

# Improving Environmental Quality Through Willingness To Pay: Analysis of Ecotourism Visitors to Bandengan Beach, Jepara

*Environmental  
Quality and  
Willingness to Pay*

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## **ABSTRACT**

This study aims to analyse the willingness of visitors who deliberately come to pay to help in managing and organising Bandengan Beach ecotourism as well as possible and to analyse the estimation or amount of entrance ticket levy in Bandengan Beach ecotourism area in an effort to maintain the environment. Respondents in this study were 54% female and 46% male. The respondents through questionnaires that were answered and processed, provided information that the value of the cost that is considered reasonable for visitors is Rp. 5,949, - per person. The results of this study indicate that the income variable, age variable and education variable, do not influence the dependent variable, namely willingness to pay. While the frequency of visits and knowledge variables have an influence on the dependent variable of willingness to pay.

**Keywords:** Tourism, Willingness to Pay, Environmental Quality

## **ABSTRAK**

Penelitian ini bertujuan untuk menganalisis kesediaan pengunjung yang sengaja datang untuk membayar guna membantu dalam mengelola dan menata ekowisata Pantai Bandengan dengan sebaik mungkin dan menganalisis estimasi atau besarnya retribusi tiket masuk kawasan ekowisata Pantai Bandengan dalam upaya pemeliharaan lingkungan. Responden pada penelitian ini sebanyak 54% adalah perempuan dan 46% adalah laki-laki. Para responden melalui kuisioner yang dijawab dan diolah, memberikan informasi bahwa nilai biaya yang dianggap wajar bagi pengunjung adalah sebesar Rp. 5.949,- per orang. Hasil dari penelitian ini menunjukkan bahwa variabel pendapatan, variabel usia dan variabel pendidikan, tidak memberikan pengaruh terhadap variabel dependen, yaitu kesediaan membayar. Sedangkan variabel frekuensi kunjungan dan variabel pengetahuan memberikan pengaruh terhadap variabel dependen kesediaan membayar.

**Kata kunci:** Pariwisata, Willingness to Pay, Mutu Lingkungan

## **INTRODUCTION**

Geographically, Jepara is a unique district with an area consisting of sea, land, mountains and islands. This situation makes Jepara has the potential as an attractive tourist destination. However, the fact that it is a tourist destination makes it quite difficult

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for the regency to develop its tourism potential. Basically, Jepara Regency is a city that is strong in its sea, but this does not become Jepara's slogan to raise the sea as its attraction. This situation makes Jepara Regency not focus on managing its tourism properly. This condition is also supported by the people of Jepara who tend to get bored easily, so that if there are no changes / new creations owned by tourism sites, then they will look for other places as an alternative in travelling. Uncertain economic conditions also make Jepara citizens tend to look for tourism sites that are free of charge, be it retribution fees or parking fees. In fact, it is the contribution in this payment that can be used to develop the tourism potential in Jepara. In 2023, the Tourism and Culture Office of Jepara Regency informed that Bandegan Beach in Jepara is the most visited tourist destination. Bandegan Beach is a beach managed by the Tourism and Culture Office of Jepara Regency by promoting natural tourism / ecotourism in which it tends to collaborate with the surrounding community to participate in managing Bandengan Beach.

