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ECONOMIC VALUATION OF SURFING TOURISM AT CIMAJA BEACH PALABUHAN RATU, SUKABUMI REGENCY, WEST JAVA.

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Abstract: Cimaja Beach, Palabuhan Ratu in Sukabumi Regency has the potential of natural resources that can be used as surfing attractions. This study aims to determine the magnitude of the potential economic value and total economic value and analyze the factors that influence the cost of travel when visiting Cimaja Beach. This research was conducted in June - July with seven times data collection. The method used is accident sampling. Respondents were 100 people with 50 local tourists and 50 foreign tourists. The results of that the total economic value of surfing tourism in Cimaja Beach in 2019 is IDR. 34,845,714,790 in year.or US $. 2,495,737.21 in year. The variable that influences the level of visits of local tourists to Cimaja Beach is variable distance which has a significant effect while for foreign tourists which significantly influences the level of visits to Cimaja Beach which is variable age.

K**eywords** *: Cimaja Beach, Economic Valuation, Surfing Tourism*

INTRODUCTION

Tourism is a trip made temporarily from one place of residence to another place that is needed not to make a living in the places visited, but only to enjoy the trip. The purpose of the trip was to go on an excursion and recreation to fulfill his desires (Yoeti 1996).

Tourism is a commodity that is needed by every individual, the reason is because the activity of traveling for an individual can increase creative power, eliminate work saturation, relaxation, shopping, business, know the historical and cultural heritage of a particular ethnicity, health and spiritualism tourism. Increased free time as a result of shorter working days and supported by increased income, tourism activities will increase. Recreational places do not have a definite market value, so the valuation of recreation areas is carried out using a travel cost approach. This travel expense method is carried out using information about the amount of money spent and the time taken to reach the recreation area to estimate the amount of income from the effort to change the environmental quality of the recreation area visited (Yakkin 1997).

Marine tourism is tourism and the environment based on tourist attractions in areas dominated by water and marine affairs. Marine tourism is an activity to enjoy the beauty and uniqueness of natural tourist attraction in the coastal and marine areas near the coast and other supporting recreational activities. Marine tourism is a tourism activity that utilizes the natural potential of the sea as a tourist attraction as well as a place for tourism activities carried out on the surface in the sea that cannot be

separated from the existence of ecosystems that are rich in diversity of marine biota types (Soekadijo 1996).

Cimaja beach worldwide with big waves that are consistent so surfers from around the world come to try it. Every year, in June-July there is an international level surfing competition with the theme of the West Java Open Championship. A pride of Cimaja Beach, Palabuhanratu, Sukabumi, West Java is known in the international world. The contours of the beach are different from the beach in general, making Cimaja Beach as a tourist attraction that has a tourist attraction to visit (Afriza and Abadi 2012).

Cimaja Beach has maritime tourism potential that is able to bring in local and foreign tourists because it has beautiful scenery and has the characteristics of large waves that are suitable as a surfing destination. So this research was conducted to determine the total economic value of surfing attractions on Cimaja Beach by using the Individual Travel Cost Method approach and to identify the factors that influence the level of local and foreign tourist visits to Cimaja Harbor, Pelabuhan Ratu.

MATERIALS AND METHODS

The study area in this study is along the Cimaja Beach which is used for surfing tourism activities with a total length of coast of about 1 km. Data on the number of tourists used in this study are data on local and foreign tourist arrivals in 2019. The analysis conducted includes a descriptive analysis of the socio-economic characteristics of visitors and statistical analysis to estimate the potential economic value of tourism.

Time and Place of Research

The study was carried out in the Cimaja Coast area of Pelabuhan Ratu in Cimaja Village, Cikakak District, Sukabumi Regency, West Java Province. Sampling was carried out in June-July 2019 with seven sampling times.

