

## ECONOMIC VALUATION OF AGROTOURISM: A CASE STUDY OF "BHUMI MERAPI" IN SLEMAN REGENCY

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### ABSTRACT

This research aims to know the characteristics of visitors, identify the factors that influence the number of visits, and estimate the economic value of Bhumi Merapi Agrotourism. This study attempts to estimate the economic benefits value of the visitors. This research was conducted by surveys with questionnaires to 50 visitors with the incidental sampling method. To answer the first objective, an analytical descriptive method was used. Multiple linear regression analysis was used to identify the factors influencing the number of visits. The economic value was measured using the zonal travel cost method. The results showed that visitors came from the Special Region of Yogyakarta, Central Java, and East Java. Most visitors came in groups of 1 to 10 people and had a primary purpose for recreation. The results indicated that income and visit experience had a positive influence; meanwhile, travel costs and distance negatively influenced the number of Bhumi Merapi Agrotourism. Willingness to pay the value of visitors a year is Rp59,855,200,000.00, the price paid by visitors of Bhumi Merapi Agrotourism is Rp46.315.507.000,00, and consumer surplus value is Rp13.539.700.000,00.

**Keywords:** *Agrotourism, economic valuation, travel cost method, willingness to pay*

### INTRODUCTION

Natural resources are Indonesia's wealth that contributes to regional income and affects people's welfare. The agricultural sector's success is determined by utilizing natural resource potential with various input and output factors and management aspects to obtain optimal results. Developing the agricultural sector into a tourist attraction is increasingly glimpsed as an effort to utilize the potential of existing natural resources.

Yogyakarta Special Region is one of the regions that has various tourism potentials. Tourism objects in Yogyakarta contribute to regional income and support

the economic community. Regional original income (PAD) in each district or city in the Special Region of Yogyakarta has increased along with the increase in various tourism objects and their development. The tourism sub-sector of Sleman Regency contributed the second highest after Yogyakarta City, as presented in Table 1. The contribution of the tourism sub-sector of Sleman Regency has increased from year to year. An increase of 23% occurred in 2015 and 30% in 2016. The successful development of tourism objects has supported regional economic growth by optimizing the potential of existing natural resources with consideration of long-term benefits.

Table 1. Local Revenue of Tourism by Sub-Sector in Yogyakarta Province, 2014-2016

Regions	2014 (Rp)	2015 (Rp)	2016 (Rp)
Yogyakarta Province	116.146.936.925	116.146.936.927	162.390.765.921
Sleman	84.780.228.453	104.985.102.620	137.152.075.928
Bantul	16.046.012.057	18.281.328.042	21.901.264.614
Kulon Progo	2.544.115.778	3.420.774.733	4.004.044.791
Gunungkidul	17.415.255.577	24.107.812.555	28.375.385.566
Yogyakarta City	23.038.900	51.404.440	89.828.720

Source: DIY Tourism Office, 2016

The increase in local original income (PAD) in Sleman Regency cannot be separated from the contribution of natural tourism objects, one of which is agrotourism. Bhumi Merapi agrotourism is one of the education-based natural tourism objects in agriculture and animal husbandry, with excellent development opportunities. The existence of Bhumi Merapi Agrotourism contributes to regional income and supports the surrounding community.

Bhumi Merapi's development milestone lies in utilizing natural resources and the agrotourism environment. Natural resources are wealth that will continue to decrease unless maintained and appropriately conserved. The right policies in management can support the sustainability of Natural resources and the agrotourism environment to provide short- and long-term benefits. Limited data and information on the quantity and quality of the agrotourism environment affect decision-making on natural resource management and control. Decision-making errors can reduce the rate of natural resources. It can happen if supervision and control in management do not run well, causing damage to natural resources. One of the foundations that can be used as management policy considerations is the results of the analysis of the economic value of agrotourism.

Agrotourism has an economic value that cannot be monetized directly, so it needs an economic valuation method of natural resources and the environment. Economic valuation is an economic activity representing the economic value of goods and services. The environmental economic valuation method begins with the assumption that consumers have preferences that describe the satisfaction they want to receive if they consume a good or service (Perman et al., 1996). A natural resource assessed is generally intended to facilitate the evaluation of the policies implemented to benefit various parties and maintain the value of long-term benefits. Typical approaches to value public goods are hedonic price, contingent value method, choice modeling, and travel cost method (Hanley & Spash, 1993).

