

CHAPTER V

RESULT AND DISCUSSION

A. Data Analysis

1. Determination Coefficient Test

a. Nagelkerke R Square

Determination Coefficient test was done to show how much the independent variables such as income, travel cost, education, and age able to explain dependent variable. *Nagelkerke R Square* in the logistic regression is to assess the determination coefficient test. The result is as follows:

Tabel 5.1
Nagelkerke R Square Test

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	88,303	0,345	0,474

Based on the Nagelkerke R Square test on Table 5.1, the value of Cox & Snell R Square was 0,345 and the value of Nagelkerke R Square was 0,474 or 47,4 percent, which means that the dependent variable can be explained by independent variables as much as 47,4 percent and 0,526 or 52,6 percent was explained by another variable.

2. Goodness of Fit Test

1. Hosmer and Lemeshow Test

The research which is using logistic regression must meet the eligibility assumptions of the regression model. This assumption was tested by observing the value of Hosmer and Lemeshow test obtained in the output processing of logistic regression.

Hosmer and Lemeshow estimates whether the empirical data is appropriate to the model, then it can be said that the data is fit. The value of significant $> 0,05$ or 5% which means that the model can predict the observation value. Meanwhile, if the significant value $< 0,05$ or 5%, it means that the model cannot predict the observation value. The result of the goodness of fit test is as follows:

Tabel 5.2
Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	6,911	8	0,546

Based on the Hosmer and Lemeshow test on Table 5.2, shows the value of Chi-square was 6,911 with the probability significant 0,546 $> 0,05$ which means that model is fit and able to predict the observation value. Hence, it can be concluded that the model regression was enough to explain the data (goodness of fit).

3. Classification Model Analysis

Classification model analysis test shows the accuracy of predictions from the regression model to predict the probability toward visitors'

willingness to pay for the environmental improvement in Way Kambas National Park. Respondent who is willing to pay for the improvement with the value is 1 and respondent who unwilling to pay the value is 0.

In this research, independent variables such as income, education, travel cost and age and the dependent variable are the willingness to pay. From the binary logistic analysis, we can get the result for visitors willingness or unwillingness to pay for the environmental improvement in Way Kambas National Park and the variables which significantly affect the dependent variable. The results of classification model analysis test are as follows:

Table 5.3
Classification Model Analysis

Observed			Predicted		
			WTP		Percentage Correct
			No	Yes	
Step 1	WTP	No	25	11	69,4
		Yes	11	53	82,8
Overall Percentage					78,0

According to Table 5.3 show that the respondent who are willing to pay on the predicted are 64 people, while from the observed respondents who are actually willing to pay are 53 people. Respondents who are unwilling to pay on predicted are 36, while the respondent from the observed respondent who are actually unwilling to pay are 25 people. From the result the percentage of model accuracy in order to classificate the observation as overall is as much as 78 percent.

4. Significant Test (Estimate Parameter)

a. Simultaneous Test (Overall Test)

Simultaneous significant test was done to estimate the effect of independent variables as simultan or altogether toward dependent variables. The criteria are if the value of sig $< 0,05$ it means that all the independent variables altogether influence the dependent variable. On the opposite, if the value of sig $> 0,05$ it means that all the independent variables altogether cannot influence dependent variable.

Tabel 5.4.
Simultaneous Significance Test

		Chi-square	Df	Sig.
Step 1	Step	42,380	4	0,000
	Block	42,380	4	0,000
	Model	42,380	4	0,000

According to Table 5.4, the Chi-square value is 42,380 with the value of sig probability of $0,000 < 0,05$, which means that all the independent variables such as income, travel cost, education, and age as simultaneous affecting the dependent variable (WTP).

b. Partial Test

The partial test was done to determine the effect of independent variables as partial toward dependent variable. The criteria are if the value of sig $< 0,05$ it means that the independent variables influence the dependent variable. On the opposite, if the value of sig $> 0,05$ it means that independent variables cannot influence dependent variable.

