CHAPTER III

RESEARCH METHODOLOGY

A. Subject of Research

The subject of this research is student who study in Universitas Kristen Duta Wacana, Universitas Sanata Dharma, and Universitas Atma Jaya Yogyakarta. Those universities are following Christian principle in order to learn and teach.

B. Type of Data

The types of data that used in this research is primary data. Which primary data is an original data or the new data that obtained or collected directly by the author on 11th of March 2019 until 21st of March 2019. The primary data in this study obtain by spreading the questionnaire using Google Form.

C. Technique of Sampling

The sampling technique that used in this research is purposive sampling method. Purposive sampling method is a sampling techniques that considers several requirements for the source of data taken. The author used this method because there were reasons like the limitation of time, cost, and also energy. There are several requirements needed in order to take a sample, as follows:

1. Non-Muslim

2. Women (16 – 30 years old)

3. Actively using halal labelled cosmetics in daily life

4. Take a study in Universitas Kristen Duta Wacana, Universitas Sanata Dharma, and Universitas Atma Jaya Yogyakarta.

Because there is no information about the exact number of students in Universitas Kristen Duta Wacana, Universitas Sanata Dharma, and Universitas Atma Jaya Yogyakarta are not known yet, then the expected number of students during the year of research using adaptive expectation where number of students in 2017 is the same as students in 2018. Determination of the sample using adaptive expectation in Zahroh (2016), namely:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = number of samples to be studied

N = number of students

e = per cent leeway carefully situations due to lack of sampling error is still tolerated (set at 10%).

Based on Bureau of Cooperation and Public Relations from selected universities, the total student in Universitas Kristen Duta Wacana is 5.000, the total student in Universitas Sanata Dharma is 10.728, and the total student in Universitas Atma Jaya Yogyakarta is 11.107. So the total student from those three universities are 26.835. Based on the information above, the author could calculate the total sample needed for this research by using Slovin formula:

$$n = \frac{26.835}{1 + 26.835 \ (10\%)^2}$$

$$n = \frac{26.835}{269,35}$$

$$n = 99,6$$

$$n = 100 \text{This result obtained from the Slovin}$$

This result obtained from the Slovin formula, the number of respondent needed is 100 from the total population of those three universities.

D. Data Collection Technique

To collect the data in this research, researcher use questioners to distribute the questions to the respondent. Questioner is a written statement that is used to obtain information to respondent in terms of reporting about the person or the things that the key knew is called a questionnaire (Arikunto, 2006 in Fatimah, 2016). While a questionnaire is a technique of collecting data conducted by giving a set of questions or a written statement for respondent to answer.

E. Variable Definition Operational Research

This research use two variables, the dependent variable and independent variables. The dependent variable in this research is Willingness To Pay, meanwhile the independent variables in this research are: age, education, income, purchase frequency, consumers' awareness and religious belief.

1. Dependent Variable

According to Kamaruddin (2012), Willingness To Pay is the maximum amount stated by individuals where they are willing to pay for an item or service. Consumer may not be happy to pay for certain halal products or services but they are willing to pay a certain amount of money rather than going without the halal products or services.

2. **Independent Variable**

   a. **Product Knowledge**

   Product knowledge in this research means the consumers' knowledge related to knowledge about product characteristics, consequences of using products and value (level) of satisfaction to be achieved by products.

   b. **Promotion**

   Promotion in this research means an activity from cosmetics' company that communicates the usefulness and benefits of a product and persuade the consumer to buy the product.

   c. **Consumers' Awareness**

   The meaning of consumers' awareness in this research is determined by how aware the respondent about the ingredient of the cosmetics, halal labelled cosmetics and also the halal certification of the products.

   d. **Purchase frequency**

   The frequency of purchasing halal cosmetic or how many times a respondent purchase a halal cosmetic in a recent month.

   e. **Income**

   Income level in this research means the amount of income in a month that received by student. In this research the level of income for student is determined by the amount of pocket money that received per month.