As a tourist spot that prioritises natural conditions / ecotourism, of course the beauty and management of the environment is a special concern that must be carried out by the managers. In coastal ecotourism management, there are several aspects that must be considered, including: aspects of environmental conservation, waste management, natural sustainability, and the potential that exists must be able to prosper the surrounding community. Community involvement can be from selling, managing cleanliness, managing public toilets, managing parking and so on. With the condition of Bandengan Beach Jepara, which has various advantages, such as; sunset in the afternoon, beautiful blue beach panorama, and the potential of local Jepara products that can be sold, it should be able to attract more tourists and contribute to the economic wheels of the Bandengan community and its surroundings. The number of visitors to Bandengan Beach Jepara can reach 274,221 every year, indicating that Bandengan Beach Jepara has more than 700 visitors per day. It is no wonder that many hotels, cafes and restaurants are located in the Bandengan Beach area. However, there is a lot of work to be done by the ecotourism management of Bandengan Beach Jepara, which includes; road repairs, sidewalks, public bathrooms, provision of trash bins, provision of seating and gazebos for relaxing to the provision of more orderly snack stalls. Efforts to improve the quality and services at Bandegan Beach, of course, cost is a major issue. Therefore, the increase in activity in the ecotourism area of Bandengan Beach must be matched by retribution. So far, visitors have not been fully burdened with certain fees, such as the purchase of entrance tickets, even if there are any, only on Saturdays and Sundays. This is due to the fact that ecotourism at Bandengan Beach has not yet been officially introduced to the public. This condition may make it difficult to maintain the sustainability and beauty of the coastal environment of Bandengan Beach, as its management requires considerable costs. If this condition is not considered, it will have an impact on the sustainability of environmental conservation and biological resources. Currently, visitors are only charged an entrance fee of Rp. 10,000 per person. The money collected from visitors is used for waste management and tourist area guards. Efforts to conserve the ecotourism of Bandengan Beach must be made from now on before it is damaged. The participation of the community and related parties is highly desirable. That is why the Willingness To Pay of visitors needs to be known so that in the future managers and related parties will provide better services to provide satisfaction to visitors.

The objectives of this study are; 1). Analyse the value that visitors are willing to pay (Willingness To Pay) in an effort to preserve the environment of Bandengan Beach ecotourism, 2). Analysing what factors influence the value of the willingness to pay (Willingness To Pay) of visitors in the Bandengan Beach ecotourism area in an effort to improve environmental maintenance, 3). Analyse how much influence these factors have on the amount of value that visitors are willing to pay.

## **LITERATURE REVIEW**

### **Concept of Tourism and Tourism**

Law Number 10 of 2009 concerning Tourism, states that tourism is a travel activity or part of the activity, which is carried out voluntarily and temporarily, to enjoy tourist objects and attractions. So the definition of tourism contains a temporary element and the trip is wholly or partly aimed at enjoying objects or tourist attractions. The most important element in tourism activities is not aimed at making a living, but if on the sidelines of earning a living is also specifically done tourism activities, part of the activity can be considered as a tourist activity.

Yoeti (1996) states that tourism is a travel activity or part of the activity that is carried out voluntarily and temporarily to enjoy objects and tourist attractions. Tourism is travelling together to expand knowledge, have fun, and so on. According to Law No. 10 of 2009 concerning Tourism, what is meant by Tourism is as follows;

- a. Tourism is a travel activity or part of the activity carried out by a person or group of people by visiting certain places for the purpose of recreation, personal development, or studying the uniqueness of the tourist attraction visited within a temporary period.
- b. Tourists are people who do tourism activities.
- c. Tourism is everything related to tourism, including the exploitation of objects and tourist attractions as well as businesses related to this field.
- d. Tourism is everything related to the implementation of tourism.
- e. Tourism Business is an activity that aims to organise services.

According to Spillane (1987), Tourism is a journey from one place to another, which is temporary and carried out by individuals or groups, as an effort to find balance or harmony and happiness with the environment in the social, cultural, natural and scientific dimensions. In general, tourism is a trip that a person takes for a while which is held from one place to another by leaving the original place and with a plan or not the intention of making a living in the place he visits, but solely to enjoy sightseeing or recreational activities to fulfil diverse desires.

### **Types of Tourism**

The following are the types of tourism, according to Spillane (1987) which are found in tourist destinations that attract customers to visit them so that it can also be known the type of tourism that may be feasible to develop and develop the types of facilities and infrastructure that support these tourism activities.