The Travel Cost method is the most common indirect economic valuation method used in an environmental area. This method assumes that visitors must sacrifice something of economic value to enjoy the beauty and facilities inside. Measurement of

the amount of costs that must be incurred to reach tourist attractions becomes a basic information used in the travel cost method regarding the value of the tourist attractions (Kolstad, 2000). This method can remove existing recreational sites, develop recreational sites, and change environmental quality in recreational areas. The cost-of-travel method is relatively uncontroversial because it is modeled on standard economic techniques for measuring value by using information about actual behavior rather than verbal responses to hypothetical scenarios. In addition, the travel cost method is more straightforward in interpreting results than other methods (Limae et al., 2014).

Based on the background that has been described, the economic valuation of Bhumi Merapi Agrotourism needs to analyze the right policies and development to obtain high company profits while prioritizing visitor satisfaction. The purpose of this study is to determine the characteristics of visitors, analyze the factors that affect the level of visits, and find out the economic value of Bhumi Merapi Agrotourism.

## RESEARCH METHODS

### Basic Method

The primary method used in this study is the descriptive analysis method. This method is carried out by collecting, compiling, analyzing, and interpreting objects or events that occur to provide an automatic, factual, and accurate picture of the facts, properties, and relationships of the objects under study (Hariwijaya, 2017).

### Location and Sampling

The research area was determined by purposive sampling, considering that Bhumi Merapi Agrotourism is a prospective natural tourism object for regional economic growth, has easy accessibility, and is in demand by many visitors who want to learn about agriculture. The data used are primary and secondary. Primary data were obtained through interviews with 50 visitors by incidental sampling.

### Data Analysis Methods

#### 1. Factors Affecting Visit Rate in Bhumi Merapi Agrotourism

This study tested seven independent variables that are thought to influence the dependent variable. The independent variables tested were travel cost (X1), average monthly earnings (X2), distance (X3), education level (X4), age (X5), visiting

experience (D1) and type of visit (D2). The dependent variable (Y) is the level of visits at Bhumi Merapi Agrotourism. The formula calculates the determination of the level of visits per 1,000 inhabitants:

$$TK = \frac{(\frac{Vi}{n}) \times N \times 1000}{Pi}$$

Information:

TK: visitation rate (persons)

Vi: number of samples from zone I (people) n: total number of samples (people)

N: Total number of visits in 2017

Pi: number of inhabitants of the i-zone (people)

This study used a logarithmic form regression model to test factors affecting visitation rates. The regression model used is as follows:

$$\ln Y = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + \beta_5 \ln X_5 + D_1 + D_2 + \mu$$

Y: number of visits per 1000 inhabitants;

X1: Travel Expenses (Rp)

X2 : Income per Month (Rp); X3 : Distance (km)

X4: Age (years)

X5: Education (years)

D1: Visiting Experience

("0": never been; "1": ever)

D2: Type of visit

("0": stopover destination; "1": main goal)

b0 = intercept;

b1 = regression coefficient

## 2. Determination of Economic Value

The determination of the economic value of Bhumi Merapi Agrotourism, which includes total willingness to pay, travel expenses, and consumer surplus, is based on the willingness to pay visitors to consume goods or services obtained from the agrotourism. Determination of economic value using the Marshall demand curve. A demand model is created, which is the relationship between the number of visits per 1,000 residents of the visitor's home area with travel costs, namely (Muntoro, 2009):

- a. Regresses visitation rates (Y) with travel costs and other socioeconomic factors (X). The regression model used is an ordinary model without using dummy variables with the following model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5$$

Information:

Y: Number of visits per 1000 inhabitants

(people)

X1: Travel Expenses (Rp)

X2 : Income per Month (Rp) X3 : Distance (km)

X4: Age (years)

