CHAPTER II

LITERATURE REVIEW

A. Theoretical Framework

1. Wage

a. Definition

According to BPS (2015), wages are rewards received in the form of money or goods, which are paid by company/office/employer. Rewards in kind are valued at local prices. Wage in theoretical economics is the results received, both in the form of money and other uses wealth (human services). He also explained that income is the result of the sale of the factors of production that it has to the production sector (Ridwan, 2000).

The subsistence theory of wages by Adam Smith, states that in the long run, wages would tend towards that sum which is necessary to maintain a worker & his family. If wages were to rise above this subsistence level, the worker will be induced to have larger families resulting in more supply of the labor that will bring down wages to the original level. And the wage level would not fall below subsistence as “worker’s wages must be sufficient to maintain him.”

Ricardo later stated that the natural price of labor is that price which is necessary to enable the laborers to subsist and to perpetuate their race without either increase or diminution. Malthus reiterated that the wages were bound to remain at subsistence level, precisely because
any increase in wages would bring about an increase in the population, and the competition among the large labor force would tend to reduce wages.

Based on the opinions above, therefore that wages are rewards received in the form of money and others for the use of wealth (human services) as the maximum value that can be consumed by a person in a period.

b. Factors Affecting to Wage

Payaman (2001) mentions differences the wage rate occurs because of several things, namely:

1) Differences in wage rates, because basically the labor market it consists of several different labor markets and segmented labor markets. In the other hand, different jobs require different levels of education and skills also. The productivity of one's work is different according to the education and training that they obtain. This is clearly seen in income differences according to education level and according to work experience.

2) Second, wage rates in each company differ according to percentage of employee costs for all production costs. The smaller the proportion of employee costs to costs overall, the higher the wage rate.

3) Third, differences in wage rates can occur accordingly difference in proportion of company profits to sales. The greater the
proportion of profits to sales and the greater the absolute number of profits, the higher the wage level.

4) Fourth, wage rates differ because of different roles the entrepreneur concerned in determining prices. Wage rates in monopoly and oligopoly companies tend to be higher than wage rates in companies that are free competing.

5) Fifth, wage rates can vary according to size company. Large companies can obtain the benefit of "economic of scale" can be reduced prices, so dominate the market and tend to be better able to provide higher wage rates than small companies.

6) Sixth, wage rates can differ according to the level of efficiency and management of the company. The more effective the management of the company, the more efficient ways of using production factors, and the greater the wages that can be paid to employees.

7) Seventh, differences in abilities or strength of trade unions can also result in differences in wage rates. Unions that are strong in the sense of expressing reasonable reasons are usually quite successful in seeking wage increases. Wage rates in companies whose trade unions are strong, usually higher than wage rates in companies whose trade unions are weak.

8) Eighth, the wage level can also be different due to factors scarcity. Rarer is the workforce with skills certain, the higher wages offered by employers.
9) Ninth, the wage rate may differ due to the size of the risk or the possibility of getting into an accident in the work environment. The higher the possibility of getting a risk, the higher the wage level. The difference in wage levels is also from one sector to the sector other industries. This difference is basically caused by one or more of the nine reasons above. Likewise, one or more of the reasons above creates differences in wage rates in different regions. Differences in wage levels can also occur because of government interference such as determining wages different minimum.

2. Human Capital

a. Definition and Basic Assumption

Human capital is an economist's term for knowledge and expertise acquired by workers through education, training and experience. Human capital increases a country's ability to produce goods and services (Mankiw, 2003). According to Todaro and Smith (2011), human capital is a productive investment in people that includes knowledge, skills, abilities, ideas, health and location often resulting from spending in education, training programs in employment, and health care. The formation of human capital is the process of obtaining and increasing the number of people who have expertise, education and decisive experience of the economic and political development of a country. The formation of human capital is therefore associated with investment in humans and its development as
a creative and productive source (Jhingan, 2012). So, human capital is a productive investment in humans obtained through education, training and experience to increase the ability to produce goods and services.

