\text{firm1}] + e[\text{firm1},t]$$

Estimated results:

	Var	sd = sqrt(Var)
ROE	314.6469	17.73829
e	235.1386	15.33423
u	48.25641	6.946683

Test:  $\text{Var}(u) = 0$

$\text{chibar2}(01) = 65.10$

$\text{Prob} > \text{chibar2} = 0.0000$

Since the result of the table above shows the significance level lower than 5%, so it is suggested to reject the null that OLS residuals do not contain individual specific error components. In other words, Pooled OLS is indicated to be inappropriate as it ignores the difference between units and the time effect. Thus, using this method can lead to bias in estimation of model results. Based on this result, random-effect model is suggested to be used. In the next part, Hausman test will be applied to determine the appropriateness between random-effect and fixed-effect models.

### 3.3. Hausman test

The result of Hausman test presented below shows the significance level of 17.8% which means that the null hypothesis  $H_0$  cannot be rejected. Therefore, the random-effect model will be accepted to be used in this paper.

**Table 08: Hausman test**

---- Coefficients ----				
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
STD	-1.09e-06	-1.53e-06	4.44e-07	9.74e-07
LTD	-8.80e-07	-1.04e-06	1.62e-07	1.14e-06
SZ	6.38e-07	9.54e-07	-3.16e-07	7.67e-07
LQ	-.0785226	-.113974	.0354514	.0191178
SG	5.568908	5.508314	.0605944	.2242256

b = consistent under  $H_0$  and  $H_a$ ; obtained from xtreg

B = inconsistent under  $H_a$ , efficient under  $H_0$ ; obtained from xtreg

Test:  $H_0$ : difference in coefficients not systematic

$$\text{chi2}(2) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 3.45$$

$$\text{Prob} > \text{chi2} = 0.1780$$

### 3.4. Random effect model estimation

**Table 09: Random-effects GLS regression**

Random-effects GLS regression				Number of obs	=	1020
Group variable: firm1				Number of groups	=	85
R-sq: within = 0.3246				Obs per group: min	=	12
between = 0.0057				avg	=	12.0
overall = 0.1471				max	=	12
				Wald chi2(5)	=	49.25
corr(u_i, X) = 0 (assumed)				Prob > chi2	=	0.0000
ROE	Coef.	Std. Err.	Z	P> z	[95% Conf. Interval]	
-----+-----						
LnSTD	1.882123	1.680004	1.12	0.003	-1.410624	5.174869
LnLTD	.2747095	.4306036	0.64	0.523	-.569258	1.118677
LnSZ	-5.675382	2.116236	-2.68	0.007	-9.823129	-1.527635
LQ	-.0525371	.0901778	-0.58	0.560	-.2292823	.1242082
SG	5.450136	1.021961	5.33	0.000	3.44713	7.453143
_cons	65.11555	13.21136	4.93	0.000	39.22175	91.00934
-----+-----						
sigma_u	7.3827718					
sigma_e	14.784374					
rho	.19959248 (fraction of variance due to u_i)					

As can be seen from the table above, the model is significant with the p-value less than 5%. With the R-square of 32.46%, it can be concluded that 32.46% variation of the dependent variable (ROE) is explained by the explanatory variables. The coefficient summary shows that STD, SZ, and SG have correlation with ROE at a statistical significance level of 5%. Meanwhile, there is no statistical evidence for the relationship between ROE and LTD and LQ (with p-value of 52.3% and 56%, respectively). In order to ensure the empirical model is valid and reliable, cross-sectional dependence and autocorrelation issues will be tested below.

**Table 10: Cross-sectional dependence test**

Pesaran's test of cross-sectional independence = 11.042, Pr = 0.3247

Average absolute value of the off-diagonal elements = 0.332

As can be seen from the table 10, the p-value of Pesaran's test of cross-sectional independence is 32.47% which is much higher than the significance level of 5%. Therefore, the null hypothesis will not be rejected, or in other words, there is no cross-sectional dependence.

**Table 11: Wooldridge test for autocorrelation in panel data**

H0: no first-order autocorrelation  
 $F(1, 84) = 1.026$   
 $\text{Prob} > F = 0.3190$   
 No auto correlation  
 Ho: Panel Homoscedasticity - Ha: Panel Groupwise Heteroscedasticity  
 - Lagrange Multiplier LM Test = 4.20e+04 P-Value > Chi2(31) 0.0000  
 - Likelihood Ratio LR Test = 233.5239 P-Value > Chi2(31) 0.0000  
 - Wald Test = 8.53e+05 P-Value > Chi2(32) 0.0000

As the result of table 11, the Wald test statistic is significant with the p-value of 0.0000, which means the null hypothesis H0 will be rejected. Thus, the empirical model encounters an issue of autocorrelation. This problem can be solved by applying FGLS regression in the table below.

**Table 12: FGLS regression**

Cross-sectional time-series FGLS regression  
 Coefficients: generalized least squares  
 Panels: homoskedastic  
 Correlation: no autocorrelation  
 Estimated covariances = 1 Number of obs = 1020  
 Estimated autocorrelations = 0 Number of groups = 85  
 Estimated coefficients = 6 Time periods = 12  
 Wald chi2(5) = 36.33  
 Log likelihood = -1631.294 Prob > chi2 = 0.0000

ROE	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
LnSTD	.4008238	1.411165	-0.28	0.006	-3.166656	2.365008
LnLTD	.1657248	.3288532	0.50	0.614	-.4788157	.8102653
LnSZ	-1.234379	1.740915	-0.71	0.478	-4.646508	2.177751
LQ	-.2142249	.0902443	-2.37	0.018	-.3911004	-.0373494
SG	5.1241	1.09138	4.70	0.000	2.985034	7.263166
_cons	34.33621	9.560688	3.59	0.000	15.5976	53.07481

As can be seen in the table above, FGLS regression result reveals that the data is homoscedastic and there is no autocorrelation. The model is also significant with the p-value of 0.0000. There are minor changes in the coefficient summary part, in which the SZ

variable no longer has a significant correlation with ROE, meanwhile, LQ shows a significant relationship with p-value of 1.8%.

#### **4. Discussion and Conclusion**

As the result of the FGLS regression table, it can be concluded a significant positive correlation between short term debt and financial performance of 85 listed firms in Vietnam with the coefficient of 0.4, which means if the short-term debt increases by 1 unit, ROE will increase accordingly by 0.4 unit. The results of this model show that the short-term financial leverage has the positive effect on financial performance. According to the capital structure theory, the debt ratio increases the profit of the enterprise by benefiting from the tax shield, debt is the leverage for businesses to increase revenue, thereby increasing profits. The results show that Vietnamese listed businesses made good use of short-term debt efficiently and the benefits from debt financing can offset the costs incurred from in debt.

During the process of collecting data and information of 85 Vietnamese listed firms in particular and the whole economy in general, there are several problems found out related to their capital structure and financial performance. In details, in Vietnamese economy, the capital retained from annual income after tax was less concerned. The State Own businesses, which have finance sponsored by the Government, has no pressure for raising capital (Phan, 2016). Therefore, most of them are operating inefficiently and have no retained earnings for capital. This also applied to small and medium enterprises in Vietnam which are currently unable to generate profit which leads to capital deficit. Furthermore, in Vietnamese economy there are a lot of insolvencies between huge number of companies. This leads to the situation of the amount of bad debts is rising gradually and affects badly to the whole economy. Besides, capital gained from issuing shares on stock market also brings about advantages and disadvantages for Vietnamese businesses (Bui and Nguyen, 2017). In facts, stock market has been developing strongly in the last 12 years and become the most crucially important financing method for every listed companies. Although the market is still new and somehow unstable, the ability to attract capital from issuing shares is completely necessary and realistic. By the way, businesses can build up their brands' images and reputation through this activity. However, there is a problem existed in this too-fast development of stock market. In specific, it is now too easy for firms to go public and issue shares to raise capital, which can result in the imbalance in their capital structure and unexpected risks. The reason might be due to the unprofessional of Vietnamese investors while they do not pay attention on the profits and risks of their investment but mainly buying and selling shares to get income from short-term changes in share prices. By this way, it brings a lot of risks to businesses when they need capital for a project investment which can generate profit after few years; investors, however, still require companies to pay annual dividends and expect for rises in share prices. In case that company cannot guarantee a stable amount of dividends, share prices will absolutely fall down incessantly. More crucially, some companies issued shares and used the amount of capital gained from that to pay their debts rather than to run the business (Le, 2017). On

the other hand, the source of capital from borrowings also has problems. In Vietnam, bank credit usually used for State Own companies, the private sector is less concerned although they contributed more than 42% of GDP (Le, 2017). Within 3 companies, only one of them is able to approach borrowing capital from banks, the rest of them are difficult to approach or unable to approach. One of the most crucial reason is that they do not have enough assets for mortgage, and even in case that they have some mortgage, they can only borrow 70% of the value of their assets (Nguyen and Dang, 2017).