X5 : Education (year)  $\beta_0$  : Intercept;

b1 : regression coefficient

- b. Specifies a new intercept  $\beta_0'$  that is a request function with the assumed X1 free variable that other factors (X2, X3, X4, X5) is fixed :

$$Y = \beta_0' + \beta_1 X_1$$

- c. Inverts the equation of the origin function so that:

$$x_1 = \frac{Y - \beta_0'}{\beta_1}$$

- d. Guess the average willingness to pay with the formula:

$$U = \int_0^a f(Y) \delta Y$$

Information:

A: Average Visit Rate ( $\bar{Y}$ )

U: Average willingness to pay visitors

f(Y) : request function

- e. Determine the average price ( $\hat{X}_1$ ) at the time of the average visit rate by substituting  $\bar{y}$  so that the following equation is formed:

$$\hat{X}_1 = \frac{\hat{Y} - \beta_0'}{\beta_1}$$

- f. Determine the average value consumers pay by multiplying the value  $\hat{x}_1$  (the result of the previous step) by the value of  $\bar{y}$
- g. Determine consumer surplus by subtracting the value paid from the willingness to pay by consumers.

The economic value per 1000 inhabitants obtained determines the total value, including willingness to pay, value paid, and consumer surplus value. The total value is calculated by multiplying the average economic value per 1000 inhabitants by the total population of all zones as the following formula.

$$NT = \frac{\text{Means} \times \text{total population}}{1000}$$

**RESULTS AND DISCUSSION**

**Visitor Characteristics**

The following is a description of the characteristics of visits made by visitors to Bhumi Merapi Agrotourism:

**1. Purpose of Visit**

Knowledge of the purpose of the visit is essential as a consideration in providing facilities that meet visitors' wishes. Most respondents chose Bhumi Merapi Agrotourism as the leading destination for recreation (Table 2). The purpose of visits in the form of recreation and learning nature has quite a lot compared to other destinations. It aligns with the vision of Bhumi Agrotourism, an educational Integrated Farming-based tourism object.

Various motivations for visiting illustrate that Bhumi Merapi Agrotourism provides various facilities for visitors to pursue various interests, including recreation, research, *camping*, *meetings*, and *outbound*. It is done to expand market share, which is not only intended for children but also equipped with facilities for teenagers and adults.

Table 2. Distribution of Bhumi Merapi Agrotourism Visitors by Destination

Visit Purposing	Sum (person)	Percentage (%)
Recreation	37	74
Learning nature	8	14
<i>Camping</i>	1	2
<i>Outbound</i>	1	4
Meeting	2	4
Research	2	4
<b>Sum</b>	<b>50</b>	<b>100</b>

Source: Primary Data Analysis, 2018

**2. Mode of Transportation**

The transportation used by visitors to Bhumi Merapi Agrotourism varies. Viewed from the point of view of agrotourism managers, visitor transportation modes can be considered in managing and developing agrotourism, especially in road access and providing adequate parking lots. Based on research, most visitors use car transportation, which is as much as 60%. Visitors use motorbikes as much as 24%, while visitors use transportation in the form of buses as much as 16%. The number of visitors using car transportation modes is greater than motorcycle users. It is in line with the

characteristics of visitors to Bhumi Merapi Agrotourism, the majority of which are upper-middle-class families.

Table 3. Distribution of Bhumi Merapi Agrotourism Visitors by Transportation

Types of Transportation	Sum (People)	Percentage (%)
Motorcycle	12	24
Car	30	60
Bus	8	16

Source: Primary Data Analysis, 2018

**3. Number of Groups**

The number of visitors to Bhumi Merapi Agrotourism varies. Tourists who come with friends and family tend to have a smaller number of groups than tourists who come with work and school groups. The number of visitor groups is also a consideration for the management of rides so that they can be regulated for duration, number of employees, rest areas, and others to maximize the services provided to visitors. Based on Table 4, it is known that 88% of visitors come from groups under ten people. It happens because the majority of visitors are small families.