Sampling technique

Respondents in this study were surf tourists visiting Cimaja Beach with 100 respondents, 50 local tourists and 50 foreign tourists. Samples of visitors were taken using the quoted accidental sampling method. This technique is imposed on individuals who happen to be found at the Cimaja Beach tourist site.

Research variable

To determine the level of tourist visits to Cimaja Beach, a quantitative non-experimental approach was carried out using a questionnaire that made the variables studied. The determination of this variable is a combination of research variables that have been conducted by Anna and Dicky (2017), Blackwell (2007) and Ward and Beal (2000) with similar research topics. The research variables tested in this study include:

Variable dependent:
Y : Visit Level
Variabel *independent*:
X_1 : Travel Cost/visit
X_2 : Income
X_3 : Distance
X_4 : Age
X_5 : Level of education

Data analysis

Data analysis in this research uses descriptive and quantitative methods. Descriptive method is used to describe the general condition of the study area and visitor's socioeconomic characteristics. As for the quantitative method carried out by multiple linear regression analysis using SPSS to find out the relationship between the variables studied. This relationship can be expressed in the form of an equation that connects the Y bound variable with one or more free variables X1, X2, .. Xn. In the multiple linear regression analysis formulated as follows:

$$Y = f(X_1, X_2, X_3, X_4, ..., X_n)$$
$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + ... \beta_n X_n$$

Information :
α = *intercept*

β = coefficient
X = Research variable

Calculation of Total Economic Value

The value of economic potential is determined by calculating the value of the consumer surplus of each individual per year. To calculate the value of consumer surpluses, the following formulation is used:

$$Dx = Qx = a - bP$$

The above equation is derived in the form of a limited integral equation, with the lower limit of the lowest costs paid by visitors and the upper limit of the highest costs incurred by visitors to travel to Cimaja Beach so that it can be formulated as follows:

$$SK = \int_{p0}^{p1} f\,(P)dP$$

Information:
SK : Consumer Surplus
P^1 : The highest costs incurred by visitors
P^o : The lowest costs incurred by visitors
P : The visit level regression equation

RESULTS AND DISCUSSION

Regional Overview

Cimaja Beach is one of the surfing attractions in Sukabumi Regency. This beach is located about 170 km from Jakarta, which can be reached by road using a car vehicle of approximately six hours drive. Tourism support infrastructure is quite adequate as there are already available lodging places, restaurants, surfboard rentals, souvenir centers and extensive parking facilities.

The number of tourists visiting Cimaja Beach from year to year continues to increase. In 2015 there were only 71,719 people visiting, but in 2019 the number jumped to 74,340 local tourists and 5,390 foreign tourists, bringing the total to 79,730 visitors (Department of Culture and Tourism in Sukabumi Regency 2019). The increase in the number of visitors to Cimaja Beach is driven by the better road infrastructure to the tourist sites, as well as the increasingly aggressive promotion of the coastal tourism area along the Ratu harbor bay in Sukabumi Regency.

The travel request function

Before a regression test is conducted, an econometric evaluation is carried out with the classic assumption test including multicollinearity test, heteroscedasticity test and autocorrelation test. Multicollinearity test results for local and foreign tourists pointed out VIF values less than 10 and tolerance smaller than 1 for all research variables. Heteroscedasticity test using graphical assistance for local and foreign tourists shows the distribution of points evenly distributed above and below the value of 0, and the autocorrelation test using the Durban Watson Test shows a DW value close to 2. In general, the test results for local and foreign tourists test the violation so there is no violation so feasible to proceed to the next testing phase.

Table 1. Test Local Tourist Models

Model Test	Information
R^2	27,7%
F Test	0,012
T Test	X_1
Normality **Test**	Yes
Heteroskedastisitas Test	No
Autokorelasi Test	No
Multikolinieritas Test	No

Source: Primary Data (Processed) 2019

From the results of the model tests that have been carried out it can be concluded that the test model for foreign tourists can be in the table 2 below.