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# **CORPORATE ENVIRONMENTAL DISCLOSURE - INTERNATIONAL PRACTICES AND IMPLICATIONS FOR VIETNAM**

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## **Abstract**

Corporate environmental disclosure is of great interest to a wide range of stakeholders including employees, customers, suppliers, creditors, governments, and the general public. A recent survey of KPMG in 2017 found that 78 percent of the world's largest 250 multinational companies include corporate social responsibility in their annual financial reports, and Global Reporting Initiative is the most popular framework for corporate responsibility reporting, with 75% of top 250 companies applying it. By studying a typical case study of a Swiss company and comparing environmental disclosure practices between Malaysia and Australia, the paper analyzes several factors affecting the level of environmental disclosure of public listed companies, and attempts to explain why corporate environmental disclosure in the annual reports of companies from developing countries are less extensive and less credible than those of companies from developed countries.

**Keywords:** affecting factors, annual reports, corporate social responsibility, environmental reporting.

## **1. Introduction**

Corporate disclosures can be defined as the communication of firm performance and governance to external investors and other stakeholders (Healy and Palepu, 2001). Investors are provided with material information and are protected through effective monitoring and enforcing rules. Both financial and nonfinancial information should be reported and disclosed to investors so that they may compare companies across industries. Moreover, adequate and credible disclosure will enhance investors' confidence, which may help improve liquidity and transparency of the stock market (Choi and Meek, 2011).

National differences in disclosure mainly result from differences in corporate governance and finance. In the United States, the United Kingdom, and other Anglo-American countries, highly developed equity markets often provide most corporate financing. In these markets, ownership tends to be spread among many shareholders,

therefore investor protection is emphasized. Institutional investors play a growing role in these countries, and public disclosure is highly developed to ensure companies' accountability to the public. On the contrary, in many other countries, such as France, Germany, Japan, and other emerging market countries, shareholdings are highly concentrated and banks have been the primary source of corporate financing. Banks play the role as both creditors and owners while other insiders, such as corporate members of shareholder groups provide discipline. These banks, insiders, and others are closely informed about the company's financial position and its activities. As a result, public disclosure is less developed in these markets and differences in the amount of information provided to shareholders and creditors compared to the public may be allowed.

Institutional investors often have high attention on the issue of global climate change, therefore corporate environmental performance becomes the center of corporate governance considerations all over the world. The United Nations Principles for Responsible Investment in 2006 provide guidance on how to integrate environmental, social and governance issues into investment decision-making and ownership practices (UNCTAD, 2007). Companies' operations are related to a wide range of stakeholders including employees, customers, suppliers, governments, and the public community who have various concerns besides the company's financial performance.

Social responsibility reporting can be defined as the measurement and communication of information about a company's effects on employee welfare, the local community, and the environment (Choi and Meek, 2011). In other words, social responsibility reporting is a way to demonstrate corporate citizenship. Environmental issues include the impact of production processes, products, and services on air, water, land, biodiversity, and human health. Sustainability reports that integrate economic, social, and environmental performance are referred to as *triple-bottom-line reporting*, or the three Ps including profits, people, and planet. For a variety of reasons, many corporations show their great efforts to protect their reputations and the environment in which they do business.

However, there are still arguments on social responsibility reporting. Although profit measurement can be easily performed, measurement of environmental protection and social justice may be not. The reason is that there is no single yardstick to compare each of the three Ps with each other. Is there any tradeoff among these three factors? Despite such arguments, social responsibility reporting has been of great interest by large multinational companies. A recent survey of KPMG in 2017 found that 78 percent of the world's largest 250 multinational companies include corporate social responsibility in their annual financial reports, compared to only 44% of G250 in 2011 (KPMG, 2017). Choi and Meek, 2011 reveals that corporate disclosure in the annual reports of companies from emerging-market countries is less adequate and less credible than those of companies from developed countries.

## **2. Method**

By studying a typical case study of a Swiss company and comparing environmental disclosure practices between Malaysia and Australia, the paper analyzes several factors affecting the level of environmental disclosure of public listed companies, and attempts to explain why corporate environmental disclosure in the annual reports of companies from developing countries are less extensive and less credible than those of companies from developed countries.

## **3. Research Results**

### ***3.1 Environmental disclosure regulations in Malaysia and Australia***

According to Malaysian Financial Reporting Standard no.101 “Presentation of financial statements”, environmental reporting is voluntary in Malaysia. In addition to financial statements, many enterprises in Malaysia present additional statements such as environmental reports, particularly in industries where environmental factors are significant. Under Financial Reporting Standard no. 137 “Provisions, contingent liabilities and contingent assets”, environmental obligations should be recognized such as penalties or clean-up costs for environmental damage and decommissioning costs of an oil installation as potential business provisions. Furthermore, a joint work between ACCA Malaysia and the Department of Environment Malaysia was conducted on the production of environmental reporting guidelines for Malaysian companies in year 2003.

Australia has a mix voluntary-regulatory framework on environmental disclosures. According to the Corporations Act 2001 requires that if the company’s operations are subject to any significant environmental regulation, it should provide details of its performance in relation to environmental regulation. In general, Australia has an extensive environmental legislation that can restrict or regulate companies’ business practices that may have impacts on the environment, such as Environmental Protection and Biodiversity Conservation Act 1999, Renewable Energy Act 2000, Australian Forestry Standard 2002 and many State government’s enforcement strategies. In addition, Australian industrial companies are required to report their levels of emissions and inventories on specific substances and fuels to National Pollutant Inventory agency. Furthermore, the Australian Conservation Foundation and Australian Consumer Association also initiate corporate ratings on corporate environmental performance. Thus, Australia not only encourages corporations to conduct their businesses socially and environmentally but also puts some pressure on corporations to report and disclose their environmental activities.

### ***3.2 Comparisons of environmental disclosure between Malaysia and Australia***

Yusoff & Lehman (2008) investigates the differences of environmental disclosure practices between Malaysian and Australian public listed companies. Based on corporate annual reports of the top 50 Malaysian and Australian public listed companies, the research results indicated that Australian companies disclosed more extensive environmental information compared to Malaysian companies.

**Table 1 - Mean scores for environmental disclosures  
in annual reports in Malaysia and Australia**

<b>Environmental disclosures</b>	<b>Malaysia</b>	<b>Australia</b>
1. Financial factors		
<i>Past and current environmental expenditures</i>	Nil	3.25
<i>Future estimates of environmental expenditures</i>	Nil	3.25
<i>Financing for environmental equipment</i>	Nil	2.67
<i>Environmental cost accounting</i>	Nil	2.00
<i>Average mean scores</i>	<b>Nil</b>	<b>2.85</b>
2. Environmental litigation		
<i>Past and present litigation</i>	Nil	3.75
<i>Potential litigation</i>	Nil	Nil
<i>Average mean scores</i>	<b>Nil</b>	<b>3.75</b>
3. Pollution abatement	<b>1.99</b>	<b>2.22</b>
4. Environmental preservation	<b>1.82</b>	<b>1.79</b>
5. Other environmentally related information	<b>1.45</b>	<b>1.59</b>
6. Environmental initiatives	<b>1.62</b>	<b>1.79</b>

*(Source: Yusoff & Lehman, 2008)*

(Notes: Nil - non-disclosure; 1 - general disclosures; 2 - qualitative disclosures; 3- quantitative disclosures; 4 - combination of qualitative and quantitative disclosures)

As shown in Table 1, Yusoff and Lehman (2008) research results show that none of Malaysian companies disclose environmental information in financial accounts compared to 2.85 average mean scores made by Australian companies. This result reveals that Malaysian companies fail to quantify environmental matters. On the contrary, most Australian companies reported their environmental compliance in the directors report, in accordance with Corporations Act 2001 where Australian listed companies are required to report their environmental compliance.