Table 4. Distribution of Bhumi Merapi Visitors Based on Group Size

Group (person)	Sum (person)	Percentage (%)
≤ 10	44	88
11-30	1	2
31 - 50	1	2
51 - 100	1	2
>100	3	6
<b>Sum</b>	<b>50</b>	<b>100</b>

Sumber : Analisis Data Primer, 2018

**4. Place of Origin and Travel Cost of Bhumi Agrotourism Visitors**

Merapi comes from various regions. The area of origin is synonymous with the distance and travel time visitors must travel to reach tourist attractions. In addition, visitors' area of origin can illustrate the extensive information about the existence and attractiveness of Bhumi Merapi Agrotourism. Table 5 shows that visitors to Bhumi Merapi Agrotourism come from 13 regencies/cities spread across the Special Region of Yogyakarta, Central Java, and East Java. It shows that Bhumi Merapi Agrotourism has yet to be reached by tourists outside Java, so more massive promotion is needed to reach a broader range of tourists from various regions.

Table 5. Distribution of Bhumi Merapi Agrotourism Visitors by Place of Origin and Travel Cost in 2018

Place of Origin	Average Distance (km)	Average Cost (Rp)	Sum (person)	Percentage (%)
Sleman	17,3	147.300	19	38
Kota Yogyakarta	26	189.300	6	12
Magelang	37,5	255.000	2	6
Bantul	38,4	247.500	7	14
Klaten	42,5	275.000	2	4
Kulonprogo	50	235.000	4	8
Gunungkidul	55	325.000	2	4
Boyolali	55	345.000	1	2
Surakarta	80	375.000	1	2
Kota Semarang	125	716.600	3	6
Semarang	130	375.000	1	2
Magetan	140	325.000	1	2
Mojokerto	275	625.000	1	2
Sum		4.435.700	50	100

Source: Primary Data Analysis, 2018

### 5. Sources of Information

Visitors get information about Bhumi Merapi Agrotourism from various sources. Various promotional media are carried out to disseminate agrotourism information to various regions. Table 6 shows that as many as 48% of visitors get information from social media. As many as 38% of visitors get information from friends, as many as 12% from family, and 2% from exhibitions. The flow of information sourced from friends or co-workers has a reasonably high percentage. It is because it is common for someone to look for tourist recommendations by chatting with friends. It shows that a good impression by visitors can bring other visitors. Thus, the level of visitor satisfaction affects the level of visits later on.

Table 6. Distribution of Bhumi Merapi Visitors by Information Source

Source of Information	Sum (person)	Percentage (%)
Social media	24	48
Friend	19	38
Family	6	12
Expo	1	2
Sum	50	100

Source: Primary Data Analysis, 2018

### 6. Willingness to Visit Again

The willingness to make a return visit to Bhumi Merapi Agrotourism is an implication of the level of satisfaction obtained on previous visits. Based on the survey, there are 94% of visitors planning to make a return visit. The reason is that Bhumi Merapi Agrotourism has a different concept

than other tours in Yogyakarta. Visitors can interact freely with the supervision of guards so that visitors are closer to the flora and fauna. The educational concept offered by agrotourism invites children to learn while playing so that it is not dull. 6% chose to avoid making a return visit in the future because other attractions were more affordable (Table 7). Based on these results, it is known that visitors who have the desire to visit again in the future are far more than visitors who do not want to visit again. It shows that the concept carried out by Bhumi Merapi Agrotourism is more valuable than the costs incurred.

Table 7. Distribution of Bhumi Merapi Visitors Based on the Desire to Visit Again

Willingness to Revisit	Number (of people)	Percentage (%)
Yes	47	94
No	3	6
Sum	50	100

Source: Primary Data Analysis, 2018

### Factors Affecting Visit Rate

Various factors influence the level of tourist visits to Bhumi Merapi Agrotourism. This study examines whether travel factors, average income, distance, age, education, visiting experience, and type of visit significantly affect the level of visits to Bhumi Merapi Agrotourism. Before the visit factor analysis, respondents were grouped by area of origin and divided into several zones. The number of visitors in one year is obtained from secondary data from the

manager of Bhumi Merapi Agrotourism. Data obtained from agrotourism shows that the number of tourist visits to Bhumi Merapi Agrotourism in 2017 was as many as 54,125 was calculated from the total sales of entrance tickets, venue rentals, and group visits, both *field trips* and *outbound*. The

value is then used to calculate the level of visits per thousand inhabitants with data on the number of residents of each zone based on the latest Central Statistics Agency processed data. The number of visits per 1000 inhabitants can be seen in the following table.