The basic assumption of human capital theory is that someone can increase their income through increase education. Every additional one year of school means that on the one hand it increases the ability of work and the level of one's income but on the other hand delays the receipt of income for one year in attending the school. In addition to the delay in receiving, such income, people who continue their education must pay fees directly such as school fees, purchase of books and school supplies, additional transport money and others (Payaman, 2001).

In addition, Borjas (2016) states in human capital theory explains that potential earnings streams faced by a high school graduated which means a worker’s education level that maximize the present value of lifetime earnings. Therefore, are valued only because they increase earnings. A college education obviously affects a person’s utility in many other ways. Therefore, are valued only because they increase earnings. A college education obviously affects a person’s utility in many other ways. Figure 2.1 illustrates the economic trade off involved the worker’s decision.
Potential Earnings Streams Faced by High School Graduate

Based on figure 2.1 show the age earnings profile which is the wage path over the life cycle. Indicates that going to college involves two different types of cost. A year spent in college is a year spent out the labor force, so that a college education forces the workers to forget some earnings. Thus, potential earnings stream faced by a high school graduated. A person who quite school after getting high school diploma get lower earn rather than a person who goes to collage incurs higher earn that he get to retirement age.
Figure 6.2 indicates the wage schooling locus gives the salary that a particular worker would earn if he completed a particular level of schooling. A worker who graduates from high school will get lower earn than a worker who graduates from college. The wage schooling locus is the salary for each level of schooling is determined by the intersection of the supply workers with that particular schooling and the demand for those workers.

The wage schooling locus shown in figure 6.2 has three properties:

1. The wage schooling locus is upward sloping, which means a worker who have higher education will earn more as long as educational decisions are motivated only by financial gains.

2. The slope of wage schooling locus explains how much a workers earnings would increase if additional year of schooling. The slope
will be closely related to any empirical measure of “the rate of return” to school.

3. The wage schooling locus is concave, it means the monetary gains from each additional year of schooling decline as more schooling is acquired.

b. Human Capital Approach

Investments in the field of human capital are analogous to such conventional investment in physical capital. After doing initial investment, a higher income stream in the future can be obtained from the expansion of education and health improvement. Thus, a level return on investment from both of these things can be known and compared with returns on other investments. This is done to estimate the present value discounted from the increase in income flow that occurs because of the investment, then compare it with direct and indirect.

The basic approach of human capital focuses on ability indirectly from health and education to improve welfare through increased income. The value of human capital as an investment, future income gains from education must be compared with the total costs needed to obtain that education. Tuition fees include school fees or other expenses specifically related to education such as books and school uniforms, and no fees directly, especially lost income because students can not work while attending school.
According to Todaro and Smith (2011), formally, the income gains obtained can be written as follows, where E is income with additional education, N is income without additional education, t is year, and I is the discount rate, and the sum is during the expected productive age:

$$\sum \frac{E_t - N_t}{(1 - t)^t}$$

c. Criteria of Human Capital Investment

One of the most intriguing problems is estimating investment productivity in the field of human capital formation, especially education. Economists suggest the following criteria in (Jhingan, 2012):

1) Criteria for rate of return Education as an investment has two components: future consumption components and components future income. Investment in skills and knowledge increases future income, while satisfaction gained from education is a component consumption. As a component of consumption that is about a nature nonetheless, education is a source of future uses which is not included in the national income at all measurable. So in calculating the return on investment in education, the component of future income must be really noticed. The method used is based on the comparison between the income of the average person living more educated with less people educated, who work in the same profession.
2) Criteria for the contribution of education to gross national income
According to these criteria, investment in education determined by its contribution to raising income gross national or formation of physical capital in one period.

3) Criteria for residual factors Solow, Kendrick, Denison, Jorgenson and Griliches, Kuznets, and other economists have tried to "measure how much the proportion of gross national product increases in one period, can be related to capital and labor inputs that can be measured, and how proportion the increase in Gross National Income can be ascribed to other factors, which are often classified as "residuals". The most important of these residual factors are education, research, training, economies of scale and other factors that affect productivity human.