- a. Tourism to enjoy the trip (*pleasure tourism*). This type of tourism is done by people who leave their homes for a holiday, looking for new fresh air, relax the nervous tension, to enjoy the beauty of nature, to enjoy the folklore of a region, to enjoy entertainment and so on.
- b. Tourism for *recreation* (*recreation sites*). This type of tourism is carried out by people who want to use the days off for rest, to restore physical and spiritual freshness, which will refresh fatigue and fatigue.
- c. Tourism for culture (*cultural Tourism*). This type of tourism is characterized by a series of motivations such as the desire to learn in teaching and research centres, to learn the customs, ways of life of the people of other countries and so on.
- b. Tourism for sports (*sport tourism*). This type of tourism aims at sporting purposes, both to attract only sports spectators and sportsmen themselves and is intended for those who want to practice it themselves.
- c. Tourism for big *business* (*business tourism*). In this type of tourism, the element that is emphasised is the opportunity used by this traveler who uses his free time to enjoy himself as a tourist visiting various attractions and other types of tourism.
- d. Tourism for *conventions* (*convention tourism*). Many countries are interested and working on this type of tourism with many hotels or buildings specifically equipped to support convention tourism.

### **Tourism Demand**

Tourism demand is the total number of people who travel to use tourist facilities and services in a place away from home and work (Mathieson and Wall, 1982).

According to Cooper (in Mulyana, 2008), there are three basic elements of tourism demand, among others;

- a. Actual or effective demand
- b. *Suppressed* demand (postponed demand)
- c. No demand

Of the three basic elements, the actual demand is a realised demand, so it can be measured or clearly identified. While the other two elements are still requests that are difficult to analyse, because the transaction has not been realised.

#### **Factors Affecting Tourism Demand**

Some other factors that affect tourism demand according to Medlik, 1980 (in Ariyanto, 2005), include;

- a. Price (tariff)  
High prices (tariffs) at a tourist destination will have an impact / reciprocal on tourists who will travel / prospective tours, so that tourism demand will decrease and vice versa.
- b. Travellers' Income  
If the income of a country is high, then the tendency to choose a tourist destination as a vacation spot will be higher and they may create a business in a tourist destination (DTW) if it is considered profitable. This also applies to individuals. If an individual's income is high, then the tendency to choose a tourist destination as a vacation spot will be higher, and vice versa if the individual's income is low, then the tendency to choose a tourist destination will be lower.
- c. Family size  
The number of families also plays a role in tourism demand. It can be ratified that the number of families is large, so the desire to take a holiday from one of these families will be greater. This can be seen from the importance of the tour itself.
- d. Price of substitute goods (other tours)  
The price of substitute goods is also included in the demand aspect, where substitute goods are assumed to be a substitute for the Tourist Destination Area (DTW) which is used as a backup in travelling, such as; Bali as the main tourist destination in Indonesia, due to one reason or another Bali cannot provide the ability to meet the requirements of the Tourist Destination Area (DTW) so that indirectly tourists will change their destination to the nearest area.
- e. Complementary goods price  
Is a good that helps each other or in other words complementary goods are goods that complement each other, where when associated with tourism this complementary item as a tourist attraction that complements each other with other Tourism Objects.

#### **METHODS**

This research uses quantitative descriptive methods and is also causative in nature to determine the effect between variables by collecting data using research instruments, namely questionnaires. Quantitative descriptive analysis in this research is to describe WTP with survey techniques used in the research, to analyse respondents who are willing to pay a certain amount of money to support environmental conservation efforts of Bandengan Beach Ecotourism. Data were analysed causatively using multiple linear regression analysis to determine the factors that influence the WTP value of visitors. The factors tested in this study include visitor characteristics (age, gender, education, income, and length of stay). While the tourist experience is the level of satisfaction, perception of environmental conditions, and willingness to take action to preserve the environment. The population and sample were visitors who came to Bandengan Beach Ecotourism. Accidental sampling method who visited Bandengan Beach Ecotourism and were willing to be interviewed.