Table 8. Visit Rate per Thousand Inhabitants per Year by Zone of Origin in 2018

Zone	Sum (people)	Population (people)	Visit rate per 1000 inhabitants Per Year
Sleman	19	1.180.479	17,42
Yogyakarta city	6	417.744	15,55
Magelang	2	1.257.120	1,72
Klaten	2	1.163.220	1,86
Bantul	7	983.527	7,7
Kulonprogo	4	416.683	10,39
Gunungkidul	2	722.479	3
Boyolali	1	969.330	1,12
Surakarta	1	514.170	2,11
Kota Semarang	3	1.729.080	1,88
Semarang	1	1.014.200	1,07
Magetan	1	627.984	1,72
Mojokerto	1	1.090.075	0,99
Sum	50	12.086.091	63,74
Mean			5,12

Source: Primary and Secondary Data Analysis, 2018

The visitation rate per 1,000 inhabitants per year obtained from each zone was used as the dependent variable in multiple linear regression analysis. Seven independent variables were thought to affect visitation rates in Bhumi Merapi Agrotourism. Before regression is Factors Affecting Visit Rate carried out, classical assumption tests are first carried out, including normality,

multicollinearity, and heteroscedasticity, to ensure no interference with the regression model used so that the results are *valid*. Models that have escaped classical assumptions are then used to assess significant factors. The regression analysis results of factors affecting the level of visits can be seen in Table 9 as follows.

Table 9. Regression Results of Factors Affecting Visit Rate in Bhumi Merapi Agrotourism 2018

Variable	Expected Sign	Coefficient	Probability
Constant	+	8,6360	0,0083
Ln Cost (X <sub>1</sub> )	-	-0,9118 *	0,0044
Ln Income (X <sub>2</sub> )	+	0,5088 **	0,0135
Ln Distance (X <sub>3</sub> )	-	-0,6859 **	0,0007
Ln Age (X <sub>4</sub> )	+	0,6365 ns	0,1222
Ln Education (X <sub>5</sub> )	+	-1,0386 ns	0,1981
<i>Dummy</i>			
Visiting Experience (D <sub>PB</sub> )	+	0,2767 *	0,0958
Types of visits (D <sub>JK</sub> )	+	-0,2862 ns	0,4887
<i>Adjusted R<sup>2</sup></i>			0,7427
F-stat			21,2055
F-sig			0,0000

Source: Primary Data Analysis, 2018

Information :

\*\*\*: Significance 99%

\*\* : Significance 95%

\*: Significance 90%  
 ns: Not Significance

The *adjusted*  $R^2$  value in the regression model is 0.742699 or rounded to 0.74, meaning that 74% of the variation of the dependent variable (visit rate) can be explained by the independent variables in the model (travel expenses, average income per month, distance, age, education level, visiting experience, and type of visit). Other variables outside the model explain the remaining 27% of the variation. The value of the constant in the form of a natural logarithm is 8.63, so the anti-log value obtained is 4285.53, meaning that if all independent variables are 0, then the visit rate is 4285.53.

Based on Table 9, it can be seen that the probability value  $F$  of 0.0000 means less than the *alpha* values of 1%, 5%, and 10%, so  $H_0$ , which states that there is no influence of the independent variable on the dependent variable, is rejected. The probability value 0.000 indicates that the independent variables influence the dependent variable together.

The probability value of the travel cost factor is 0.0044, which means that the cost of travel significantly (1%) affects the level of visits at Bhumi Merapi Agrotourism. The regression coefficient value is negative, which is -0.911796, meaning that every time there is an increase in travel costs by 1%, the visit rate will decrease by 0.91%. That is, the higher the cost of travel, the decrease in one's visit to Bhumi Merapi Agrotourism. It follows the demand theory, which states that the higher the price, the lower the quantity demanded.