In this research, the value of willingness to pay used Dichotomous Choice which is produced from the interview of 20 visitors on the Focus Group Discussion (FGD) with the average of willingness to pay (EWTP) is IDR 14,000. The value of dependent variable dummy WTP is 1 if WTP = IDR 14,000 and 0 if WTP \neq IDR 14,000. The result of the partial test are:

Tabel 5.5.
Variables In The Equation

Variables	B	Sig.	Odds Ratio/Exp(B)
Constant	-2,498	0,169	0,082
Inc	0,000	0,044	1,000
TC	0,003	0,000	1,003
Edu	0,085	0,509	1,089
Age	0,024	0,402	1,024

Table 5.5 shows the result of partial significance has two out of four independent variables such as income and travel cost that influence visitors' willingness to pay (WTP) for the environmental improvement in Way Kambas National Park. Logistic regression model can be formed by looking at the estimated value of the parameter in Variables in The Equation.

- a) Based on the result it shows that variable of income has the probability with the significant value of $0,044 < 0,05$ then it can be concluded that income has a positive and significant influence on willingness to pay (WTP). It shows the value of Exp (B) was as much as 1,000 which means that the opportunity of respondents

- b) whose willingness to pay as much as IDR 14,000 have 1,000 times higher when the income is increasing for 1 unit.
- c) Based on the result shows that variable of travel cost has a positive regression coefficient with the significant value of $0,000 < 0,05$. So, it can be concluded that travel cost has a significant influence on willingness to pay. It shows the value of Exp (B) was as much as 1,003 which means that the opportunity of respondents whose willingness to pay as much as IDR 14,000 have 1,003 times higher when the travel cost is increasing for 1 unit.
- d) Based on the result, the p-value significance variable of education was 0,509 more than 0,05 with the coefficient value of 0,085. It can be concluded that education has no significant influence on willingness to pay (WTP).
- e) Based on the result, the p-value significance of variable of age was 0,402 more than 0,05 with the coefficient value of 0,024. It can be concluded that education has no significant influence on willingness to pay (WTP).

B. Discussion

Based on the results, the regression model in this research is as follows :

$$\text{WTP} = -2,498 \text{ Constant} + 0,000 \text{ Inc} + 0,003 \text{ TC} + 0,085 \text{ Edu} + 0,024 \text{ Age}$$

Where:

WTP = Willingness To Pay

Inc = Income per month (RP)

TC = Travel Cost (RP)

Edu = Education Level (Years)

Age = Age (Years)

Based on the regression model above, the interpretation of the result between variable visitors' Willingness to Pay towards independent variables using logit regression model is as follows:

1. Income

The result shows that statistically income has a positive and significant influence on visitors' willingness to pay for the environmental improvement in Way Kambas National Park. From the results, it is concluded that the opportunity of respondents for willingness to pay is higher when the income increases. This is because when people with high income will make the visitors have extra money to pay. The relationship between odds and income is the opportunity of respondents whose willingness to pay as much as IDR 14,000 have 1,000 times higher when the income is increasing for 1 unit. These results are in accordance with Amanda (2009) show that income has a positive and significant influence on willingness to pay for improving environmental quality.

2. Travel Cost

The result shows that statistically travel cost has a positive and significant influence on visitors' willingness to pay for the environmental improvement in Way Kambas National Park. From the results, it is concluded that the opportunity of respondents for willingness to pay is

higher when the travel cost increases. This is because when people with high travel cost will make the visitors have extra money to pay. The relationship between odds and travel cost is the opportunity of respondents whose willingness to pay as much as IDR 14,000 have 1,003 times higher when the travel cost is increasing for 1 unit. This results are in accordance with Nugroho (2010) who stated that travel cost has a significant influence on willingness to pay (WTP).

3. Education and Age

The result shows that the variable of education and age statistically have no significant influence on visitors' willingness to pay (WTP) for the environmental improvement in Way Kambas National Park. This is because the variable of education and age cannot be a barometer of visitors and unable to reflect the awareness of respondents for environmental improvement then encourage them to be willing to pay. The category of age is dominated by visitors under 40 years old, which means the visitors lacked understanding and have no concern for the environmental improvement in Way Kambas National Park. According to Majumdar (2011) which states that in contingent valuation studies the demographic variables are often found insignificant.