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TOURISM OBJECT VALUATION DETERMINED BASED ON ENVIRONMENTAL SERVICES USING TRAVEL COST METHOD AT TEGAL CITY ALAM INDAH BEACH

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Abstract

Alam Indah Beach is located in a strategic urban coastal area so it has a very high potential to be used as a tourist attraction. This study aims to determine descriptively the analysis of the socio-economic characteristics of visitors and to know quantitatively the economic value of the Alam Indah Beach Tourism Object and the relationship between several variables that affect the number of visits from the object. This research is a quantitative study with primary and secondary data collection through library research and field studies using interviews, observation, and questionnaires. The results of the study reveal that the total cost variable has the most significant influence on the number of tourist visits, reaching 80.27% and resulting in a total consumer surplus of IDR. 130.355.024, willingness to pay of IDR. 136,497, and an economic valuation of IDR. 35,508,314,810. Major economic benefits from tourism activities in Alam Indah beach brings socio economic improvement of the local community. The result of economic value of beach tourism object could be a reference for managers and local governments to balance between beach as a preservation with additional income for local governments and societies.

Keywords: Alam Indah beach; consumer surplus; economic value; natural resources; travel costs.

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INTRODUCTION

Indonesia has an archipelagic geographical characteristic with an estimated number of large and small islands of 17,504 islands and a productive coastline of 81,000 square kilometers (Arsana, 2014). Thus, it can be concluded that Indonesia has the largest coastal area in the world. Tegal City is a city that is traversed by the coastline in the northern coastal area of Central Java Province so that it has the potential for coastal tourism which is quite attractive to tourists (Muttaqin et al., 2015), one of which is the Alam Indah Beach Tourism Object. The beach which has an area of about 16 ha is directly adjacent to the fishing port and fish auction, making the beach location quite strategic. The shoreline is quite sloping and has a variety of facilities that support natural beauty such as spots forest mangrove, multifunctional recreation parks, platforms, gazebos, and other public places that make it more attractive for tourists to visit. This makes Alam Indah Beach a tourist attraction that has a fairly high intensity of visitors every year.

All tourism potentials owned by Alam Indah Beach with characteristics and facilities that are quite capable and high visitor intensity make the existence of these objects very important and strategic in the tourism sector by generating Regional Original Income (PAD) and becoming a sector for the economic

development of the surrounding community in terms of absorption labor. This makes it important to maintain the existence of Alam Indah Beach tourism to gain economic benefits in the future. Economic benefits can be provided with a payment mechanism for environmental services by anyone who has benefited from the tourism object (Ingram et al., 2014). It is a payment scheme to protect and restore the availability of goods and services so that they can continue into the future. In addition, this beach tourism object is a public good that is used specifically by the public so that there may be an externality impact that can cause market failure of a public good that has no market value (Horne, 2019).

Understanding the importance of the correlation between benefits and the costs of environmental services and the impact of market-destroying externalities on tourism objects, it is necessary to estimate the valuation of these attractions. The method used to evaluate tourist objects in the form of beaches is the travel cost method. This method is usually used to determine the value of area related to ecosystems and natural resources such as a national park, beach, and other outdoor tourism objects that related to ecosystems and natural resources (Solikin et al., 2019).

In general, the travel cost method describes the theory of demand with the concept of consumer surplus in it. Consumer surplus in the form of the level of consumer willingness to pay (willingness to pay) as a result of enjoying the benefits of environmental services provided by the tourism object. The travel cost method uses an individual travel cost approach (Individual Travel Cost Method). The travel cost approach based on the individual was chosen because of its advantages in the form of technological advances and the ability to describe the social and economic characteristics of visitors which are difficult to find when using the travel cost method based on regional zones (Blackwell, 2007).

The tourism object that have been appraised are Batu Karas beach in Pangandaran (Zulpikar et al., 2017), the result of the research are travel costs, distance and duration of visits have a significant effect on the level of tourist visits to Batu Karas Beach, while the age of visitors, income, level of education and number of group members have no significant effect on the level of visits. This method produced an estimated value of Batu Karas beach of IDR 86.5 billion. Based on the explanation above, it is necessary to conduct the valuation of Pantai Alam Indah using the individual travel cost method.