**RESULTS AND DISCUSSION**  
**Socioeconomic Characteristics of Visitors**

Respondents in this study were visitors who were or had been visiting Bandegan Beach Jepara during the past year and each family visiting Bandengan Beach Ecotourism only allowed one family member to participate in filling out the research questionnaire. The characteristics of the respondents in this study varied greatly, in terms of gender, age, marital status, education level, type of employment, and income level. The following are the socio-economic characteristics of the 300 respondents who participated in the research of Willingness To Pay Analysis of Visitors to the preservation efforts of Bandengan Jepara Beach Ecotourism.

Table 1. Characteristics of Respondents

Characteristics	Description	Frequency (People)
Gender	Male	138
	Women	162
Age	≤ 19	33
	20 – 29	82
	30 – 39	62
	40 – 49	89
	≥ 50	34
Marital Status	Unmarried	191
	Married	109
Education Level	<SD	10
	SMP	28
	HIGH SCHOOL	151
	Diploma	20
	Strata	91
Type of work	TNI/Police	3
	Civil Servant	9
	Self-employed	77
	Entrepreneurship	63
	Farming, Livestock, Fishermen	3
	Manual Labourer	12
	Non-workers	133
Income Level	< idr 1,000,000	61
	idr 1,000,000 - idr 1,999,999	66
	idr 2,000,000 - idr 2,999,999	87
	idr 3,000,000 - idr 3,999,999	31
	> idr 4,000,000	55

Source: Primary data processed

In the table above, it can be seen that the socio-economic factors of respondents who participated in the study, in terms of gender, were dominated by female respondents, based on a sample of 162 respondents, 54% of respondents were female, and the remaining 46% were male. Respondents in this study were dominated by women because of the tendency of women to look for places that are crowded to gather and have supporting facilities / photo spots. As for men, the tendency to travel is more towards cafes or entertainment venues. Based on the 300 respondents who participated in this study, the age level is dominated by visitors aged 40-49 as much as 29.6% (89 people), which is a productive age, has a job and has the ability to travel with family. Furthermore, followed by 20-29 years old as many as 27.3% (82 people), young age is the age where they want an outdoor atmosphere as a place of entertainment. Then followed by visitors aged 30-39 years as much as 26% (80 people) then the age level between 30-39 as much

as 20.66% (62 people), at this age visitors usually prioritise refreshing needs due to the atmosphere of work or daily activities. The next age is  $\geq 50$  years old as many as 11.3% (34 people), at this age level it usually shows that they are parents who are invited by their families for a holiday or because there are activities or jobs related to the area. Then the last is teenagers with age  $\leq 19$  which shows that this age is the age where respondents are mostly students who want an interesting place to take photos or find a place to hang out with friends.

The marital status of respondents in this study was 63.66% (191 people) of respondents who were not married. While the remaining 36.33% (109 people) are married respondents. This is because most respondents who are not married are teenagers who are looking for a place to relax, either in cafes, restaurants, beaches and enjoy various selfie facilities. Of the 300 respondents who participated in this study, the education of the majority of respondents at the high school level was 50.33% (151 people), followed by the strata level as many as 30.33% (91 people) respondents, as well as at the junior high school level as many as 9.33% (28 people), Diploma as many as 6.66% (20 people) and elementary level as many as 3.3% (10 people). From the category of visitors, it can be seen that the average potential of the Jepara Bandengan Beach market is young people of productive age, and is dominated by unmarried age and women. By looking at this information, it can be seen that they are visitors who need entertainment, and are still free to spend money when travelling. This situation can be seen from the average job they have. The occupation is indicated by the highest number of non-workers, which means they can be students, students, housewives, *freelancers* or other reasons who do not want to mention their occupation with a total of 133 people (44.3%), while the next highest is self-employed as many as 77 people (25.66%), meaning they work without being tied to anyone and work independently. Followed by entrepreneurs as many as 63 people (21%), meaning that they are business actors who already have employees who help in their business. The next order is manual workers as many as 12 people (4%), this job is a job that makes the perpetrator a labourer / factory employee. In the next order followed by civil servants as many as 9 people (3%) and TNI / Polri as many as 3 people (1%) as well as the same number of farmers, breeders or fishermen as many as 3 people (1%).