In terms of types of environmental news, Australian companies tend to report both positive and negative environmental news while Malaysian companies tend to disclose only good environmental news to public. In particular, the lowest level of environmental information of Malaysian companies was environmental audit and environmental stakeholder engagement activities while this lowest level of Australian companies was environmental education programs. Surprisingly, in highly developed Australia, very few corporations conduct environmental educational programs.

Yusoff et al., (2013) explored and compared environmental reporting practices of companies in Malaysia and Australia, and investigated the potential factors affecting environmental disclosures in corporate annual reports. Based on selected 100 companies in Malaysia and Australia to study the environmental disclosures, Yusoff et al., (2013) show that 72.2% of Malaysian companies and 60.7% of Australian companies disclose some

environmental information in their corporate websites. Only 11% of Malaysian companies have environmental reports or other stand-alone report while this rate is 32% in Australia.

### 3.3 Typical case study of the practices of environmental disclosure in Swiss

In Malaysian case study, no environmental information in financial terms including past, current, and future estimates of environmental expenditures, environmental cost accounting is disclosed in Malaysian companies' annual reports. This reveals Malaysian companies fail to quantify environmental matters. Therefore, a typical case study of a Swiss company, Roche, is chosen in this study to illustrate the way to quantify and disclose environmental issues in financial terms.

Founded in 1896 in Basel, Switzerland, Roche has grown into one of the world's leading healthcare companies. Since then, Roche has expanded its business activities in Germany, built a network of European and overseas agents and subsidiaries in Milan, New York, St. Petersburg, London and many other cities in the world. After the corporate realignment, Roche operates with four core business divisions: pharmaceuticals, vitamins and fine chemicals, diagnostics, and flavours and fragrances. Recently, to intensify its focus on healthcare, Roche divests two businesses: fragrances and flavours, and vitamins and fine chemicals.

According to the guidelines for sustainability reports issued by the Global Reporting Initiative (GRI), the GRI framework recommends the disclosure of performance indicators in the areas of environmental performance, such as energy consumption, water usage, and greenhouse emissions. Based on the 2008 annual report of Roche, Table 2 illustrates environmental protection activities through energy use, greenhouse gas emissions, and water use. Roche's sustainability reporting is aligned with GRI guidelines.

#### *Energy and climate change*

We aim to reduce energy use and emissions of green-house gases such as carbon dioxide (CO<sub>2</sub>) from our operations.

Goal: Reduce total energy consumption by 10% by 2010 from 2005 baseline

Goal: Reduce greenhouse gas emissions by 10% by 2008 from 2003 baseline (CO<sub>2</sub> equivalent unit/sales)

Performance: In 2008, Roche used 13,662 terajoules of energy, a decrease of 2 terajoules from the previous year.

Energy use (terajoules)	2008	2007	2006
Total energy use	13,662	13,664	12,467
Total energy use per million CHF of sales	0.299	0.296	0.297
Total energy use per employee	0.178	0.179	0.174

Emissions from our energy use together with other greenhouse gas emissions totaled 1.06 million tonnes of CO<sub>2</sub> equivalent in 2008, an absolute increase on 1% from 2007. This rise in emissions despite lower energy consumption is due to increased car and

plane travel.

*Greenhouse gas emissions*

Greenhouse gas emissions relative to sales have increased this year to 23.28 tonnes per million Swiss francs of sales. This equates to a total decrease of approximately 54.8% since 2003, which exceeds our 10% reduction goal by the end of 2008.

Greenhouse gas emissions (tonnes CO2 equivalent)	2008	2007	2006
Total emissions	13,662	13,664	12,467
Total emissions per million CHF of sales	0.299	0.296	0.297

Our Group strategy for decreasing greenhouse gas emissions is guided by our position paper on Greenhouse Gases and Climate Change. The paper stresses the connection between CO2 emissions and energy use and we are implementing measures to reduce energy consumption and improve efficiency.

The directive requires site energy audits to be carried out. In 2008 we issued guidance to ensure a structured approach to these audits. They can be carried out by third parties or by the sites themselves. We select sites to be audited according to their circumstances and energy consumption. As a result, the audits may not cover an entire site but may concentrate on a particular system. We use the results to develop initiatives and goals to reduce future energy use.

*Water*

Clean water is integral to Roche's manufacturing processes. In 2008, we withdrew 21 million m3, for these purposes from various sources, approximately the same amount as last year.

The Global Reporting Initiative defines water consumption as the water used in products, cooling and air conditioning, and irrigation. We increased our consumption based on this definition by 4.3% from 2007 to 2.4 million m3. We continually strive to reduce our water consumption globally. Manufacturing processes often release contaminated wastewater as a by-product. We treat wastewater to ensure it is safe for the environment and humans before we release it into watercourses. We aim to increase our capacity to treat wastewater as our business continues to grow.

Water	2008	2007	2006
Water withdrawn	21.0	21.0	22.1
Water used (million cubic meters)	2.4	2.3	4.3
Wastewater discharged to treatment plant (million cubic meters)	7.3	7.1	5.1
Organic matter discharged to watercourses after treatment (tonnes)	592	641	313
Heavy metals discharged to watercourses after treatment (kilograms)	545	605	1,086

*(Source: Roche 2008 annual report)*

**3.4 Factors affecting environmental disclosure**

Disclosure practices are influenced by finance sources, political and legal systems, level of economic development, education level, culture, and many other factors (Choi and

Meek, 2011). Juhmani (2013) found that three factors affecting the level of voluntary disclosure of Bahraini listed firms were blockholder ownership, size and financial leverage of firms while managerial ownership and governmental ownership were not associated with voluntary disclosures. Based on annual reports of 1,066 Chinese firms listed on the Shanghai and Shenzhen Stock Exchanges, Lan et al., (2013) suggested that voluntary disclosure in China was positively associated with firm size, leverage, assets-in-place, return on equity, and was negatively associated with auditor type and the level of sophistication of the intermediary and legal environments. Meek et al., (1995) based on annual reports of multinational corporations from the U.S., U.K. and Continental Europe and found that company size, country or region, listing status, and industry are the most important factors affecting voluntary disclosures.

Yusoff & Lehman (2008) detected several potential factors affecting environmental disclosure practices. ISO 14001 certification was found to have large influence on both Malaysian and Australian companies' voluntary environmental disclosure. ISO 14001 certification provides evidence that companies have control over their operations, commit to comply with relevant environmental regulations, and more importantly, they are doing their best to improve their environmental performance. On the other hand, Australian evidence indicated that companies with high financial performance might disclose more environmental information. In other words, there is possibly a positive relationship between environmental disclosures and corporate financial performance.

#### **4. Implications for Vietnam**

Since the foundation of the State Securities Commission (SSC) in 1996, Vietnam stock market has been operating for more than 20 years. According to SSC's statistics, market capitalization in 2017 reached VND3.36 trillion, equivalent to 74.6% of Gross Domestic Product. Although the level of disclosure of listed companies in Vietnam has been improved compared to previous years, practices of corporate disclosure in Vietnam are less extensive and less credible resulted from information asymmetry.

According to a recent survey of Vietstock (2017), only 114 listed companies fully followed information disclosure requirements on both Hochiminh and Hanoi stock exchanges, equivalent to 16.69% over the total surveyed 672 companies. Vietstock's survey report in 2017 provides details of common violations of information disclosure criteria of listed companies on the Vietnamese stock market. First, criterion of disclosing financial statements was violated by more than 30% of total surveyed companies. Second, violation rate of disclosing resolutions and meeting minutes of annual general meeting of shareholders was nearly 30%, and criterion of disclosing managerial reports was violated by 23%. Finally, violations of other criteria included stocks under control or being warned, being reminded or sanctioned by State administrative agencies, stock transfer violation. For voluntary disclosures, for example, regarding criterion of disclosing misstatement reporting policy, no listed company mentioned this policy in their annual reports during the two years 2015-2016. This reflects the corporate responsibility of disclosing information voluntarily of listed companies in Vietnam is not good.

Investors and other stakeholders would expect a wide range of variation in disclosure levels of listed companies on the stock market. Although managers need to

consider the costs of disclosing corporate information, both mandatory and voluntary disclosures are becoming more stringent in the world. Credible disclosure will increase investor confidence, facilitate liquidity, and reduce transactions costs for listed companies. In order to protect investors and other stakeholders, it is essential to determine and measure the impacting factors on the level of disclosure in general and on environmental disclosure in particular so as to enhance the transparency of the stock market in Vietnam.

