CHAPTER III

RESEARCH METHODOLOGY

A. Research Object

This research was conducted at Tirtamaya beach, with visitors who came to Tirtamaya beach in Indramayu as the object of study research.

B. Types **and Data Sources**

This study uses primary data. Collected using questionnaire, and interviews with several visitors around the Tirtamaya Beach.

C. **Popu**lation and Sample

Population is a generalization area consisting objects or subjects that have certain qualities and characteristics set by researchers to be studied to draw conclusions (Sugiyono, 2004). The population of this study were all visitors of Tirtamaya beach. While the sample is the small part of the population studied. By considering funds, time, effort and accuracy in analyzing the data, this study used samples.

D. Data collection techniques

This study used interview with prepared-questionnaire which be asked to the respondent directly by author when visit Tirtamaya beach.

E. Sampling techniques

Determination or retrieval of all research objects is done by random sampling. There are some advantages of random sampling, which are: easy to make sample selection, using only one type of sample selection unit, can avoid misclassification can be avoided, enough with an outline description of the population, and categorize as the simplest sample design. Each element in the population has the same opportunity to be chosen. This sampling technique can use anyone who accidentally meets with the researcher and is willing to be interviewed.

The sample calculation is determined using the formula of Isaac and Michael (Sugiono, 2007) which is shown as follows:

$$S = \frac{\lambda^2 . N . P . Q}{d^2 (N - 1) + \lambda^2 . P . Q}$$

Where:

λ ^ 2: error rate of 5%

P = Q: 0.5

d: 0.05

N: population

S: number of samples

$$S = \frac{(1.645)^2 (19900)(0.5)(0.5)}{(0.0025)(19900 - 1) + (1.645)^2 (0.5)(0.5)}$$

$$S = \frac{13462.47}{49.7475 + 0.676506}$$

$$S = \frac{13462.47}{50.42401}$$

$$S = 266.9854$$

$S = 267$

From the results of the Isaac and Michele formula (Sugiono, 2007), 267 respondents were obtained as the minimum number of respondents that would later be used in this study. It makes, researchers took 270 respondents as sample which were randomly selected from the number of visitors who came, because it was relatively easy, faster, and cost effective.

F. Operational Definition of Research Variables

1. Dependent variable

a. Willingness to Pay

Willingness to pay (WTP) is the willingness to pay of tourists of Tirtamaya beach expressed in units of rupiah. The estimation of Willingness to Pay (WTP) is obtained through the respondents' average Willingness to pay (EWTP) values in Focus Group Discussion (FGD) with the Bidding Game method, which in turn the total willingness to pay will be summed and divided by the number of respondents. This EWTP determined by FGD with 20 respondents. Resulting the EWTP for about IDR 10.000. The dependent variable in this research is 1 if WTP = EWTP (WTP = IDR 10.000), 0 if WTP ≠ IDR 10.000).

2. Independent variable

a. Age

Age is a measure of time unit that reflects the existence of an object or living thing. In this study, the age used to reflect the age of the respondent with units of years.

b. Income

Income in this study is the amount of income per month received by visitors to Tirtamaya beach tourism or respondents who have worked and earned. For student respondents, the level of income is measured based on the pocket money of individual per month.

c. Level of education

The level of education referred to in this study is how long the respondents took education as indicated by the last education taken by the respondents.

d. Distance

The definition of this variable is the distance between the visitor's houses to the tourist attraction of Tirtamaya beach. This variable is measured in kilometers.

e. Frequency of visits

The frequency of visits reflect how often the tourists visit the Tirtamaya beach or how many times have tourists visited the Tirtamaya beach in the past year.

f. Visitor satisfaction

Visitor satisfaction measured the satisfaction or dissatisfaction from tourist for Tirtamaya beach attractions. If visitors feel satisfied, it will be valued 1 and if the visitor feels dissatisfied, it will be valued 0.

g. Recreational budget

Recreational budget define amount of money is spent by tourists to visit Tirtamaya Beach attractions. The unit measurement of this variable is rupiah.

h. Visiting hours

When visiting is how long tourists spend at Tirtamaya beach attractions. With hours as unit of measurement.

G. Research Model

1. Contingent Valuation Method

The Contingent Valuation Method (CVM), which is a survey method, which directly interviews visitors about willingness to pay for improving the quality and development of Tirtamaya beach. The Contingent Valuation Method (CVM) is able to measure the value of an item that has no market target such as environmental goods. This method can discover the maximum level of willingness to pay and simply provide clear information concerning the item to the beneficiaries. Willingness to pay for estimated through the results of answers from respondents regarding willingness to pay because the ones who can directly feel the benefits of the facilities are the visitor Tirtamaya beach. From these results, the sum of the total willingness to pay obtained, hereafter divided by the number of respondents.