Research objectives of study are:

a) Identifying the condition of the Alam Indah Beach Tourism Object related to the intensity of visitors and the contribution of income to the current Regional Original Income (PAD) compared to the previous year.
b) Knowing descriptively the analysis of the socio-economic characteristics of visitors at the Alam Indah Beach Tourism Object.
c) Identify quantitatively in the form of a relationship between the dependent variable in the form of the number of visits with several independent variables that support the Alam Indah Beach Tourism Object.
d) Determine consumer surplus and estimate the valuation of environmental service-based tourism objects at the Alam Indah Beach Tourism Object.

METHOD

A. Types of Data

Data used in this paper is quantitative data in the form of recap data of visitor questionnaires which are processed to determine the relationship of variables related to the number of visits and to determine the economic value of the object.

B. Data sources

The data sources used by the author in this study are primary and secondary data sources. Primary data includes data

obtained from observations in the form of surveys and direct interviews with visitors with the media in the form of questionnaires. Secondary data includes data obtained directly from related managers such as the accumulated number of visitors and annual income as well as those obtained indirectly through websites such as annual budget realization reports and data on entrance fees for tourist objects.

C. Scope of Research

The research was carried out covering the entire area of the Alam Indah Beach Tourism Object with the limitation of tourist locations being only the main tourist attractions and not considering additional tourism around objects such as water, campgrounds, and urban forest tours. The research was carried out from January 4, 2021 to April 4, 2021 according to permission from the tourism agency by sampling visitor data every Saturday and Sunday so that the accumulation of sampling time was 24 days. Data analysis includes descriptive socio-economic analysis of visitors and statistical quantitative analysis with multiple linear regression. Multiple linear regression is a type of regression where the dependent variable shows a linear relationship with two or more independent variables. Multiple linear regression was used to determine the estimated economic value of the Alam Indah Beach Tourism Object. Visitor accumulation data uses projected annual visitor numbers in 2021 using the trend from 2015 to 2020.

D. Sampling Techniques

Samples were taken from respondents who visited the Alam Indah Beach Tourism Object by chance and unintentionally which were suitable to be used as data sources. The author communicates with respondents directly to tourist sites and then asks for permission to conduct research surveys by filling out questionnaires that have been prepared. Therefore, the author uses a sampling method in the form of accidental sampling. According to Etikan et al. (2016), accidental method is applicable to both qualitative and quantitative studies and place primary emphasis on generalizability (i.e., ensuring that the knowledge gained is representative of the population from which the sample was drawn). Some limitations of accidental methods according to Etikan et al. (2016), are researcher subjective and biased in choosing the subjects of the study and impede the researcher's ability to draw inferences about a population. According to (Saptutyningsih & Ningrum, 2017) the number of samples that will be used as research can be found using the Slovin Formula as follows:

$$n = \frac{N}{(1 + Nd^2)}$$

Description:

n = number of samples needed

N = number of population

d = limit of error or absolute precision

Limit of error or absolute precision (d) or the tolerance value used is 10% because the error rate can still be considered in the selection of a random sample. Then, the population uses the average number of daily visitors in 2020 for 24 days, so the minimum number of samples that can be taken refers to the Slovin Formula as follows:

$$n = \frac{N}{(1 + Nd^2)}$$

$$n = \frac{25.224}{1 + (25.224)(0.1)^2}$$

$$n = 99.61 \text{ or } 100$$

E. Limitation of Sampling

1) The minimum age limit of respondents to be sampled is 15 years.
2) Samples were obtained from visitors who entered by paying a levy in the form of entrance tickets and parking

tickets assuming the tickets were charged on Saturdays and Sundays.

3) Revenue is only calculated from entrance tickets and parking tickets from Pantai Alam Indah Tourism Object and ignores visits to water parks, campgrounds, and urban forest tours.
4) Visitors are assumed to only visit one tourist attraction, namely Alam Indah Beach.
5) There are no visitors with an income of IDR 0.

F. Operational Definition of Research

Variables used in processing sample data include the dependent variable in the form of the frequency of visits per tourist within a period of one year and independent variables which include the following.