3. Mincerian Model
Earnings is the cornerstone of empirical economics. It is the framework used to estimate the returns to schooling, returns to schooling quality, and to measure the impact of work experience of male-female wage gaps. It is the basis for economic studies of education in developing countries and has been estimated using data from a variety of countries and time periods. Recent studies in economic growth use the Mincer model to analyze the relationship between growth and average schooling levels across countries (Mincer, 1974).
In one equation, Mincer’s framework captures two distinct economic concepts: (a) a pricing equation or hedonic wage function revealing how the labor market rewards productive attributes like schooling and work experience and (b) the rate of return to schooling which can be compared with the interest rate to determine optimality of human capital investments. Assuming stationarity of the economic environment, the analyst can use the Mincer model to identify both skill prices and rates of return on investment. This happy coincidence only occurs under special conditions, which were approximately valid in the 1960 Census data used by Mincer (1974). Unfortunately, these conditions have been at odds with data ever since. As a result, the widely used Mincer model applied to more recent data does not provide valid estimates of returns to schooling, nor do related studies that associate a rising college - high school wage differential with an increase in the return to schooling. (Murphy & Katz, 1992 and Murphy & Welch, 2006).

The Mincer's model has applied since 1974. In this model using the theory of human capital investments which are used to discussing the distribution of income. Variables used in the human resources, namely schools, income and investment post-graduate school. This investment compare schools and post schools (Bunzel, 2008).

The Mincer regression model explains in principle, there is a strong and clear relationship between market wages, education and experience. The standard econometric form of Mincer Wage Regression is as follows:
\[ \log W_t = \log w_t = \beta_0 + \beta_1 \text{Schooling} + \beta_2 \text{expt} + \beta_3 \text{Expr2} + \epsilon_t \]

\(W\) is wages, \(\text{Schooling}\) is school time and \(\text{exp}\) is total time from work experience.

a. The Theoretical Foundations of Mincer’s Earnings Regression

The Mincer (1958, 1974) model specifies

\[ \ln[w(s, x)] = \alpha s + \beta_0 + \beta_1 x + \epsilon \]

Where \(w(s, x)\) is wage at schooling level \(s\) and work experience \(x\), \(\rho\) is the “rate of return to schooling” (assumed to be the same for all schooling levels) and \(\epsilon\) is a mean zero residual with \(E(\epsilon|s, x) = 0\).

b. The compensating differences model of Mincer (1958)

The first Mincer model (1958) uses the principle of compensating differences to explain why persons with different levels of schooling receive different earnings over their lifetimes. This model assumes that individuals have identical abilities and opportunities, that there is perfect certainty, that credit markets are perfect, that the environment is perfectly certain, but that occupations differ in the amount of training required. Schooling is costly because individuals forego earnings while in school, but it entails no direct costs. Because individuals are assumed to be ex ante identical, they require a compensating differential to work in occupations that require a longer training period. The size of the compensating differential is determined by equating the present value of earnings streams net of costs associated with different levels of investment.
Let $w(s)$ represent the annual earnings of an individual with $s$ years of education, assumed to be constant over his lifetime. Let $r$ be an externally determined interest rate and $T$ the length of working life, which is assumed not to depend on $s$. The present value of earnings associated with schooling level $s$ is

$$V(s) = w(s) \int_s^T e^{-rt} \, dt = \frac{w(s)}{r} e^{-rs} - e^{-rT}$$

An equilibrium characterized by heterogeneous schooling choices requires that individuals be indifferent between schooling levels. Allocations of people to different schooling levels are driven by demand conditions. Equating the earnings streams associated with different schooling levels and taking logs yields

$$\ln w(s) = \ln w(0) + \ln \left( \frac{1 - e^{-rT}}{1 - e^{-r(T-s)}} \right) + rs$$

The second term on the right hand side is an adjustment for finite life, which converges to zero as $T$ gets large.