Table 3. 1
Indicators and Instruments of Variables

Variables	Operational Definition	Indicators	Instruments
Product Knowledge (X1)	Insights that consumers have about a product both the usefulness and the benefits of the product.	1. Product quality insight 2. Product safety insights 3. Knowing the product content	1. Knowing the quality of a halal product 2. Knowing the safety standards for consuming a product 3. Knowing the illegitimate elements in cosmetics
Promotion (X2)	An activity that communicates the usefulness and benefits of a product and persuades the target consumer to buy the product.	1. Advertising 2. Sales promotion 3. Event and experiences 4. Mouth to mouth	1. Knowing cosmetics labeled halal from influencers on social media 2. Knowing cosmetics labeled halal from sales promotions 3. Knowing cosmetics labeled halal from activities or events that I have visited 4. Knowing cosmetics labeled halal from friends / friends / family
Consumers' Awareness (X3)	Consumer awareness of the halal label on cosmetic products	1. Knowledge of cosmetics labeled halal 2. Awareness of halal labels on cosmetics 3. Knowledge of government support	1. Know that there are halal labels on cosmetics 2. Recognizing the existence of halal labels on cosmetic products sold on the market. 3. Knowing that the Indonesian government supports halal labels
Purchase Frequency (X4)	The frequency of purchasing cosmetics labeled halal in the past month.	1. The frequency of purchasing cosmetics labeled halal 2. Satisfaction with halal	1. Buy halal labeled cosmetic products within a month 2. Knowing the level of satisfaction for halal labeled

			labeled cosmetic products 3. Repeated purchases	cosmetic products 3. Having a desire in the future to make product purchases repeatedly.
Income (X5)	Consumer income for halal labeled cosmetic products per month.	1. Sufficient 2. Allocation of income to cosmetic products 3. Saving	1. Feel enough with the income earned 2. Can allocate income to cosmetic products 3. Can save with all expenses in a month
Willingness to Pay (Y)	The willingness of consumers to issue benefits for the goods or services they get.	1. Willing to pay in normal price 2. Willing to pay more 3. Willing to pay much more expensive	1. I am willing to spend money to pay for halal logo cosmetics 2. I am willing to pay more for cosmetics labeled halal compared to cosmetic products without the halal logo 3. I am willing to pay far more for cosmetics labeled halal compared to cosmetic products without the halal logo

F. Data Analysis Method

Data analysis method is a technique in purpose to analyse the obtained data in questionnaire. Analyse data is very important because the raw data from questionnaire would be meaningless if the data itself is not analysed. In this research, all the data are gained from the result of questionnaire and test in the form of number. All the data in this research are analysed quantitative.

1. Characteristics of Respondents

The characteristics of respondents used to show and represent the identify of respondents in this research using SPSS version 20. The characteristics of

respondents in this research consist of tabulation of frequency distribution and percentage. The characteristics of respondents in this research are concerned on age, university, religion, marital status, income, and education. And also this research describe the duration of use and price perception of halal labelled cosmetics.

2. Contingent Valuation Method (CVM)

This research use Contingent Valuation Method (CVM) is a directly survey method to ask the students about their willingness to pay for halal cosmetics which include skincare, body & oral care cosmetics, makeup, hair care and fragrance in Universitas Kristen Duta Wacana, Universitas Sanata Dharma and Universitas Atma Jaya Yogyakarta.

In obtaining the value of Warding Willingness to Pay consumers of cosmetics products for the existence of halal certification, the Contingent Valuation Method (CVM) method was used. According to Fauzi (2004) in Nuriana (2013), in the operational phase the application of the CVM approach has five stages, namely:

- Make a Market Hypothesis

The scenario that used in this research is:

"Since 2005, cosmetic products that highlight brand image as halal cosmetics products have started to be in great demand by the public. To get the halal logo in the cosmetic packaging, cosmetic companies must pass a series of halal certification by LPPOM MUI. At present, circulating cosmetics are vulnerable to containing substances that are not halal and

also dangerous which should be watched out for. The use of cosmetics with ingredients that are not halal and dangerous (mercury, lard, collagen, etc.) in a long period of time can harm and damage the skin so it is feared that it can cause skin cancer."

Based on the above scenario, it can give an overview to the respondents regarding the placement of halal certification in the product as an effort to guarantee halalness to consumers. The WTP value of halal certification will be known through questions raised to the respondent the maximum price that consumers are willing to pay for halal labelled products.

- Get the Bidding Value

The bidding value will be obtained through a direct survey in the form of a questionnaire using the open ended question technique. The open ended question is done by giving open questions to respondents about what value they want to pay to get halal labelled cosmetic products. Respondents will respond directly to the maximum value that is willing to be paid to obtain halal labelled products.