Based on the explanation above to analyze Willingness To Pay improvement in the quality and development of tourist attractions in Tirtamaya beach. Then this study was carried out empirically the formula of the Binary Logistic Regression Model.

H. Binary Logistic Regression

According to Hosmer and Lemeshow (1989), binary logistic regression is an analytical method used to determine the relationship between the response variable (y) and the binding variable (x) which has the properties of dichotomous or polycotomus. The results of the response variable are divided into two choices namely "yes" and "no" answers where each

choice has a different value for choice yes = 1 and no = 0. Basically, this binary logistic analysis is the same as the analysis using multiple regression. What distinguish the two is that the binary dependent variable is a dummy variable (0 and 1). In the analysis of binary logistics there are no classical assumptions such as multiple regression. Then this study was carried out empirically the formula of the Logistic Regression Model which was compiled based on the following equation:

$$\log(\frac{p}{1-p}) = \beta + \sum_{j=1}^{n} \beta i \, X ji \sum_{k=1}^{m} Yk \, Dki + e$$

$$\log(\frac{p}{1-p}) = \beta + \beta^1 Age + \beta^2 income + \beta^3 edu + \beta^4 distance + \beta^5 freq + \beta^6 utilitas + \beta^7 Cost + \beta^8 Time + e$$

Where:

p = Willingness to pay

For quality and development improvements (p = 1, if the respondent accepts payment for environmental improvements; 1- p = 0, if the respondent does not need to pay for quality improvement and development)

1 - p = Not willing to pay for environmental improvements p / ((1- p)) = Odds Ratio (Risk)

Xj = vector free variable (j = 1,2, ..., n)

Dk = vector dummy variable (k = 1,2, ..., m)

α, βi and γ_k = e = the estimated parameters of the random logistic function

1. Classification Accuracy Test

The 2 x 2 classification table calculates the estimated value of correct and incorrect data. In the column there are 2 predictive values of the dependent variable. While the row shows the actual observation value of the dependent variable. If the model is perfect, all cases will be on the diagonal with an accuracy rate of 100%.

2. Model Conformity Test

It is used to assess the prediction of classification accuracy prediction using classification tables to calculate the estimated value that is correct and incorrect.

a. Test Negelkerke R Square

In this test the results of logistic regression data are seen from Nagelkerke's R Square. The benefits of this test to determine the magnitude of the value of the component of the independent variable can explain the dependent variable. If the value of Nagelkerke's R Square approaches one means that independent variables provide almost all the information needed to predict variations in the dependent variable.

b. Test of Hosmer and Lemeshow

Regression feasibility test (Wald test) is seen from the value of Hosmer and Lemeshow's Test as measured by Chi-square value. Hosmer and Lemeshow's Test is used to test whether the data being studied matches the model, meaning there is no difference between the model and the data that is fit. If the Hosmer and Lemeshow's Test data is less than 0.05 then H0 is accepted and H1 is rejected, meaning there is a discrepancy between the model and the data studied. Conversely, if the value of Hosmer and Lemeshow's Test for Goodness of Fit Test is greater than 0.05, then H0 is rejected and H1 is accepted, meaning that the data studied and the model have a match.

3. Test for significance

This test is carried out after knowing the test results affect at least one independent variable that affects the dependent variable. The purpose of this test is to find out the independent variables that affect the dependent variable. The tests performed are:

a. Partial Signification Test

This test uses the Wald Test (W) which is used to determine the significance of the partial β coefficient with the following hypothesis:

Ho = βi = 0 (partially independent variable does not have a real influence on the dependent variable)

Hi = βi> 0 (partially independent variables have a real influence on the dependent variable)

For i = 1, 2, 3 ... n

The test statistics used are:

W = Wald value

βi = Vector coefficient associated with estimator (coefficient X)

SE (βi) = Error from βi error

Ho will be rejected if W <0.05, which means that the Xi independent variable partially affects the dependent variable Y.

b. Significantly Simultaneous Test

This test is used to determine the influence of independent variables on the dependent variable together in the logistic regression model. This test uses the Likelihood Ratio Test with hypothesis:

Ho: βi = β_2 ...., β_i = 0 (there is not at least one independent variable that affects the independent variable)

H_1: β_ (i) ≠ 0 (there is at least one independent variable that affects the dependent variable.

The test statistics used in this test are:

$$G^2 = -21n\left(\frac{lo}{li}\right)$$

Where:

Lo = maximum value of likelihood of a reduction model (Reduced Model) or explanation of a model consisting of only constants (without explanatory variables).

Li = maximum value of likelihood of a full model (Full Mode) or a model with all dependent variables.

The G2 value follows the Chi-squares distribution with p-free degrees, so the hypothesis is rejected G2 <0.05. It means that the independent variable (X) jointly touches the dependent variable (Y).