Mincer (1958) observed that this simple framework yields a number of interesting implications: (i) For large $T$, the coefficient on years of schooling in a Mincer regression equals the interest rate, (ii) people with more education receive higher earnings, (iii) the difference between earnings levels of people with different years of schooling is increasing in the interest rate and age of retirement, and (iv) the ratio of earnings for persons with education levels differing by a fixed number of years is roughly constant across schooling levels.
If we define the internal rate of return to schooling as the discount rate that equates the lifetime earnings streams for different educational choices, then the internal rate of return equals the interest rate, \( r \). Combined with implication (i), the coefficient on years of schooling in a Mincer regression yields an estimate of the internal rate of return. This coefficient also reflects the percentage increase in lifetime earnings associated with an additional year of school when \( T \) is large.

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4. **Education.**

a. **Definition.**

According to Law Number 20 of 2003, education is a business conscious and planned to realize the learning atmosphere and learning process so that students actively develop their potential to have religious, spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and country.

According to Webster's New World Dictionary (1962) in Sagala (2013) education is a training process and development of knowledge, skills, thoughts, characters, and so on, especially through formal schooling. Education can be understood as a process of training participant students to develop knowledge through a number of learning experience in accordance with their fields and minds, so that students have a superior character upholding ethical values in interacting with the community as part of their service and in fulfilling their life needs as well as their families (Sagala, 2013).

In a simple and general sense the meaning of education as a human effort to grow and develop the carrying potential of both physical and spiritual in accordance with the values that exist in society and culture (Ihsan, 2011).

From some of the above meanings, as conclusion that education is a conscious effort to develop knowledge and innate potential
through the process of training and developing knowledge, skills, thoughts, characters.

b. Level of Education

1) According to the Law of the Republic of Indonesia No. 20 years 2003 concerning the national education system the level of formal education consisted of basic education, secondary education, and higher education. The level of education is the stage of continuous education, which is determined based on the level of development of students, the complexity of teaching materials and how to present teaching materials. Ihsan (2013) describes the level of school education consisting of basic education, secondary education, and higher education.

2) Basic education is education that provides knowledge and skills, fostering the basic attitudes needed in society, and preparing students to attend secondary education. Basic education in principle is education that provides basic provisions for the development of life, both for personal and for society. Therefore, every citizen must be given the opportunity to obtain basic education. This education can be in the form of school education or out-of-school education, which can be ordinary education or extraordinary education. The basic education level is Elementary School.

3) Secondary Education is education preparing students to become
members of the community who have the ability to make reciprocal relationships with the social, cultural and natural environment, and can develop further capabilities in the world of work or higher education. Secondary education consists of general secondary and secondary education vocational. General secondary education is held besides to prepare students for education high, also to enter employment, education vocational middle schools are held to enter employment or take professional education at a higher level. Secondary education can be ordinary education. Secondary education level is junior high school, high school and vocational school.

4) Higher education is education that prepares students to become members of the community who own high level of ability that is academic or professionals so they can apply, develop and creating science, technology and art in the framework of national development and enhancing human welfare.

c. Educational functions and objectives according to the Law of the Republic of Indonesia no. 20 years 2003 national education functions to develop capabilities and form a dignified national character and civilization in order to educate the life of the nation. According to Balantine (in Siswoyo, 2013), the function of education for the community includes:

1) Socialization function.
2) Selection, training and allocation functions.

3) The function of innovation and social change.

4) Personal and social development functions.

While the purpose of education according to the Law of the Republic of Indonesia no. 20 of 2003 which aims to develop the potential of students to become human who have faith and fear of the Almighty God, are noble, healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens. Langeveld (in Siswoyo et al 2013) suggests a series of educational goals, which are interlocked as follows: general purpose, specific goals, incomplete goals, temporary goals, incidental goals, and intermediary goals.