Table 2. Test Foreign Tourist Models

Model Test	Information
R^2	27,7%
F Test	0,012
T Test	X_4
Normality **Test**	Yes
Heteroskedastisitas Test	No
Autokorelasi Test	No

Multikolinieritas Test	No

Source: Primary Data (Processed) 2019

This model test is carried out to find out whether the data meets the assumptions or not that are adjusted to the existing criteria. If the regression results meet the regression assumptions, the estimated values obtained will be BLUE (Best, Linear, Unblased, Estimator). There are several assumptions that a model is said to be BLUE, to find out the assumptions above, the regression estimation should be supplemented with the necessary tests, such as normality, autocorrelation, heteroscedasticity or multicollinearity (Gujarati and Porter 2012). From the table above that shows the conclusions of the test model, it can be concluded that the model used has fulfilled the regression assumptions, the estimated value obtained is BLUE.

So as to find out what factors influence the level of visits, a regression analysis is performed with variable input on the number of visits, where the results of the analysis can be seen in (Table 3) as follows:

Table 3. Analysis of Factors Affecting the Level of Local Tourist Visits

Variable	Coefficient	*P-Value*
X_1	0,000009510	0,761
X_2	-0,00000003561	0,891
X_3	-0,011	0,009 (*)
X_4	-0,93	0,673
X_5	-0,764	0,061

Source: Primary Data (Processed) 2019

Regression equation for local tourists:

Y = 12,691 + 0,000009510 X1 - 0,00000003561 X2 - 0,011 X3 - 0,93 X4 – 0,764 X5

The independent variable that significantly influences the level of local tourist visits is X3: distance. This variable significantly affects the level of 95% on the level of visits to Cimaja Beach due to a P-Value less than 0.005 (<5). Interpretation of the results of adjusting the level of local tourist visits to Cimaja Beach based on the regression model in this study of the independent variables using a regression model that is that the travel cost variable influences the level of visits. The results of this study indicate that the variable travel cost significantly influences the level of visits to Cimaja Beach. That the smaller the travel cost, the higher the intensity of the visit rate. This is also determined by one's income level, that the higher one's income the visit rate will also increase.

Table 4. Analysis of Factors Affecting Foreign Tourists' Visit Rates

Variabel	Koefisien	*P-Value*
X_1	-0,00000004090	0,163
X_2	0,0000000003857	0,865
X_3	0,0000002201	0,979
X_4	0,20	0,002 (*)
X_5	-0,047	0,149

Source: Primary Data (Processed) 2019

Regression equation for foreign tourists:

Y = 2,047 - 0,00000004090 X1 + 0,0000000003857 X2 + 0,0000002201 X3 + 0,20 X4 - 0,047 X5

The independent variable that significantly influences the level of local tourist visits is X4: age. This variable significantly affects the level of 95% on the level of visits to Cimaja Beach due to a P-Value less than 0.005 (<5). This shows that the age variable is positive and significantly influences the level of foreign tourist visits to Cimaja Beach. The value with a positive sign indicates that the younger the age of the tourists, the higher the intensity of the visit to Cimajanya Beach, because physical factors are preferred in surfing trips.

The tourist demand model obtained through regression analysis can be used to create a visitor demand curve through the inversion process of the equation of the level of visits to the cost of travel for local tourists, Y = 12,691 + 0.000009510 X1 and for foreign tourists the regression equation is Y = 2,047 - 0, 00000004090 X1.