From investors' viewpoint, investors are the first victims to suffer the consequence of disclosure violations of listed companies. Investors should be equipped with the knowledge of the regulations and the best practices on disclosure of environmental information. Investors need to proactively read the assessment report on disclosure by independent organizations such as Vietstock reports. Based on these independent reports, investor will be able to classify listed companies for investment decisions to avoid unnecessary risks.

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# IMPACT OF INTERNAL MARKETING ON TURNOVER INTENTION OF SME STAFF IN SERVICE INDUSTRY IN HANOI, VIETNAM

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## **Abstract**

*The role of internal marketing has been confirmed through many researches in various fields. This article explores the relationship between some elements of internal marketing and the turnover intention of SME' employees in service industry in Hanoi. The study was carried out by quantitative method with a sample of 818 workers. The findings confirm that Leadership, Pay Satisfaction and Person-Organizational Fits significantly impact turnover intention. The Working environment was found to have no impact on Turnover intention in service industry. The result of the study adds to the expertise of human resource service managers in keeping employees in business.*

**Keywords:** internal marketing, leadership, pay satisfaction, person-organization fit, service industry, SME, turnover intention, working environment.

## **1. Introduction**

In the international globalization, competitions among enterprises have become more challenge. It is difficult to recruit but how to retain them is more difficult. During last years, staff turnover has become a big issue of many organizations, especially in SMEs where their resources must be prioritized on production or business development in order to create more profit rather than resources spent to keep or retain their employees. Moreover, in SMEs of services industry in which it requires their employee's commitment than the other industries because the service's quality demonstrates on their employee's behavior. When the employee has less organizational commitment, it affects directly their service's quality, it means it affects their business reputation and turnover. This industry requires the number of employees, in the meantime, its staff turnover rate is always higher than the others because of this industry's nature as its diversity in the labor, seasonal services, it' staff has more job opportunities and unstable labor forces. Labor forces play an important role because they are objects to transform every message, corporate culture and the nature of the industry. The service industry's quality is demonstrated on its labor force's quality. The more labor force has changes, the more quality of the industry is affected.

Most conventional marketing researchers focus on external customers to business organizations and explore methods of retaining external customers. However, for service providing organizations, services provision is from internal customers to external customers with intangible or tangible services. The organizational service quality thus is affected by the service contents from internal customers and the employee's service attitude. Internal marketing issues thus have started to become the focus of research on marketing, strategies and organizations. Particularly, service organizations should pay increased attention to internal marketing, because employees must contact and interact with customers when providing service. Internal marketing practices aim to attract and retain the most qualified and committed employees for the organization. In a service-providing organization, this translates into eliciting service-oriented behaviors designed to achieve high customer satisfaction and loyalty (Kim, 2016; Barnes & Morris, 2000). Service organizations create service values for external customers by interacting with employees and delivering service value to external customers. Bansal et al. (2001) posited that internal marketing can improve employee organizational loyalty and job satisfaction. Internal marketing also attracts and organizes talent, and helps business organizations improve employee service capabilities (Berry, 1984). Internal marketing is gaining increasing recognition in both the academic and commercial arenas through enhancing both customer and employee satisfaction (Lings, 1999).

## **2. Litteratural review**

### ***Internal Marketing***

Internal marketing is an application of marketing philosophy and method with the purpose of stimulating employees to complete the tasks (Greene, Walls, & Schrest, 1994). Palmer (2001) defined internal marketing as the application of the principles and practices of marketing to an organization's dealings with its employees. Internal marketing treats the employee as an internal customer, regards jobs as products, and intends to satisfy the employee's demands through products (Longbottom et al., 2006). Kotler and Armstrong (1991) viewed internal marketing as the building of customer orientation among employees by training and motivating both customer-contact and support staff to work as a team. Zeithaml and Bitner (2000) indicated that in the Golden Triangle model of service, external marketing aims to construct commitment, interactive marketing aims to fulfill commitment, and internal marketing aims to enhance an employee's ability to fulfill commitment. Although external and interactive marketing are important, internal marketing places greater value on internal employees' human resources management and applications.

Research Objectives and Importance of the investigation Significance Internal marketing is especially important for service organizations (Greene et al., 1994), because service companies generally maintain contact with customers via their employees, most service industry organizations are highly labor-intensive and internal marketing is helpful for such organizations in attracting and ensuring high involvement of high quality talent (Berry, 1984). Internal marketing is based on the notion that organizations providing secure employment are committed to their workforce.

Gronroos (1994) asserted that without active and continuous internal marketing efforts, the interactive marketing impact on customers will deteriorate, service quality will suffer, and customers will start to defect with negative effects on profitability as a result. Gummesson (2000) suggested that internal marketing is a strategic operation that combines marketing and human resources management in order for first-line service personnel to provide the best service when interacting with customers. Joseph (1996) suggested that internal marketing motivates, mobilizes, recruits, and manages employees by using marketing and human resource management approaches to continuously improve services to employees, which was consistent with Kotler and Levy (1969), who defined internal marketing as follows: firms successfully hire, train, and motivate employees to provide better service to customers. In summary, internal marketing embraces the notion that a company should treat its internal employees as external customers in satisfying their needs. Thus, through management satisfying the needs of internal customers, employees become more motivated and committed to the company, which leads to external customers being well served (Barnes et al., 2004).

Many academic studies in the internal marketing literature identified key elements of internal marketing, including Conduit and Mavondo's (2001) market training and education, management support, internal communication, personnel management, and employee involvement in external communication; Ahmed, Rafiq, and Saad's (2003) top management support, business process support, and cross-functional coordination; Tsai and Tang's (2008) service training programs, performance incentives, and vision for service excellence. In this study, four factors represent internal marketing will be test. Those are: Leadership (LS), Person-Organizational Fits (POF), Pay Satisfaction (PS) and Working Environment (WO).

#### *Leadership*

Leadership is the way the leader gives the direction, plan and motivates the others in the enterprise. It is the leading way for their employee to achieve the company's objectives. The leader who is mirror of their employee, transform to the others by their action plans and directions in the future (Podsakoff, MacKenzie, Moorman & Fette's (1990).

#### *Person-Organizational Fits*

POF is the fit between an individual and organization (supplementary and complimentary fits). It is additional same characters (Muchinsky & Monahan, 1987, p.269). Supplementary occurs when an individual's characters add the whole or a part to what is that organization (Muchinsky & Monahan, 1987, p 271).

#### *Pay Satisfaction*

Pay Satisfaction is with salary, the way to pay, C&B policy or process and term of payment as well as other bonus or allowance (in-direct benefits) to the employee (Heneman, 1985).

#### *Working Environment*

According to Balzer et al (1997), Dabke et al (2008), WE is the place where the employee can expose their ideas, the place where they are equipped necessary working tools to work, where they can work in fresh air and independently. This is the working

condition to facilitate the employee so that they can work more effectively and enhance their commitment to the organization.

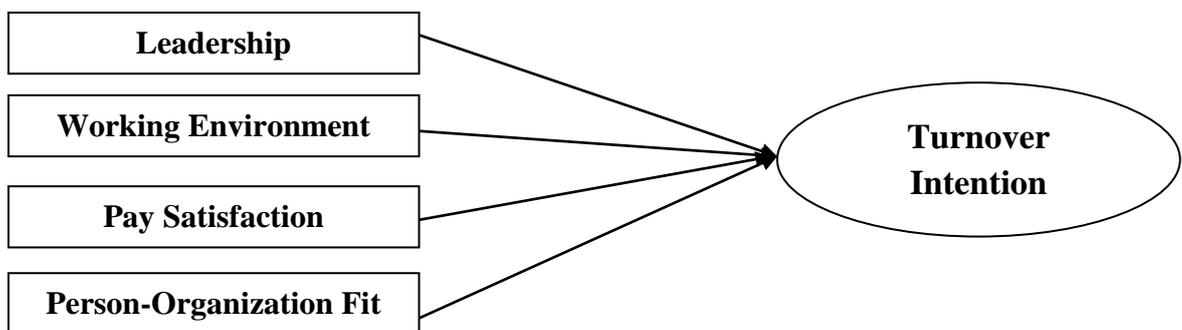
### ***Turnover Intention***

Turnover intention is the intention to leave the current working environment to move to another working environment. According to some studies, there are many reasons to leave an organization, such as retirement or relocation, but the most common reasons are when employees see leadership or managerial behavior. Incorrect or not good work, inconvenient work for development (no chance of development or promotion), unreasonable wages and bonuses (Janet Cheng Lian Chew, 2004).