When viewed from the income level of each respondent, the number obtained is the minimum number, which is most dominated by respondents who have an income between Rp. 2,000,000,- to Rp. 2,999,999,- as many as 87 people (29%) are respondents. Then followed by respondents who have an income between Rp. 1,000,000,- to Rp. 1,999,999,- as many as 66 people (22%). Followed by respondents who have an income of less than Rp. 1,000,000, - as many as 61 people (20.3%). Followed by visitors who have income above Rp. 4,000,000,- as many as 55 people (18.3%) and the last is respondents who have income between Rp. 3,000,000,- to Rp. 3,999,999,- as many as 55 people (10.3%). Thus the dominance of tourists who have high income and low income has at least a balanced ratio, so that their decision to participate in *Willingness To Pay* research is quite objective.

### **Calculating the Estimated Average of WTP**

In order to find out the respondents' willingness to pay or not to pay, as well as to find the amount of WTP value that they are willing to pay, an interview with the help of a questionnaire was conducted. A total of 85 people (28%) disagreed to provide retribution, while 215 people (72%) agreed to provide retribution. The following is the value obtained for respondents who are willing to pay;

Table 2. Payment

<b>WTP (a)</b>	<b>Respondents (Person) (b)</b>	<b>Percentage (%)</b>	<b>WTP x Respondents willing to pay (a x b)</b>
Rp. 2000/person	42	14%	84.000
Rp. 5000/person	111	37%	555.000
IDR 10,000/person	60	20%	600.000

IDR 20,000/person	2	0.6%	40.000
Other estimates	0	0	0
<b>Total</b>	<b>215</b>		<b>1.279.000</b>

Source: Primary data processed

Based on the table above, the average value is obtained by the formula:

$$EWTP = \frac{\sum_{i=1}^n Wi}{n}$$

Where:

*EWTP*: Estimated mean WTP *Wi* : The i-th WTP value

*n* : Number of respondents

*i* : Number of respondents I willing to pay (i= 1,2,3,...n)

So that the calculation results are as follows:

$$EWTP = 1,279,000 : 215$$

$$= \text{IDR } 5,949,-$$

Based on the above calculation, the average WTP value of respondents is Rp. 5,949,- . If then the value is rounded up to Rp. 6,000,- , then this value is actually appropriate to be applied in the field as the value of retribution collection per visitor for one year. On the other hand, the manager can also apply the highest and lowest withdrawal system by considering the traffic of tourist visits while still referring to the WTP cost as the middle axis, so that the retribution withdrawal will not be far from that value.

#### Aggregating Data to determine Total WTP Value

The total WTP value obtained at Bandengan Jepara Beach Ecotourism is calculated by multiplying the average value of the WTP offer by the total population in the study. The value of the visitor population for one year is 274,221 people with a WTP value of Rp 6,000, then the following value is obtained:

Table 3. Payment Results

Average value of WTP (a)	Total Population in 1 year (b)	Total WTP per year (a x b)
IDR 6,000	274.221	Rp. 1,645,326,000

Source: Primary data processed

Based on the calculation results in the table above, the total WTP of visitors to Bandengan Jepara Beach Ecotourism is Rp. 1,645,326,000 per year. This value is the economic value that can be used for the development, management and preservation of the environment in the Bandengan Jepara Beach tourism area.

#### Hypothesis Test Results

##### Overall Model Test

The likelihood L of the model is the probability that the hypothesised model describes the input data. To test and 1, L is transformed into -2LogL. This test can also be used to determine if an independent variable added to the model significantly improves the model fit. The overall assessment of the model is done by comparing the value between -2Log Likelihood (-2LL) at the beginning (Block 0: Beginning Block) where the model only includes constants, with -2LL at the end (Block 1; Method = Enter) where the model is constant and independent.