The probability value of the income factor is 0.0135, which means that it is smaller than *alpha* 0.05 and 0.10, so  $H_0$  is rejected. It shows that the average monthly income affects the visits to Bhumi Merapi Agrotourism. The value of the regression coefficient is a positive value of 0.508842, meaning that there is a directly proportional relationship between average income and visit rate; every time there is an increase in income of 1%, the visit rate will increase by 0.51%. It shows that the higher a person's income, the higher their tendency to visit Bhumi Merapi Agrotourism.

The probability value of the distance factor is 0.0007, which means it is smaller than *alpha* 0.01, 0.05, and 0.10, so  $H_0$  was rejected. It shows that distance affects the level of visits at Bhumi Merapi Agrotourism. The value of the regression coefficient is

negative, meaning there is an inverse relationship between the distance of the location and the level of visits. It shows that the farther the distance from where a person lives, the lower the average chance of visiting Bhumi Merapi Agrotourism. In addition, the longer the distance from the location to tourist sites tends to require higher transportation costs. The probability value of the visiting experience factor is 0.0958, which means it is smaller than *alpha* 0.10, so  $H_0$  is rejected. It shows that the experience of visiting affects the level of visits at Bhumi Merapi Agrotourism. Thus, it is known that if visitors have visited Bhumi Merapi Agrotourism, it will increase the level of visits. A visit indicates a visit made more than once. Repeated visits to Bhumi Merapi Agrotourism can illustrate customer loyalty and satisfaction in previous visits. According to Rossat *et al.* (1999), consumer loyalty or *Customer Loyalty* is described by a series of behaviors and habits. The behavior in question includes the desire to return to use products or services, willingness to inform others, and commitment to related companies not to use products or services from competitors. Based on the results of the study, it is known that age, education level, and type of visit do not affect the level of visits at Bhumi Merapi Agrotourism. It happens because the data on visitor age distribution, education, and the type of visits obtained tends to be homogeneous. Most visitors choose Bhumi Merapi Agrotourism as the leading destination and a small part as a stopover destination for sightseeing.

### **Economic Value of Bhumi Merapi Agrotourism**

The economic value of Bhumi Merapi Agrotourism is calculated by assuming that variables other than travel costs are of fixed value. The equation used in calculating the economic value of Bhumi Merapi Agrotourism is a regular model without logarithmic forms. The difference in the use of this model is made because the logarithmic model in the previous stage was used to interpret factors that affect the level of visits. At the same time, determining economic value requires a demand function and considers that the variables income, distance, education, and age are fixed. Thus, the value entered is the average of each respondent variable. The value used is the

average value of all respondents without the value of the *dummy variable*. Based on the calculation results using the *travel cost method*, the value of willingness to pay visitors to Bhumi Merapi Agrotourism is calculated at Rp4,952,406.00 per 1000 inhabitants per year. The value paid is Rp3,832,132.00 per 1000 inhabitants per year. Consumer surplus is a reduction from the value of willingness to pay with the value paid, so the value of consumer surplus is Rp1,120,274.00 per 1000 population per year (Figure 1).

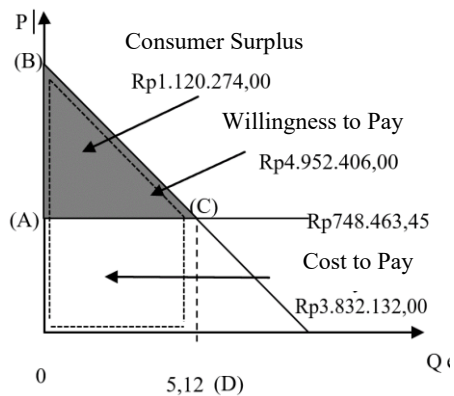


Figure 1. Bhumi Merapi Agrotourism Consumer Surplus 2018

Figure 1. shows the surplus of consumers visiting Bhumi Merapi Agrotourism. The trapezoid-shaped area BCD0 is the value of *willingness to pay* by visitors. The ACD0 quadrilateral area is the value paid when the visit level is 5.12, and the travel cost at the visit level is Rp748,463.45. Consumer surplus is characterized by a shaded area that is the

triangle ABC.