Turnover is a process where employees leave a job or leave an organization. The turnover intention is to measure whether an employee plans to leave their position or whether the organization plans to change the employee from that position. Turnover intention, like the very nature of leaving, may be voluntary or involuntary. The voluntary turnover intention of the organization will occur when the employee decides to leave his or her organization. This action occurs when the employee receives a better job opportunity than the current job. This also includes reasons for being paid higher, more credited, or to a more advantageous organization. It can also occur due to health or family factors of the employee. If an employee plans to leave his or her job, it is obvious that they intend to leave voluntarily (Dess & Shaw, 2011).

In contrast, involuntary turnover intention organization is measured whether the organization plans to fire or replace the employee from the job, and this will inevitably result in leaving the organization. This usually happens when an organization is dissatisfied with the employee, dissatisfied with the performance of the employee and seeks to replace the employee. It also happens when businesses want to cut back on excess, unimportant (non-value-generating) positions due to economic downturns or termination of operations (Dess & Shaw, 2011). In summary, involuntary departure is the decision of the employer not to employ such personnel.

There are not many studies examining the relationship between internal marketing and the intention to leave the business. Especially in the service sector, this issue has not been considered much. Therefore, the author studies the relationship between some elements of internal marketing and the intention to leave the business of SME employees in the service sector in Hanoi, Vietnam through the following model:



**Proposed research model**

### ***Research hypotheses:***

(H1) Leadership impacts negatively to turnover intention.

(H2) Working Environment impacts negatively to turnover intention.

(H3) Pay Satisfaction impacts negatively to turnover intention.

(H4) Person-Organization Fit impacts negatively to turnover intention.

### ***Measure***

Turnover intention scale was adopted from Meyer Angle, Perry (1981) và Jenkins (1993).

Leadership scale was adopted from Podsakoff, MacKenzie, Moorman, and Fette's (1990).

Working Environment scale was adopted from Nazim Ali (2010).

Pay Satisfaction scale was adopted from Weiss, Dawis, England and Lofquist (1967).

Person-Organization Fit scale was adopted from Cable and Judge(1996).

### **3. Method**

The study was conducted by quantitative method through a survey. Data collection was used to evaluate the scales, factor analysis, and model testing and hypotheses by means of multiple regression with the support of SPSS software version 20.

To achieve the objective of the research, within limited capabilities and resources, the authors selected sampling probability (non-stratified random selection). According to a delimitation of the Ministry of Planning and Investment on the small and medium enterprises operating in services sector includes various fields such as the health sector, education, information technology, transportation, management consulting ... Based on this classification, the authors randomly selected small and medium enterprises in the fields as stated above to ensure the extensiveness of enterprises in different sectors in the service industry.

To ensure the representativeness of the sample, the authors have tried to select the sampling units in the small and medium enterprises in the service sector in different geographical areas of Hanoi, not just focused on districts at the center of Hanoi.

The data collection took place at locations predetermined list, the author delivered the questionnaire to employees in such enterprises above. Total questionnaires was 1,000; 915 were collected, and valid ones were 818.

### **4. Results**

#### ***4.1. Testing value and reliability of measuring scales***

Results show that  $KMO = 0.711$  which meets the condition of  $KMO > 0.5$  (Kaiser, 1974). So, we could conclude that the factor is appropriate with available data. By the same way, test result Barlett shows that  $p = 0.000 < 5\%$ , which means variables have relationship with each other and meet conditions to analysis factors by EFA examination.

Results showed that from 38 items of can extract 4 independent variables. The total variance which is explainable as extracting factor group is  $75.175\% (> 50\%)$ .

EFA shows that LS is loaded in one factor. All of load coefficients meet defined standards (>0.6) and shows that observing variables have significant relationships with each factor. All items of POF is loaded in one factor, the lowest is 0.821, highest 0.842, it means it has significant relationship with POF. PS with 14 items are loaded in one factor, all is 0,662 above, as a result, observing variables have significant relationship with PS. All items of WE are loaded in one factor and it has significant relationship.

The result shows that Cronbach Alpha value and total variable correlation coefficient meets standards (>0.7). Therefore, these are good measuring scale with close correlation with each other's in order to measure independent and dependent variables. These scales guarantee reliability and may be used for following analysis.

#### ***4.2. Hypothesis test and regression analysis***

The result illustrates that the adjusted coefficient R<sup>2</sup> of the model is 0.218. Thus, the independent variables were able to explain 21.8% of the variation of turnover intention.

The F test result of the model shows that  $F = 24.542$ ,  $sig = 0.000$ . Thus, this relationship assures the reliability with a permissible level of 5%. Therefore, it is possible to conclude that independent variables have an impact on turnover intention and a linear multiple regression model that is consistent with the data set and is usable.

The results of the multi-collinearity test of the model show that the variance inflation factors VIF in this model are <2. Therefore, multicollinearity property of independent variables is insignificant and variables in the model may be accepted

The results of the regression analysis also show that:

- Sig value of Leadership factor < 0.05, so we could accept hypothesis H1 Leadership impacts negatively to turnover intention.

- Sig value of Working Environment factor > 0.05, so we could reject hypothesis H2. Working Environment impacts negatively to turnover intention.

- Sig value of Pay Satisfaction factor < 0.05, so we could accept hypothesis H3. Pay Satisfaction impacts negatively to turnover intention.

- Sig value of Person-Organization Fit factor < 0.05, so we could accept hypothesis H4. Person-Organization Fit impacts negatively to turnover intention

The relationship between dependent and independent variables is shown in the following linear regression equation:

$$Y = -0,250X_1 - 0,214X_2 - 0,139X_3$$

Y: Turnover intention

X<sub>1</sub>: Leadership

X<sub>2</sub>: Pay Satisfaction

X<sub>3</sub>: Person-Organization Fit

The regression equation shows that normalized Beta coefficients of independent factors are all  $< 0$ , which means independent variables negatively influence to turnover intention. Thus, according to the above equation, when an entity turnover intention increases, then there must be a negative resonance of 0.250 Leadership, 0,214 Pay Satisfaction, and 0,139 Person-Organization Fit.

## **5. Discussion and implication**

Hypothesis H1 is accepted, confirming Leadership impacts positively to turnover intention. The better the leader, the less the intention to leave the company. Leadership is the way the leader gives the direction, plan and motivates the others in the enterprise. It is the leading way for their employee to achieve the company's objectives. The leader who is mirror of their employee, transform to the others by their action plans and directions in the future. When leaders have a positive leadership style, respecting employees and creating good working conditions for employees, employees will want to stay. Especially in the SME service industry, the leader often has direct supervision to employees, so the leadership style is more influence on the intention to connect or leave the business. Therefore, the leaders of SME service industries need to choose an positive leadership style and towards the retention of employees.

Hypothesis H2 is rejected, so there is not enough evidence to conclude that Working Environment impacts positively to turnover intention. Working Environment is the place where the employee can expose their ideas, the place where they are equipped necessary working tools to work, where they can work in fresh air and independently. This is the working condition to facilitate the employee so that they can work more effectively and enhance there commitment to the organization. However turnover intention does not come from internal factors, but also from external factors, such as other firms offering higher salaries or more suitable jobs. Especially with the SME service sector, because of the small size of the company, the working conditions are not the best. Besides the service sector is the industry where competitors often attract good employees from other businesses Therefore, good working environment does not explain the intention to leave the company.

Hypothesis H3 is accepted, confirming Pay Satisfaction impacts positively to turnover intention. Thus, employees are more satisfied with the income from the business, the less they intend to leave the business. Pay Satisfaction is with salary, the way to pay, compensation and benefits policy or process and term of payment as well as other bonus or allowance (in-direct benefits) to the employee. Employees in general and SME service workers in particular exchange their labor for income. Getting a decent income will help them want to stick with the job, and reduce the intention to leave the business. In the service sector, in addition to basic salary, employees also receive bonuses from businesses and customers when they perform well. So income from work is really a factor that helps keep employees. Managers of SME service businesses should pay attention to compensation and benefit to increase the level of commitment and minimize the employee's turnover intention.