Table 4. Overall Model Test

Iteration		-2 Log likelihood
Step 0	1	357.875
	2	357.644
	3	357.644
	1	221.236
	2	181.492
	3	165.006

Step 1	4	159.262
	5	158.341
	6	158.314
	7	158.314
	8	158.314

Source: Primary data processed

In this study, the initial -2LL value was 357.644. After entering five independent variables, the -2LL value decreased to 158.314. This decrease in the -2LL value indicates a good regression model, where the independent variables added to the model significantly improve the model fit. In other words, it is accepted, the hypothesised model fits the data.

**Simultaneous Test  
Omnibus Tests of Model Coefficients  
Goodness of Fit Test**

Used to test the null hypothesis that the empirical data fits the model. If the value of the Hosmer and Lemeshows goodness of fit test is equal to or less than 0.05, then the null hypothesis is rejected, which means that there is a significant difference between the model and its observations. If the value of the Hosmer and Lemeshow goodness of fit test is greater than 0.05, the null hypothesis cannot be rejected and this means that the model is able to predict the value of its observations or in other words the model is acceptable because it matches the observation data. You can see the significant value of the Hosmer and Lemeshow test in the table below:

**Hosmer and Lemeshow Test**

The Chi-square value is close to 2.403 with a significant value of 0.966, so it can be concluded that the resulting model in binary logistic regression, namely the willingness to pay at Bandengan Jepara Beach Ecotourism as a form of environmental conservation retribution is influenced by various independent variable factors. In other words, there is no significant difference between the observation results and model predictions because it can be seen from the table that the sig value = 0.966 which means greater than 0.05 (accept). With a confidence level of 95%, it can be believed that the logistic regression model used is sufficiently capable of explaining the data / appropriate.

**Simultaneous Test  
Omnibus Tests of Model Coefficients**

Table 5. Overall Model Test

	Chi-square	df	Sig.
Step 1	199.330	5	.001
Block	199.330	5	.001
Model	199.330	5	.001

Source: Primary data processed

Based on the Omni Test of Model Coefficients Table, the significance value of the model is 0.001 because this value is smaller than 5%, so H0 is rejected, so it is concluded that the Income Level, Age, Education Level, Frequency of Visits, Level of Knowledge variables jointly affect the willingness to pay for the Bandengan Jepara Beach Ecotourism.

**Determination Coefficient Test**

The magnitude of the derterminant coefficient in the logistic regression model is indicated by the Nagelkerke R Square value. The calculation results show that the *Nagelkerke R Square* value is 0.697 and *Cox & Snell R Square* is 0.485, which indicates that the ability of the independent variables to explain the dependent variable is 0.697 or 69.7% and there are 100% - 69.7% = 30.3% other factors outside the model that explain the dependent variable.

**Test Classification Table**

The classification table shows the strength of the regression model to predict the probability of willingness to pay for Bandengan Jepara Beach Ecotourism by respondents. The predictive power is expressed in percentage form. The test results in this study can be seen in the following table:

**Classification Table<sup>a</sup>**  
Predicted

Table 6. Classification Table

Step 1	Observe	Willingness to Pay	Willingness to Pay Retribution		Percentage
			No Available	Willi ng Retribution Available	
	Willingness Pay	No	63	22	74.1
		Willi ng Retribution Available	17	19	92.1
					87.0

a. The cut value is .500

From the table above, it is known that the strength of the regression model to predict the probability of willingness to pay at Bandengan Jepara Beach Ecotourism in this study is 92.1 per cent. This shows that by using the regression model, it is predicted that 198 visitors will be willing to pay from a total of 215 visitors who are willing to pay. While the strength of the regression model to predict the unwillingness to pay is 74.1 per cent, which is 63 visitors are not willing to pay from a total of 85 visitors who are not willing to pay.