- Estimate Mean of Willingness to Pay

The estimation of the value of WTP is obtained through the average (mean) of the amount of auction value that has been obtained from the second stage divided by the number of respondents. Average calculation formula:

$$EWTP = \sum_{I=1}^{n} Wi$$

Where:

EWTP   : estimate mean of WTP

Wi   : the value of WTP to-i

n   : total respondent

I   : respondent to-I that willing to pay (= 1,2,….n)

If there is a value that deviates from another value (outlier), then the value

is not included in the calculation.

- Estimate the Bid Curve

The bid curve in the study correlates the willingness to pay value that the

respondent is willing to pay with the cumulative frequency of the number

of respondents who are willing to pay more for halal certification and

labelling

- Aggregating Data.

Adding data is a process where the mean value obtained from step three is

converted to the population in question using the formula:

$$TWTP = \sum_{t=0}^{n} WTPi \, ni$$

Where:

TWTP   : total WTP

WTPi   : WTP individual sample to-i

ni   : total sample to-i

I   : respondent to-I that willing to pay (= 1,2,….n)

3. **Description of Research Variables**

Description of research variables has aim to describe the data that has been collected related to respondent's approval of the research variable. In this research the data are being grouped, sorted and simplified then it much easier interpreted. To be interpreted according to the data obtained, the data will be grouped into categories according to the *Likert scale*. The estimation of this study used 4 *Likert scale* that is:

$$Range\ of\ value = \frac{(\text{Max. Value} - \text{Min. Value})}{\text{Total Value}}$$

$$Range\ of\ value = \frac{(4-1)}{4} = \frac{3}{4} = 0{,}75$$

Based on the formula above it determines the interval value, the interval scale shows in Table 3.2:

Table 3. 2
Perception Scale Estimation

Interval	Scale
1 – 1,75	Strongly Disagree
1,76 – 2,50	Disagree
2,51 – 3,25	Agree
3,26 – 4.00	Strongly Agree

Source: Baroroh, 2008

From table 3.2 above, it explains the perception scale estimation that devided into 4 Likert scale. And this scale used to calculate the variables based on respondent perception.

G. Research Model

To analyse Willingness To Pay (WTP) of students in Universitas Sanata Dharma and Universitas Atma Jaya Yogyakarta can be formulated into:

WTP = f (Knowledge, Inc, Purfreq, Aware, Promotion)

Then the function is expressed in the form of WTP relationship with Age, Edu, Inc, Purfreq, Aware and Religious then:

WTP = β_0 + β_1 Knowledge + β_2 Promotion + β_3 Aware + β_4 Purfreq + β_5 Inc + e

Where:

WTP = Willingness to Pay

β_0 = intercept

β_1… β_6 = regression coefficient

Knowledge = knowledge of product

Promotion = promotion of product

Aware = consumers' awareness

Purfreq = purchase frequency

Inc = income

e = error term

H. Instrument Test

1. Validity Test

Validity test is the validity of the measuring instrument used. the instrument said to be valid means that the measuring instrument used to obtain the data is valid and can be used to measure what should be measured (Sugiyono, 2004) in (Basuki, 2014). Thus, a valid instrument is a truly appropriate instrument for measuring what is to be measured. The basic decision in making validity test are:

a. If the significance value < 0.05, then the instrument is valid.

b. If the significance value > 0.05, then the instrument is invalid.

2. Reliability Test

Reliability testing is useful for determining whether an instrument (questionnaire) can be used more than once, at least by the same respondent who will produce consistent data. In other words, instrument reliability characterizes the level of consistency. Reliability test can be done by using Cronbach's Alpha, the basic decision in making reliability test are:

a. If the value of Croanbach's Alpha > 0.6, then the questionnaire items are reliable.

b. If the value of Croanbach's Alpha < 0.6, then the questionnaire items are unreliable.

I. Classical Assumption Test

1. Multicollinearity Test

This multicollinearity test aims to test whether the regression model found a correlation between independent variables. The presence or absence of multicollinearity can be seen from the coefficients of each independent variable. A good regression model should not have a correlation between independent variables. How to detect whether or not there is multicollinearity in the regression model is:

a. R^2 is quite high (0.7-0.1), but the t-test for each regression coefficient is not significant.

b. R^2 is a sufficient condition, but is not needed for multicollinearity. Because at low $R^2 < 0.5$ can also occur multicollinearity.

c. Regression of the independent variable X with other independent variables, then R^2 is calculated using the F test;

If F calculated > F table means that Ho is rejected, and there is multicollinearity.