1) Travel costs (travel costs) are costs incurred by tourists both costs to the location of tourist objects in the form of consumption costs, transportation costs, transportation rental costs, and other costs as well as costs while in tourist attractions such as consumption costs, entrance and parking fees, costs public toilets, equipment rental fees, documentation fees, and other costs expressed in Rupiah (IDR).
2) Age is the age of tourists expressed in years.
3) Income of tourists received per month and is expressed in Rupiah (IDR).
4) Tour duration is the maximum period of time that can be visited by tourists expressed in hours.
5) Education level is the last education held by tourists to date.
6) Travel duration the maximum period of time that can be taken to reach the object location by tourists expressed in hours.

RESULTS AND DISCUSSION

A. General overview

1. Description of Research Objects

Alam Indah Beach is one of the local tourist destinations in the Tegal City area. Located on Jalan Sangiran, Mintaragen Village, East Tegal District which has an area of about 16 ha. This tourist attraction is located in an urban environment which is 500 m from the main national road so as to facilitate accessibility for visitors even though there is no special city transportation route to get to the tourist area. Visitors can easily use any transportation because the path is adequate with a width of ± 6 m, has been accompanied by clear directions, and there is a gate that reads Pantai Alam Indah, making it easier for visitors to access the location. Geographically, this beach is located at latitude 6°51'6.3" South Latitude and longitude 109° 08' 34.1" East Longitude. Based on the Regional Regulation of the City of Tegal Number 4 of 2012 concerning the Spatial Plan of the City of Tegal in the years 2011-2033, Alam Indah Beach is located in a tourism zone bordering the following areas.

North side : Java Sea
East side : Halmahera Street and Gung River
South side : Java Street and settlement
West side : Java Street and Harbor

The location map for Alam Indah Beach Tourism Object is as follows:

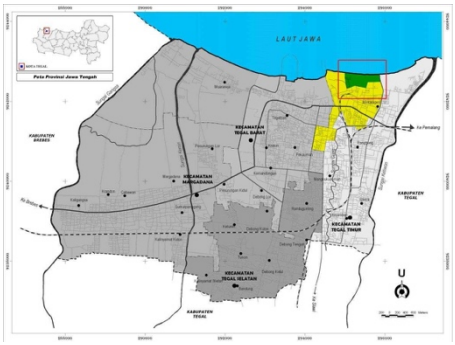

Figure 1. Map Location of Alam Indah Beach Tourism Object

Source: (Fatkhussalam, 2013)

Alam Indah Beach has a total length of about 1000 m located on the North Coast of Java facing the Java Sea. The beach has physical characteristics in the form of sloping contours, the waves are not so heavy and high, and abrasion is rare but experiences sedimentation on average 3 m per year. The beach contains dense brown sea sand that is easily absorbed by water so it is not easily affected by flooding. There are several cypress trees and mangroves around the beach so that apart from reducing abrasion, it also adds to the attraction of tourists to visit. Breakwater stones that are still solidly standing at certain points and are often used as spots for fishing are a distinctive feature of this tourist attraction.

Alam Indah Beach Tourism Object is equipped with several recreational facilities and public facilities that support tourism potential on the beach. Recreational facilities currently available include water parks, marine monuments, mangrove, tour boats, water tricycles, platforms, giant letters that read "Pantai Alam Indah", viewing post, art village, campground, and entertainment stage. Public facilities currently available include a large parking area for motorbikes and special cars, houses of worship in the form of a mosque, fairly clean toilets, stalls along the coast, 6 lighting points, and several huts or pavilions to gather and rest for a while.