Hypothesis H4 is accepted, confirming Person-Organization Fit impacts positively to turnover intention. So when employees find themselves fit for the organization, the less their intention to leave their business. Person-Organizational Fits is the fit between an individual and organization. Different service sectors have different organizational characteristics and job characteristics. When employees feel they are fit for the organization, they feel they are able to match their job requirements, working conditions fit their desires, job characteristics fit their interests. They will enjoy the work more and devote more to the work and the company. In other words, they will work with passion and will want to stick with the business. Thus reducing turnover intention. As a result, SME service industry executives need to do well in internal marketing by creating a fit between employees and work, between employees and the organization.

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# **COST INEFFICIENCY OF COMMERCIAL BANKS IN VIETNAM: STOCHASTIC FRONTIER ANALYSIS**

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## **Abstract**

*This paper measures the cost inefficiency of Vietnamese commercial banks from 2011 to 2014. Stochastic frontier analysis (SFA) is used to estimate the cost frontier. The average cost inefficiency of the whole banking system is 7.36% under intermediation approach. Findings show that state-owned banks and banks with bigger size are more efficient than joint stock or smaller ones. Negative relationships are found between efficiency and deposit-to-loan ratio as well as bank's age. Banks should focus on increasing their sizes and other earning assets, monitoring carefully the loan-making process to avoid non-performing loans, and investing in human resource.*

**Key words:** commercial bank cost inefficiency, Stochastic Frontier Analysis, intermediation approach.

## **1. Introduction**

The pace of globalization and trade liberalization has increased dramatically in recent years, making integration an inevitable reaction for all countries. This progress offers not only many opportunities, but also brings even more challenges, especially for developing economies like Vietnam. It is no exception for Vietnamese commercial banks, when they have to face more and more pressures and competitions from each other and from foreign banks. Therefore, being able to improve efficiency by analyzing its determinants is a must.

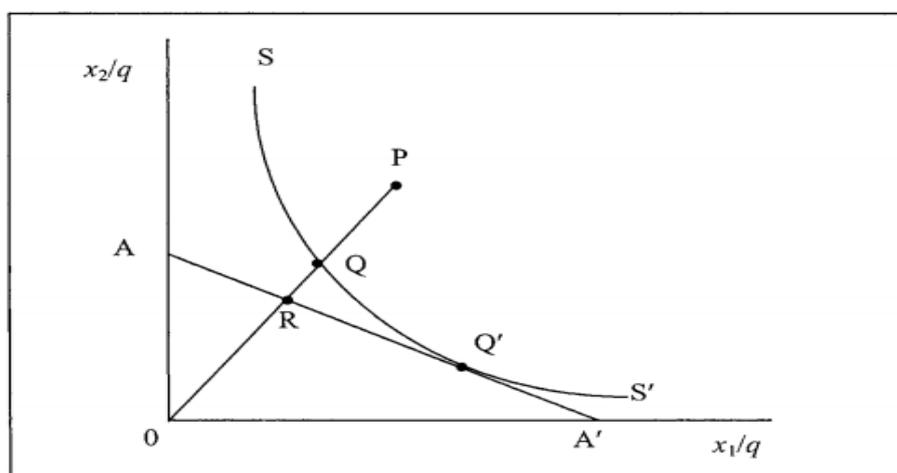
Vietnam is a transition economy, thus its banking industry is also changing quickly since Doi Moi (renovation) in 1986. Unfortunately during this process of integration and change, Vietnam economy was affected by the financial crisis in 2007. Hence, some of the pre-crisis researches on Vietnamese bank's efficiency such as Nguyen (2008), and Vu & Turnell (2010) became less applicable. Some later studies included the post-crisis years in their researches, but to the authors' knowledge, the latest data analyzed was only until 2012 in Vu et al (2014) and Phan & Daly (2014)'s works. Moreover, most researches focus on calculating the average efficiency of the whole Vietnamese banking system in general. Hence, the main objective of this study is to explore the efficiency measurements of Vietnamese banking system in general and commercial banks in specific and the determinants affecting these measures during the post-crisis period, utilizing intermediation approach, parametric method called Stochastic Frontier Analysis (SFA) and panel data collected from 21 Vietnamese commercial banks between 2011 and 2014.

## 2. Literature Review

The first appearance of the topic about efficiency can be dated very far back in the past to the publication day of the first modern work of economics: *An Inquiry into the Nature and Causes of the Wealth of Nations* (Smith, 1776). Nearly 200 years after, Koopmans (1951) and Debreu (1951) brought to light the first two thorough analytical approaches to the efficiency's measurement. Koopmans (1951) defined technical efficiency which reflects the ability to achieve maximal output from a given set of inputs, then Debreu (1951) initiated a measure of such technical efficiency, and Farrell (1957) first applied these ideas empirically.

### 2.1. The concept of efficiency

Farrell (1957) idea of measuring efficiency is elaborated using a simple example of firms using 2 inputs ( $x_1, x_2$ ) to produce 1 output ( $q$ ). The idea can be illustrated in Figure 1 below. Fully efficient firms are represented by the isoquant  $SS'$ .  $AA'$  is the isocost line.



Point P represents the quantities of inputs used by a given firm to produce a unit of output. Thus  $QP$  – the amount where all inputs can be proportionally reduced without decreasing output – represents the technical inefficiency of that firm. Such inefficiency is usually expressed in percentage terms –  $QP/OP$ . The technical efficiency (TE) of that firm is hence given by:  $TE = 1 - QP/OP = OQ/OP$ . TE takes value between 0 and 1.  $TE = 1$  means the firm is fully technically efficient, for example firms using inputs at Q, i.e. producing on the efficient isoquant.

When information about input price is known, the cost efficiency (CE) of that firm is also measurable. Let  $w$  represent vector of input prices;  $x$  represent the vector of inputs used at point P;  $x^*$  represent the cost-minimizing input vector at point  $Q'$ . CE is then defined as the ratio of input costs associated with input vectors at point P and  $Q'$ :  $CE = w'x^* / w'x = OR/OP$ . (note:  $w'$  is the inverse vector of  $w$ ).

When information about input price ratio - represented by the slope of isocost line  $AA'$  - is also known, TE and allocative efficiency (AE) are also measurable. Let  $x_{\sim}$  represent the input vector used at technically efficient point Q. TE and AE is then given by:  $TE = w'x_{\sim} / w'x = OQ/OP$ ;  $AE = w'x^* / w'x_{\sim} = OR/OQ$ . From here we have  $TE \times AE = (OQ/OP) \times (OR/OQ) = OR/OP = CE$ . This is the decomposition of overall cost efficiency into

technical efficiency - ability of firm to obtain maximum output from given inputs - and allocative efficiency - ability of firm to use inputs in optimal proportions given their prices. Farrell's research since then has become a seminal work for many studies and researches afterwards.

## ***2.2. Measuring Efficiency: Frontier estimation methods***

To compute the above efficiency measures, i.e. to evaluate TE, AE, and CE, we first need to estimate the isoquant SS', which is essentially a best-practice frontier. This frontier can be estimated by either non-parametric or parametric approach. Non-parametric approaches include Data Envelopment Analysis (DEA) and Free Disposal Hull (FDH), while parametric ones consist of SFA, Distribution Free Analysis (DFA) and Thick Frontier Analysis (TFA). According to Berger & Humphrey (1997), these techniques differ primarily in what extent the restrictive form is imposed on the efficiency frontier and in the assumptions of the probability distributions of random error and inefficiency.

Rangan et al (1988) are among the first to measure efficiency in the financial sector. Using DEA, they found that the average inefficiency of US banks to be 30%. They also concluded that this inefficiency is mainly due to pure technical inefficiency (wasting inputs) rather than scale inefficiency (non-constant returns-to-scale).

Also using DEA, Elyasiani & Mehdiان (1990a) found the average inefficiency of US banks to be much lower than above, of only 10%. In the same year, these two continued to apply SFA to find such value increased to 12% (Elyasiani & Mehdiان, 1990b).

Ferrier & Lovell (1990) are the first to compare the results between alternative methods (DEA vs SFA). Their average cost efficiency of US banks in 1984 from DEA and SFA were 83% and 79% respectively. They argued that such results did not meet the expectation that cost efficiency relative to non-parametric frontier is lower than that of parametric frontier (because noise is reported as inefficiency in non-parametric approach), so it means DEA frontier is more flexible to envelop data more closely than SFA frontier. However, Eisenbeis, Ferrier & Kwan (1996) did meet such expectation when SFA's efficiency is higher than DEA's.