The economic value per 1000 population obtained, if converted into per individual, the value of willingness to pay is Rp4,952.4 / year. The value paid per individual is Rp3,832.13/year, and the consumer surplus value is Rp1,120.74/year. This value can increase with the number of visits to Bhumi Merapi Agrotourism. The potential value of Bhumi Merapi Agrotourism can be determined by determining the total value.

The economic value per 1000 inhabitants determines the total value of Bhumi Merapi Agrotourism, which includes willingness to pay, value paid, and consumer surplus value. The total value calculation is multiplying the average economic value per 1000 inhabitants by the total population of all zones. The total population of the 13 zones used is 12,086,091. The average value used results from the previous calculation (in Rupiah per 1000 inhabitants per year), which includes consumer surplus, willingness to pay, and value paid.

$$NT = \frac{\text{Means} \times \text{Total of Population}}{1000}$$

The calculation results show the value of willingness to pay a total of Rp59,855,200,000.00 / year, which illustrates that visitors from all zones are willing to pay this value to get satisfaction and benefits from tourism activities or visits to Bhumi Merapi Agrotourism. The value paid by visitors amounted to Rp46,315,507,000.00/year, and the consumer surplus value amounted to Rp13,539,700,000.00/year, as presented in Table 9.

Table 10. Total Value of Bhumi Merapi Agrotourism in 2018

Value	Average Value (Rp/1000 population/year) (a)	Number of Inhabitants (people) (b)	Total Value (Rp/Year) ((a x b)/ 1,000)
Willingness to Pay	4.952.406	12.086.091	59.855.200.000
Value Paid	3.832.132	12.086.091	46.315.507.000
Consumer Surplus	1.120.274	12.086.091	13.539.700.000

Source: Primary Data Analysis, 2018

The surplus value of Bhumi Merapi Agrotourism consumers is 0,23 higher than compared to the value of willingness to pay, which is 0.23. The comparison shows that the benefits visitors obtain from their visit to Bhumi Merapi Agrotourism are 23% of their

*willingness to pay*. Thus, the manager can increase ticket prices or facilities while considering the service quality. With the addition of various facilities, rides, and improved service quality, the price increase will not reduce the surplus of Bhumi Merapi



Agrotourism consumers because the willingness to pay by visitors is also increasing. The higher the surplus value of consumers, the higher the value of benefits obtained by visitors. Bhumi Merapi agrotourism has an excellent opportunity to increase economic value by increasing the number of visits. Continuous development will increase its attractiveness. In addition to the addition of various supporting vehicles and facilities, more intensive information dissemination is needed so that people from various regions can quickly get to know Bhumi Merapi Agrotourism. Various promotional media can be utilized, both internet and print media. Visitor satisfaction also needs to be considered because it affects the number of visits in the future. The satisfaction obtained from his visit to Bhumi Merapi Agrotourism will encourage visitors to return. In addition, satisfied visitors will tend to recommend Bhumi Merapi Agrotourism as a tour of choice to colleagues or relatives so that the number of visitors increases.

#### CONCLUSION

1. Most visitors choose Bhumi Merapi Agrotourism as the leading destination for recreation, with the area of origin covering the Special Region of Yogyakarta, Central Java, and East Java. Most visitors come in groups of 1 to 10 people and use the primary mode of transportation by car. Social media is the primary source of information about Bhumi Merapi Agrotourism. The majority of visitors have a desire to make a return visit.
2. The level of income and visiting experience have a positive effect. In contrast, the cost of travel and distance have a negative effect on the level of visits to Bhumi Merapi Agrotourism.
3. The economic value of Bhumi Merapi Agrotourism consists of a total willingness to pay of Rp59,855,200,000.00/year, a total value paid of Rp46,315,507,000.00/year, and a total consumer surplus of Rp13,539,700,000.00/year.

#### SUGGESTIONS

1. For the management, it is necessary to add various rides and facilities to

increase the attractiveness of agrotourism, such as lodging, fruit-picking tours, water tourism, and others. In addition, it is necessary to have proper management and control of natural resources in the form of supervision and care of flora and fauna so that there is no death or decrease in quality due to visitor behavior when interacting with existing natural resources.

2. The management is expected to intensify promotions to reach a wider community and increase the level of visits in the future.

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