If F calculated < F table means that Ho is accepted, and there is no multicollinearity.

The problem of multicollinearity can also be seen in the tolerance value and inflation variance factor (VIF) in the regression analysis in SPSS16. If the tolerance value is greater than 0.1 and less than 10 VIF, there is no problem with multicollinearity.

2. **Heteroskedasticity Test**

Heteroscedasticity test aims to test whether the regression model occurs inequality of residual variance from one observation to another. If the residual variance from observations with other observations remains, it is called homoskedasticity and if the residual variance from observations for different observations is called heteroscedasticity. A good regression model is a model that has homocedasticity or did not happen heteroscedasticity.

How to detect the presence of heteroscedasticity using the glejser test. Data can be said to be homoskedasticity or not exposed to heteroscedasticity, and vice versa if the significance value is < 0.05, then the data can be said to be heteroscedasticity.

3. **Normality Test**

The normality test is used to test whether the residual value is normally distributed or not. A good regression model is a model that has a residual value that is normally distributed.

The way to detect it is to look at the spread of data on the diagonal source in the P-P Normal graph. The standardized regression plot is the basis for decision making. If it spreads around the line and follows the diagonal line, the regression model is normal and feasible to be used to predict the independent variable and vice versa.

Another way is to use the normality test from the Kolmogorov Smirnov One Sample test. The test criteria are as follows:

a. If the value is Significant (2-tailed Sig Asym) > 0.05, then the data distribution is normal.

b. If the value is Significant (2-tailed Sig Asym) < 0.05, then the data is not normally distributed.

J. Hypothesis Test

1. Parameter Individual Test (t-test statistic)

T test statistics basically show the extent to which the effects of explanatory variables / independent variables individually explain variations in the dependent variable. In this test we assume other variables in constants. The T test uses the following hypothesis:

$H0 : \beta1 = \beta$

$H0 : \beta1 \neq \beta$

βi is the first independent coefficient variable that is the hypothesis value parameter. The variable value is greater than t table, then H0 is rejected. This shows that the independent variables have a significant effect on the dependent variable. The coefficient t is formulated as follows:

$$t\ calculated = \frac{(\beta1 - \beta)}{sb}$$

While:

$\beta1$ = free coefficient to-i

β = hypothesis value is zero

Sb = the standard deviation of the independent variable to-i

2. **Significance Simultaneous Test (F test)**

The F test statistic basically shows whether all the independent variables included in the model have an influence on the dependent variable. The H0 hypothesis to be tested is whether all parameters in the model are zero, or:

H0: b1 = b2 = ……. = bk = 0

That is, are all independent variables not significant to the explanation of the dependent variable. The alternative is the hypothesis (Ha), not all parameters are simultaneously equal to zero, or:

H0: b1 $\neq$ b2 $\neq$ ……. $\neq$ bk $\neq$ 0

That is, all explanatory simultaneous variables are significantly independent of the dependent variable. To test the hypothesis using F statistics with criteria decisions are follows:

a. Quick view: when the value of F is greater than 4, H0 can be rejected at a confidence level of 5%. In other words, we accept the alternative hypothesis, which states that all independent variables simultaneously and significantly affect the dependent variable.

b. Comparing the results of the value F with F table, when the value of F is more than F table, it means that H0 is rejected and Ha is accepted.

3. **Coefficient Determination (R^2)**

R square is the percentage of the suitability of the model, or the value that shows how much the independent variable explains the dependent variable. R^2 in the regression equation is vulnerable to the addition of independent variables. Where the more independent variables are involved, the R^2 value

will be greater. Because that is used adjusted R^2 in Bergkita linear regression analysis and used R^2 in simple linear regression analysis.

R2 value is between 0 and 1 ($0 \leq R2 \leq 1$). If R2 is 1 means the regression line explains 100% variation in the dependent variable. However, if R2 = 0, it means that the regression line does not show the slightest variation in the dependent variable. Therefore, the model is good if the coefficient of determination is one.

The coefficient of determination is to find out how big the dependent variable is in the form of a percentage.