Berger & Humphrey (1991) used TFA to measure efficiency of all US banks in 1984 to be 81%. Such result is higher than SFA's and lower than DEA's value from Ferrier & Lovell (1990) above. Instead of explaining for such difference results between methods, Berger & Humphrey (1992a) continued to measure efficiency at more than one point in time, thus becoming one of the first to do so.

Many later studies tried to use different methods on different points in time to measure banks' efficiency. Examples include Bauer, Berger & Humphrey (1993) and Resti (1996).

## ***2.3. Inputs/Outputs specification: Intermediation vs Production approach***

There are 2 main types of approaches in choosing outputs, inputs prices and costs:

Production approach views banks as producers which only use physical inputs of labor and capital to provide services like transactions and processing documents. Thus,

output is best measured by the number and type of transactions or documents processed for a given period like in Sherman & Gold (1985)'s and Kuussaari & Vesala (1995)'s studies. However, such detailed transaction data is difficult to obtain, so many researches use number of accounts for output instead, such as Berger, Hanweck & Humphrey (1987), Ferrier & Lovell (1990), Ferrier et al (1993). Rangan et al (1988) also measured output in terms of the total balances of deposits and loans. Only physical inputs are needed to provide services so only their prices (labor rates and capital rates) and their costs (operating cost) are included in the model (Berger, Leusner & Mingo, 1996).

Intermediation approach views banks as intermediaries which transfer funds between lenders and borrowers. Thus output should be measured as number of dollars intermediated in form of deposits, loans and other assets according to Berger & Humphrey (1991). They further stressed the dual characteristics of deposits: it is also an input, therefore its price (interest rate paid on deposits) and its cost (interest cost) will also be included in the model in addition to physical inputs prices/costs, thus the appropriate cost is total costs.

Nguyen (2008) stated in his study concerning 32 Vietnamese commercial banks from 2001-2005 to follow intermediation approach, but he only included inputs (labor, capital and deposits) in his model. Deposits is also an output, but surprisingly Nguyen specifically classified it as input, leaving no output as independent variables. Vu et al (2014) attempted to correct this omission by including an output (total asset) in their deterministic component. However, their dependent variable of cost is operating cost, which doesn't include interest cost, making it inappropriate for their intermediation approach for 30 banks from 2006-2012.

Vu & Turnell (2010) dealt with this problem by using 3 outputs (customer loans, other earning assets, actual value of off-balance sheet items) and 3 input prices (real wage, other non-interest expenses/fixed assets, interest expenses/total borrowed funds) to be regressed with total costs. The mean cost efficiency of Vietnam's banking sector found to be relatively high of 87%. They also concluded that bank ownership has insignificant effects on efficiency. However this research only investigated the pre-crisis period 2000-2006 of 56 banks in Vietnam, so their findings will not be accurate anymore. Their outputs also didn't include deposits, meaning they failed to capture the output characteristic of deposits. Similarly, Matousek, Nguyen & Stewart (2014) only saw deposits as input but not as output, thus such dual traits of deposits are not covered. One development is that they managed to capture the changes over the financial crisis, using data during 1999-2009 for 48 banks. They also found that large banks were more efficient than small and medium sized ones.

Phan & Daly (2014) further contributed to this topic by using more recent data of 26 banks during 2006-2012 which also covers the crisis's effect. Their model included 4 outputs (total loans, other earning assets, total deposits, liquid assets) and 2 input prices (price of funds, price of capital) and dependent variable of total costs. They found that state-owned banks are more efficient than private ones.

To the limited knowledge of the authors, so far, there is only Berger, Leusner & Mingo (1996) who attempted to deal with both production and intermediation approach. However, their study was about branch efficiency instead of bank efficiency. They also could not include interest rates on deposits – one of the fundamental independent variables in intermediation approach – due to collinearity.

### 3. Model selection and Variables explanation

Theoretically, according to Berger, Leusner & Mingo (1996), for studies concerned with evaluating the entire banks, intermediation approach is preferred because it is more inclusive and it captures the bank's role as a financial intermediary. An optimizing bank would minimize its total cost for a given output level, even if it means reducing interest cost at the expense of increasing operating cost. Such cost substitution can only be captured effectively by intermediation approach. This paper concerns about the efficiency of the entire banks rather than their branches. Therefore, intermediation approach is more appropriate, and hence applied in this study. Battese & Coelli (1995) SFA model is adopted in the form of cost frontier.

#### 3.1. Stochastic cost function

$$\begin{aligned} \text{Ln}(\text{TC}_{it}) = & \beta_0 + \beta_1 * \text{Ln}(\text{PL}_{it}) + \beta_2 * \text{Ln}(\text{PC}_{it}) + \beta_3 * \text{Ln}(\text{TL}_{it}) + \beta_4 * \text{Ln}(\text{TD}_{it}) + \beta_5 * \text{Year}_{it} \\ & + \beta_6 * \text{Ln}(\text{PF}_{it}) + \beta_7 * \text{Ln}(\text{OEA}) + V_{it} + U_{it} \end{aligned}$$

where  $\beta$  are unknown parameters to be estimated,  $_{it}$  is of the  $i$ -th bank in  $t$ -th time period,  $\text{Ln}$  is natural logarithm of,  $\text{TC}$  is total cost,  $\text{PL}$  is price of labor,  $\text{PC}$  is price of capital,  $\text{PF}$  is price of funds,  $\text{TL}$  is total loan,  $\text{TD}$  is total deposit,  $\text{OEA}$  is other earning assets,  $V$  are random variables assumed to be independent, identically distributed  $N(0; \sigma_v^2)$ , and independently distributed of  $U$ ,  $U$  are non-negative random variables assumed to account for the cost of inefficiency, and assumed to be independent, identically distributed as truncations at zero of  $N(Z_{it}\delta; \sigma_u^2)$ .

In intermediation approach, output should be measured as number of dollars intermediated in form of deposits, loans and other assets (aforementioned in sub-section 2.3). Thus, very simply and clearly, total loans, total deposits and other earning assets are used as output measures in the function. Producing more output will generally incur more cost, thus both  $\text{TL}$  and  $\text{TD}$  are expected to have positive signs. Other earning assets is calculated by subtracting fixed assets and non-earning assets (cash and cash deposited at SBV) from total assets. Being an output, the sign expected for  $\text{OEA}$  is also positive.

#### 3.2. Inefficiency model

$$U_{it} = \delta_0 + \delta_1 * \text{Own}_{it} + \delta_2 * \text{Age}_{it} + \delta_3 * \text{Ln}(\text{TA}_{it}) + \delta_4 * \text{DLR}_{it} + \delta_5 * \text{EAR}_{it} + \delta_6 * \text{Year}_{it} + W_{it}$$

where  $\delta$  are unknown parameters to be estimated,  $\text{Own}$  is bank ownership,  $\text{Age}$  is bank ages,  $\text{TA}$  is total assets,  $\text{DLR}$  is deposits to loans ratio,  $\text{EAR}$  is equity to assets ratio,  $W$  are random variables.

Bank ownership is used in terms of a dummy variable, which takes value of 0 if a bank is JSCB – joint stock commercial bank, or of 1 if a bank is SOCB – state-owned

commercial bank. State-owned enterprises, which include SOCBs, are generally believed to be less efficient than private corporations (JSCBs) because they have the governments to back them up even if they perform badly. Thus, this variable is expected to have positive sign, i.e. if a bank is SOCB (takes value of 1), it is expected to have higher inefficiency.

Bank ages is the years of operation of a bank. Banks with more years of operation will have more time to adjust, improve, and thus tend to have higher efficiency than younger ones. Hence, the expected sign for this variable is negative sign (inverse relationship between bank ages and inefficiency). Total assets represent the bank size. According to economies of scale, the bigger the bank, the more efficient it is. The expected sign for this variable is thus negative.

Deposits to loans ratio (DLR) is related to bank's efficiency by showing how well banks use input (deposits) to produce output (loans). A high value of DLR, i.e. deposits are much higher than loans, means that the bank is not able to make sufficient loans, thus reducing its profit and efficiency. Hence it is expected that this variable has positive sign.

EAR is the ratio of equity to total assets. It is a type of leverage ratio that gives us ideas about how much funds are from the bank itself (equity) and how much are from debt (deposits and other liabilities). High EAR means relatively low debt, and thus banks are not under the pressure to make much loans to pay for debts expense. This would lower the chance of encountering non-performing loans, thus reducing the cost for dealing with these bad debts, in turn would increase cost efficiency. Therefore, the expected sign for EAR is negative.