**Multicollinearity Test**

In logistic regression, multicollinearity testing is carried out using a correlation matrix between independent variables to see the magnitude of the correlation between independent variables. A good regression model is a regression with no strong correlation symptoms between the independent variables. The test results are displayed as follows:

**Correlation Matrix**

**Table 7. Multicollinearity Results**

Constant	Revenue	Age	Education	Frequency of Visit	Knowledge		
Step 1	Constant	1.000	.122	.120	-.339	-.506	-.614
	Revenue	.122	1.000	-.502	-.006	.154	-.318
	Age	.120	-.502	1.000	-.159	.034	-.246
	Education	-.339	-.006	-.159	1.000	.078	-.266
	Frequency of Visit	-.506	.154	.034	.078	1.000	-.077
	Knowledge	-.614	-.318	-.246	-.266	-.077	1.000

Source. Processed by the author

From the table above, the results of the multicollinearity test in this study show that the correlation coefficient value between the independent variables is below 1. Thus it can be concluded that there are no strong multicollinearity symptoms between the independent variables.

**Wald test**

The logistic regression model can be formed by looking at the parameter estimate value (B) in the variable in the question. In this study, the regression model formed based on the parameter estimation value in the variable in the question is as follows:

**Variables in the Equation**

Table 8. Logistic regression model

B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)		
						Lower	Upper	
Step 1a Revenue	-.046	.341	.018	1	.892	.955	.489	1.863
Age	-.275	.353	.608	1	.436	.759	.380	1.517
Education	.424	.478	.789	1	.374	1.529	.599	3.899
Frequency of Visit	1.303	.373	12.237	1	.001	3.682	1.774	7.642
Knowledge	.360	.084	18.277	1	.001	1.433	1.215	1.690
Constant	-13.360	2.174	37.768	1	.001	.000		

a. Variable(s) entered on step 1: Income, Age, Education, Frequency of Visit, Knowledge

Based on the above hypothesis testing results in this study, it can be concluded as follows:

- a. The results of the partial significance test show that there are two independent variables in this study that have an influence on the willingness to pay for ecotourism on Bandengan Jepara beach. The significance value of visit frequency is 0.001 and knowledge has a significance value of 0.001, both of which have a value smaller than  $\alpha$  (0.05). Thus, it can be concluded that the frequency of visits variable affects the willingness to pay. Likewise, the knowledge variable has an influence on willingness to pay.
- b. In this study there is also a significance value of independent variables that exceed  $\alpha$  (0.05), namely the variables of income, age and education. With a significance value of the income variable of 0.892, the age variable of 0.436, and the education variable of 0.374 so that the influence of the income, age and education variables has no effect on the willingness to pay for ecotourism at Bandengan Beach Jepara.

## DISCUSSION

### The Effect of Income Level on Willingness to Pay

To see the level of income affecting willingness to pay at Bandengan Beach, we can look at the odds ratio value of income of 0.955, then the income factor that is below 1 has no statistical significance. So, it can be concluded that income does not have a significant impact on willingness to pay. This test is also supported by a significance value of  $0.892 > 0.05$  ( $\alpha = 5\%$ ). This concludes that  $H_0$  is accepted and  $H_1$  is rejected. This situation is also supported by the fact that the majority of respondents who participated in this study are non-workers, which means that they get their income from sources outside of work such as: pocket money, housewife spending, pensioners and other income factors.

### The Effect of Age on Willingness to Pay

Looking at age in influencing willingness to pay at Bandengan Beach, we can see that the income odds ratio value is 0.759, so the age factor below 1 has no statistical significance. Thus, it can be concluded that age has no influence on willingness to pay. This test is also supported by a significance value of  $0.436 > 0.05$  ( $\alpha = 5\%$ ). This concludes that  $H_0$  is accepted and  $H_1$  is rejected. This situation is also supported by the condition of the respondents who participated in this study, the majority of whom have an even age at various age levels. The age that has the highest respondents is in the range of 40-49 years with a total of 89 people (29.6%), then followed by visitors who have an age range of 20-29 years with a total of 82 people (27.3%), then an age range of 30-39 years with a total of 62 people (20.6%), then followed by ages 50 years and over as many as 34 people (11.3%) and ages under 19 years as many as 33 people (11%).