General Purpose is the ultimate goal and constitutes overall of goals to be achieved by education. Of Langeveld general purpose or final destination finally is maturity, one of the characteristics is having lived with independent individuals.

1) Special Purpose is the specialization of the above general objectives, basic variety, for example age, gender, intelligence, talents, interests, socio-cultural environment, stages developments, demands on job requirements and so.

2) The incomplete purpose of the purpose which only concerns some aspects of human life. For example aspects psychological, biological, sociological only one aspect psychological, for example, only develops emotions or just mind.
3) Temporary purpose is the intended purpose only for a while, whereas if it's a temporary goal already achieved, then abandoned and replaced with another purpose. For example, parents want their children to stop smoking, minus his allowance. If you have no smoking, then abandoned and replaced by another purpose for example, so you don't like staying up late.

4) The purpose of the intermediary, namely the purpose of the intermediary for the purpose other basic ones. For example, children area ccustomed to sweeping the yard, meaning that he will have it later responsibility. Get used to dividing tasks in children one another, also means training responsibility with the intention that they will later have a sense of responsibility.

5) Incidental goals, namely goals achieved at times certain, instantaneous, spontaneous. For example the teacher reprimands the child who plays rough when playing soccer, peopleparents ask their children to sit politely, and so all of them are incidental goals are immediately.

In Wannakairoj (2013) his study examines the effect of education and experience on wages of workers in Thailand used the Mincer wage regression, especially urban and rural labor market by using the ordinary least squares (OLS) regression model of Mincerian wage equation. In fact the additional year of education has strong correlations with percentage change in wage. In addition, Pereira (2004) used the Mincer wage equation to find the returns to education in Portugal. They support that
using the Mincer equation in its simpler form seems to give an approximate value for the total return to education.

5. Experience.

a. Definition.

Experience is an event that has been experienced (lived, felt, borne etc.) either long or just happened. Experience can be the most important of the experience is the lessons or lessons to be learned. Experience also the process of getting knowledge or skill from doing, seeing, or feeling things. In the Indonesian dictionary (1993) experience is interpreted: (n) ever experienced (lived, felt, and borne, and so on). Various experiences can happen to everyone, funny, moving, sad, exciting, and proud experience. According to Roth, Wolff Michael & Jornet (2014) stated that experience is one of the most used terms in (science) education, and it is recognized as being related to learning (education). Yet what experience is and how it is related to learning and change remains untheorized.

Pine & Gilmore (1998) argue that experience is an event that happens and bends each individual personally. According to Kotler (2005) experience is learning that affects changes in a person's behavior. Whereas Irawan (2000) experience is a learning process that affects changes in behavior individual person. Also experience is a factor that can affect one's observations in behaving and can be obtained of all his actions in the past or can also be studied, because
with learning someone can gain experience (Swastha, 1990). In the Indonesian dictionary (1984) it is stated that work experience is defined as an activity or process that has been experienced by someone when earning a living to meet their daily needs. There are several factors that influence work experience employees, including:

1) Personal background, including education, courses, training, work. To show what someone has done in the past.

2) Talent and interest, to estimate one's interests and capacity or abilities.

3) Attitudes and needs to predict one's responsibilities and authority.

4) Analytical and manipulative abilities for learning assessment and analyzing abilities.

5) Technical skills and abilities, to assess abilities in the implementation of technical aspects of work (Handoko, 2010).

Through the years, many research proved that work experience has a significant role on the worker wages. This part of the literature review will illustrate impact experience improvements on the wages.

Saqib et al (2016) noticed the relation between education and experience on wages at Khyber Pakhtunkhwa, Pakistan. They used cross-sectional survey and questionnaire design. Furthermore, Saqib and his colleagues states that education, experience increase earnings.
6. Age

In the studio demographics are calculated according to the last recurring period. The age structure of the population, according to WHO is divided into three major groups, namely:

1) Young people, namely residents under the age of 15 years or age group 0-14 years.
2) Productive age population, namely residents aged 15-59 years.
3) Elderly population, namely residents aged 60 years and over.