## 5. Results

$$\text{Ln(TC)} = 4.53 - 0.36*\text{Ln(PL)} + 0.019*\text{Ln(PC)} + 0.061*\text{Ln(TL)} + 0.024*\text{Ln(TD)}$$

(32.7) (1.72) (1.80) (2.09) (0.74)

$$- 0.33*\text{Year} - 0.077*\text{Ln(PF)} - 0.028*\text{Ln(OEA)}$$

(0.93) (2.57) (1.69)

$$U = -0.092*\text{Own} + 0.003*\text{Age} - 0.023*\text{Ln(TA)} + 0.057*\text{DLR} + 0.016*\text{EAR} + 0.027*\text{Year}$$

(2.20) (2.03) (1.45) (1.72) (1.38) (1.78)

The positive coefficient of TL suggests that the larger amount of loans a bank can make, the higher the cost it incurs. This is because of whenever banks make loans, they have to bear the provision expense. The coefficient of another output TD is also positive. However, such relationship cannot be statistically proven due to the statistical insignificance of the coefficient (t-ratio = 0.74 < 1.65). The negative and statistically significant coefficient of the last output OEA suggests the idea of more assets lead to lower cost. This is because these earning assets will generate more revenue, leading to reduction in our unit cost per revenue generated.

Bank ownership's sign is not as expected. Its negative coefficient suggests that SOCBs are more efficient than JSCBs. This may be due to the fact that SOCBs in Vietnam have very much larger sizes compared to many other small size JSCBs. Thus the bigger SOCBs, which are Vietcombank (VCB), Vietinbank (CTG), and BIDV (BID) in this study,

will benefit much more from economies of scale, having higher efficiency. In fact, these 3 SOCBs are the top most efficient banks found in this study.

The positive coefficient of bank ages is also not as expected. The sign suggests that more experienced banks are actually less efficient. This may be due to the old-fashioned, obsolete systems and practices of many Vietnamese banks. The older a bank is, the more reluctant it is when it comes to changes and updates. This is somewhat a culture of Vietnamese, especially with the generations 6x and 7x employees. Newer and younger banks are less prone to this problem. Their workforce mainly comprise of young adults, who have more educational qualifications and are more open to change compared to their seniors. Young banks also can adopt new, advanced organizational and technological systems more easily, while older banks cannot do this with ease since the systems that have existed for so long that they became the traditions of the banks themselves.

The negative sign of TA is as expected. However, this relationship cannot be statistically proven due to the statistical insignificance of the coefficient ( $t\text{-ratio} = 1.45 < 1.65$ ). Similarly, the positive coefficient of EAR is not as expected but its coefficient is statistically insignificant ( $t\text{-ratio} = 1.38 < 1.65$ ).

The positive coefficient of DLR is as expected. Its sign indicates that the higher the ratio, the more inefficiency there is, the less efficient a bank is. A high value of DLR, i.e. deposits are much higher than loans, means that the bank is not able to make sufficient loans, thus reducing its profit and efficiency. The positive coefficient of Year suggests that the cost inefficiency tends to increase during the 4-year period. This should be due to the high inflation rate in Vietnam during this period, which made the cost of everything higher, thus lowering the efficiency.

The estimated average cost inefficiency of Vietnamese banking system is 7.36%. The average cost inefficiency of 2011 is 2.24%, then increased gradually over the years to 5.91%, 9.12%, and 12.19% respectively. The most efficient bank is VietinBank (CTG) with average cost inefficiency of only 0.41% over 4-year period from 2011 to 2014. This bank is also the one having the lowest inefficiency value in all 4 years of 0.13%. This almost fully efficient value was obtained in 2011. MaritimeBank (MSB) is the least efficient bank with average cost inefficiency of 14.22% over 4-year period. MSB is also the one having the highest inefficiency value in all 4 years of 22.78%. This value was obtained in 2014. (See Appendix)

## **6. Implications and Conclusion**

The first obvious implication is that if commercial banks want to improve their efficiency, they need to increase their size and scale. Being the 3 biggest banks in terms of total assets, total equity, total loans, total deposits, number of employees, 3 SOCBs analyzed in this study – VCB, BID, CTG - are the most efficient banks. Other relatively big JOSBs, such as Eximbank (EIB) and Sacombank (STB) also tend to be more efficient than the smaller JOSBs. This is in line with Kraft & Tirtiroglu (1998)'s conclusion with Croatia banks. All the above variables representing the size and scale of banks should be

the areas that all banks should focus on. When a bank increases its size and scale, it will be able to benefit more from economies of scale, i.e. improve its cost efficiency.

However, not all kinds of bigger will lead to better. In fact, positive sign of PL suggests that banks with larger total loans tend to be less efficient. This is due to the high rate of NPL during this gloomy post-crisis period. Results also have shown another situation that banks with low deposit-to-loan ratio (DLR), i.e. banks with good utilization of their deposits to make loans, tend to be more efficient. So the lesson is, banks should make more loans than holding deposits, but at the same time banks should not recklessly offer loans, instead they need to be very careful in the loans-making process since the chance of encountering non-performing loans is high. Efforts need to be put in tightening the screening procedures and more focusing on monitoring. This will lower the probability of encountering non-performing loans, thus keeping efficiency from falling. On the other hand, banks also can raise their OEA in order to achieve higher efficiency. Some of these other earning assets include trading securities, investment securities, derivatives, etc...

One more important action banks can take is to invest in human resources. Negative sign of PL indicates that extra expenses invested in labor actually resulted in bigger raise in revenue and hence increase in profit as well as efficiency. Older banks need to break away from their obsolete habits and traditions. They need to embrace the new updates in practices and systems like the newer banks are doing. Constantly organizing trainings for the existing employees and recruiting young graduates are some of the musts.

All in all, while there are many things can be done to improve efficiency, this study found that banks should focus on increasing their sizes, especially earning assets, in monitoring carefully the loan-making process to avoid non-performing loans, in developing and investing in human resource, and in being open to changes and developments.

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### Appendix. Banks' Rankings

<b>Rank</b>	<b>Bank's Name</b>	<b>Average cost inefficiency</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
1	VietinBank (CTG)	0.004143200	0.0013260	0.0018924	0.0036993	0.0096551
2	Bank for Investment and Development (BID)	0.038696225	0.0055246	0.0195235	0.0468303	0.0829065
3	Vietcombank (VCB)	0.042427100	0.0057472	0.0237832	0.0529405	0.0872375
4	Mekong Development Bank (MDB)	0.062997025	0.0089031	0.0450553	0.0852815	0.1127482
5	National Citizen Bank (NVB)	0.064720450	0.0326825	0.0561826	0.1098580	0.0601587
6	Eximbank (EIB)	0.064725775	0.0080449	0.0441011	0.0793170	0.1274401
7	Sacombank (STB)	0.066820225	0.0135600	0.0518652	0.0826951	0.1191606
8	Asia Commercial Bank (ACB)	0.070261525	0.0221128	0.0515560	0.0870127	0.1203646
9	Saigon-Hanoi Bank (SHB)	0.070288450	0.0288032	0.0590318	0.0814502	0.1118686
10	Dong A Bank (DAF)	0.074448600	0.0113178	0.0481210	0.0939928	0.1443628
11	LienViet Post Bank (LVB)	0.074670675	0.0352037	0.0527671	0.0901280	0.1205839
12	Kien Long Bank (KLB)	0.075560450	0.0208038	0.0597496	0.0886874	0.1330010
13	Petrolimex Group Bank (PGB)	0.076043425	0.0215957	0.0531004	0.0930167	0.1364609
14	North Asia Bank (NASB)	0.079230650	0.0099660	0.0727558	0.1070434	0.1271574
15	Military Bank (MBB)	0.079786375	0.0320472	0.0646097	0.0928039	0.1296847
16	Vietnam Prosperity Bank (VPB)	0.081195050	0.0186684	0.0794311	0.1044151	0.1222656
17	Techcombank (TCB)	0.088696225	0.0257064	0.0762530	0.1133766	0.1394489
18	Nam A Bank (NAB)	0.090532825	0.0363236	0.0853768	0.1040942	0.1363367
19	An Binh Bank (ABB)	0.097165625	0.0250767	0.0834074	0.1187905	0.1613879
20	Ho Chi Minh Development Bank (HDB)	0.101518500	0.0515175	0.0958707	0.1098542	0.1488316
21	Maritime Bank (MSB)	0.142204925	0.0551203	0.1156960	0.1701847	0.2278187



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