### The Effect of Education on Willingness to Pay

The education variable has an odds ratio of 1.529. However, the lower odds are 0.599 and the highest is 3.899. And the significance value obtained is  $0.374 > 0.05$  ( $\alpha = 5\%$ ). The conclusion is that  $H_0$  is accepted and  $H_1$  is rejected, meaning that the level of education has no significant influence on willingness to pay. Field factors also show that education is dominated by high school graduates or equivalent with 151 people (50.3%), followed by strata education with 91 people (30.3%).

### The Effect of Visit Frequency on Willingness to Pay

The frequency of visit variable has an odds ratio value of 3.682. This means that the more often a respondent visits Bandengan Beach, the more willing he or she is to pay retribution for ecotourism at Bandengan Beach Jepara. This situation is also corroborated by the significance value of  $0.001 > 0.05$  ( $\alpha = 5\%$ ). It concludes that H0 is rejected and H1 is accepted. This situation shows awareness for respondents who frequently visit Bandengan Beach Jepara, that they must pay retribution to maintain the beauty and sustainability of the environment in Bandengan Beach Jepara Ecotourism.

#### **The Effect of Knowledge on Willingness to Pay**

The Knowledge variable has an odds ratio value of 1.433 which indicates that knowledge has a significant influence on respondents' willingness to pay for ecotourism at Bandengan Beach Jepara. This situation is also supported by a significance value of  $0.001 > 0.05$  ( $\alpha = 5\%$ ) and it is concluded that H0 is rejected and H1 is accepted. Field factors show that the 10 questions asked to respondents influence their decision to pay at Bandengan Jepara Beach Ecotourism, and the level of knowledge can also be a reference for respondents in comparing Bandengan Jepara Beach Ecotourism with other similar places.

### **CONCLUSIONS**

Respondents in this study were 54% female and 46% male. The respondents through the questionnaires answered and processed provide information that the value of the fee that is considered reasonable for visitors is Rp. 5,949, - per person. Variables that have been tested and become supporting factors in willingness to pay (WTP) include income variables, age variables, education variables, frequency of visits variables and knowledge variables. The results of this study indicate that the income variable, age variable and education variable do not influence the dependent variable, namely willingness to pay. While the frequency of visits and knowledge variables have an influence on the dependent variable of willingness to pay. Factors that influence the willingness to pay for the preservation of Bandengan Jepara Beach Ecotourism are the frequency of visits and knowledge of Bandengan Jepara Beach with a significance value for the frequency of visits of 0.001 with a lower odds ratio of 1.774, then knowledge has a significance value of 0.001 with a lower odds ratio of 1.215. With each value above 1, it shows that both variables are quite supportive in contributing to the willingness to pay for the preservation of ecotourism at Bandengan Jepara Beach.

Jepara Bandengan Beach Ecotourism is a tourism area managed by the Jepara Regency Tourism and Culture Office specifically involving the general public and the tourism industry. Under these circumstances, of course the participation of all parties in maintaining the sustainability and ecosystems that exist at Bandengan Beach Jepada is a shared responsibility, this situation also includes visitors who come to the Bandengan Beach Jepara area. Therefore, we provide the following suggestions:

*For policy.* In determining the value of retribution, the manager should consider the aspects of development that have been carried out as well as the ability of visitors who enter the Bandengan Jepara Beach area. There is a need for more in-depth education about Bandengan Beach Jepara, because awareness in paying tends to be determined by knowledge of the environment at Bandengan Beach Jepara. This education can be in the form of advertisements, pamphlets, billboards, notice boards and various other types of information media.

*For future research.* The selection of variables can provide different variations in the next research and may be able to use respondents who have special characteristics as additional literacy. In determining WTP, it does not have to be about retribution, it can also be about parking fees, toilets or other fees that can be a special reason in analysing the character and behaviour of visitors. As well as the selection of research objects that are considered in accordance with the characteristics of the information to be obtained in further research.

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