Economic Value of Cimaja Beach Tourism

The tourism demand model that has been obtained through regression analysis is used to calculate the consumer surplus. Consumer surplus value is obtained through an integral with a lower limit, namely the lowest costs incurred by visitors and the upper limit is the highest costs incurred by visitors to travel to Cimaja Beach. Based on the survey results it is known that for local tourists it has the lowest cost of Rp. 875,000 and the highest cost is Rp. 950,000. Whereas foreign tourists have the lowest costs of Rp. 21,000,000 and for the highest cost of Rp. 25,000,000 to obtain the integral formula as follows:

Integral formula for local tourists:

$$SK= \int_{875.000}^{950.000} 12{,}691 + 0{,}000009510 \; x \, dx$$

Integral formula for foreign tourists:

$$SK= \int_{21.000.000}^{25.000.000} 2.047 - 0{,}00000004090 \, x \, dx$$

The results of the integral calculation note that the value of consumer surplus for local tourists is Rp. 951,825 per individual per year, while the value of consumer surplus for foreign tourists is Rp. 8,187,999 per individual per year. The average level of local tourist visits is 7 and for foreign tourists is 1.2, thus the value of the consumer surplus for local tourists is Rp. 135,975 per individual per visit and for foreign tourists to Rp. 7,058,620 Both values are greater than the average actual cost incurred by local and foreign visitors which is Rp. 911,900 and Rp. 22,804,640 per individual per visit. If the two values are compared, it can be concluded that visitors get the benefits of environmental services that are greater than the costs incurred. Becker et al (2005) state that the costs incurred by an individual in visiting a tourist location reflect the lower limit of a person's willingness to come to a tourist location.

The total value of the tourism economy can be determined by multiplying the value of the consumer surplus by the number of tourists visiting in a certain period. It is known that the number of local tourists visiting Cimaja Beach in 2019 was as many as 74,340 people and for foreign tourists as many as 5,390 people with surfing tourists as many as 22,302 for local tourists and as many as 4,507 for foreign tourists. Thus the total economic value of surfing tourism in Cimaja Beach in 2019 for local tourists is known to reach Rp. 3,032,514,450 in year and foreign tourists are known to reach Rp. 31,813,200,340 in year so that the total economic value of surfing tourism in Cimaja Beach in 2019 is IDR. 34,845,714,790 in year.or US $. 2,495,737.21 in year.

The existence of Cimaja Beach tourism objects has a positive impact on improving the local economy. Many people get income either directly or indirectly from the tourism sector. Many people work as surf boards rental, tour guide services and lodging rental. The Micro, Small and Medium Enterprises (MSME) sector, especially handicrafts, souvenirs and food also grew well. Tourism is an economic sector that is able to make a significant contribution to the economic growth of a region and the labor market, as well as creating employment opportunities both directly and indirectly through the provision of goods and services needed for tourism activities (Zaei 2013).

Improvement and improvement of facilities by the local government need to be improved to support the comfort of tourists. Increasing the number of visits can have a positive impact in contributing to regional income (PAD) Sukabumi Regency, as well as encouraging economic growth in the community around attractions.

The results of this study can be used as material in making alternative policies for local governments related to the development of attractions in Cimaja Beach. For investors, the results of this study can be information material for investment opportunities in the tourism sector which is currently being heavily promoted by the government.

CONCLUSIONS

Consumer Supplement for local tourists is Rp. 951,825 and foreign tourists Rp. 8,187,999. Then the total economic value of

Cimaja Beach tourism for local tourists is known to reach Rp. 3,032,514,450 in year and for foreign tourists known to reach Rp. 31,813,200,340 in year so that the total economic value of surfing tourism in Cimaja Beach in 2019 is IDR. 34,845,714,790 in year.or US $. 2,495,737.21 in year.

The variable that influences the level of visits of local tourists to Cimaja Beach is X3 variable: distance which has a significant effect while for foreign tourists which significantly influences the level of visits to Cimaja Beach which is variable X4: age.

RECOMMENDATION

Cimaja Beach, Pelabuhan Ratu needs to be optimally promoted as a surfing destination because it has high economic potential.

It is expected that the management of Cimaja Beach Tourism Object can develop tourism objects and improve service quality, especially by better management of facilities such as maintenance of public facilities, such as bathrooms, parking lots, trash bins and places to relax.

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