According to the Central Bureau of Statistics, it is needed information about the date, month and year of birth’s respondent. Age calculation must always be rounded down or also called age, according to the last birthday. If the date, month and year of one’s birth are unknown, the enumerator can connect with important events either national and regional.

7. Health Status

a. Definition

In 1948 World Health Organization (WHO) defined health as “a state of complete physical, mental and social well-being, and not merely the absence of disease”. Health can be considered in terms of a person’s body structure and function and the presence or absence of disease or signs (health status) their symptoms and what they can and cannot do i.e. the extent to which the condition affects the person’s normal life (quality of life).
In general, health is a person’s feeling prosperous physically, mentally and socially, which enables the person to live a productive life both socially and economically. This definition is the same as the definition from WHO (1947). But, according to While (1977) health is the condition in which at the time of examination by an expert has no complain or does not have any clue or sign of diseases or disorder. In its development, WHO divides health into two, namely physical health and mental health. The physical health has the relation with physical, mental and social health. Mental health is a good condition. The person who has good mental health will realize his own skill, can face the normal stress, be more productive and happy at work, also have a good contribution to his community. According to Notoatmodjo (2007) the health of a person is not only measured by physical, mental and social aspects, but also by the productivity.

Health is an important thing in daily life because health can affect the physical fitness and appearance. Thus, every person really wants to live healthy and happy. To keep healthy, it should be based on two aspects of behavior towards a healthy lifestyle, namely:

1. The implementation of a clean and healthy life. Notoatmodjo (2007) said the application of living behavior have the correlation with a person’s activity to keep and increase his/her health condition.
2. The behavior of a clean and healthy life based on Indonesian Ministry of Health (2009). The behaviors of clean and healthy life are the embodiment of a healthy paradigm in a culture.

The effects of education and health status on wages were estimated using a wage model based on Mincer (1974). In this model the natural logarithm of wages is expressed as a function of education and health status. These factors have been observed in the other studies to have a statistically significant on wages. Furthermore, Cai (2007) used a self-reported measure of general health to estimate the effect of health on male wages. He found that good health is positively related to wages.

8. Area of Living.

a. Definition

According to civil law article 17 of domicile or area of living of is where a person considered to be always present doing his rights and fulfilling its obligations, even though he resides elsewhere. According to the book of the law of civil law, the residence was often being his home, sometimes his city. Therefore any person is deemed always to have had a place to live where he did his daily activities or where he live staple. Meanwhile based in the large Indonesian dictionary area of living is is a legitimate place of residence of the person or official residence. From the sense of the above it can be concluded that the domicile is a legitimate place to live and serve as a place of residence.
Domicile is a translation of domicile meaning place to live. According to Masjchoens (2000) domicile or place of residence is a place where someone is considered present regarding the matter of carrying out his rights and fulfilling his obligations, even though in reality he is not there. According to The Civil Code of residence is often his home, sometimes his city. Therefore domicile is a house or city where a person performs his rights and obligations.

Besides education, experience, age, health status, wages also influenced by area of living. Furthermore, Nafisah (2017) used multiple linear regression by using mincerian earnings model as result area of living has a positive impact on wages which means labor in urban area get a higher wage rather than rural area.

B. Previous Study

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C. The Theoretical Framework

Based on those theories and previous study, it can reveal the effects independent variables such as education, experience, age, area of living and also health status toward dependent variable or wage.
Based on the objectives, problem statements, and background of this study, the hypotheses are stated as follows:

1. H1: Expected education has a positive impact on wage in the manufacturing sector.
2. H2: Expected experience has a positive impact on wage in the manufacturing sector.
3. H3: Expected age has a positive impact on wage in the manufacturing sector.
4. H4: Expected health status has positive impact on wage in manufacturing sector.
5. H5: Expected area of living has positive impact on wage in manufacturing sector.