2. Description of Visitor Intensity

Alam Indah Beach is a local beach tourist attraction with the highest number of visitors in Tegal City. According to data from the Youth, Sports and Tourism Office of Tegal City, the number of tourist visits to tourist attractions in the last five years tends to be stable and slightly fluctuating. The average is in the range of approx. 500,000 visitors except in 2020 which tends to decrease drastically due to the Covid-19 with around half of the normal number of annual tourist visits. In March – May and October 2020, this beach attraction experienced a temporary closure to reduce the mobility of the community which then had a significant impact on the decline in the number of visitors in 2020. The historical data for the annual number of tourists to Alam Indah Beach Tourism Object in 2015-2020 as follows:

Table 1
Number of Annual Visitors 2015-2020

Year	Number of visitors
2015	523.811
2016	506.480
2017	538.229
2018	498.884
2019	502.096
2020	286.857

Source: Processed from the Youth, Sports and Tourism Office of Tegal City

Visitors to the Alam Indah Beach Tourism Object are dominated by local tourists who come from the City of Tegal itself. However, it is undeniable that there are also many people from outside

the city who are close to Tegal City such as Tegal Regency, Brebes Regency, and Pemalang Regency who visit the beach for a moment to vacation and unwind. During the Lebaran and New Year holidays, some people from outside the city, both in Central Java Province and outside Central Java Province, took the time to visit Tegal City in order to visit their family villages and at the same time take an excursion to Alam Indah Beach Tourism Object. As a result, from year to year during the month period, it is natural that there is a significant surge in visitors. Although the scope of the visiting area is not too wide with the scale of visits still being local, the enthusiasm of the local community remains high so that this beach tourism object can remain productive and able to develop from year to year.

3. Income Description

The existence of fluctuating visitors affects the income of the Alam Indah Beach Tourism Object. The majority of income is obtained from user fees for both entrance tickets and parking. Based on the Tegal City Regional Regulation Number 3 of 2019 concerning Business Service Retribution, the entrance fee levy is distinguished for weekdays and holidays and each is further differentiated for adults over 12 years old and children 5-12 years old. In addition to the entrance fee levy, there is a parking fee levy which is differentiated based on the type of transportation. In addition to the daily entrance ticket, there is also an entrance ticket that is paid monthly for visitors who subscribe. In addition to income from entrance tickets and parking, the majority are also obtained from user fees, which are dominated by kiosk rentals for permanent traders. In addition to permanent traders, non-permanent traders such as traveling traders are also charged with different rates.

Thus, the income earned over the last five years tends to increase except for 2020, which experienced a decline in income due to a reduction in visitor intensity due to mobility restrictions from the Covid-19 pandemic. The income obtained will later be included in the Regional Original Income (PAD) of the City of Tegal in the regional retribution income post. The income generated from the Alam Indah Beach Tourism Object from year to year tends to contribute to a fairly increasing PAD except in 2020 itself which only contributed half of the previous year, which was 0.34% of the total PAD. The historical data for the annual revenue from the Alam Indah Beach Tourism Object compared to the total PAD in 2015-2020 is as follows:

Table 2
Total Income to Total PAD in 2015-2020

Year	Total income	Total PAD	Percentage of total income to PAD
2015	930.545.200	271.601.407.419	0,34%
2016	1.058.231.900	287.343.889.954	0,37%
2017	1.642.130.000	306.830.528.135	0,54%
2018	1.616.111.175	275.021.448.594	0,59%
2019	1.617.512.250	285.575.788.984	0,57%
2020	940.392.500	275.042.870.000	0,34%

Source: Processed from the Tegal City Youth, Sports and Tourism Office and the 2015-2020 City Budget Realization Report

B. Descriptive Socio-Economic

Analysis of Visitors. Descriptive socio-economic analysis of visitors describes the profile of tourists who visit the Alam Indah Beach Tourism Object. The aim is to facilitate the interpretation of the distribution of large amounts of raw data in the form of visitor characteristics as a basis for the development of tourism objects in the future. The distribution of visitor characteristics is based on the results

sampling with a questionnaire survey as follows.

1. Total cost

Table 3

Percentage of Respondents

Total cost (IDR)	Percentage (%)
≤ 50.000	9
50.001 - 100.000	57
100.001 - 150.000	14
150.001 - 200.000	15
≥ IDR200.001	5
Total	**100**

Source: Processed from Visitor Questionnaire Data

It is known that the total cost is dominated by the group ranges from IDR. 50,001 to IDR. 100,001 with a percentage of 57% of respondents. On the other hand, the total cost by minority groups is in the range of more than IDR. 200,001 with a percentage of the number of respondents being 5%. This indicates that the characteristics of visitors tend to minimize spending by maximizing the potential profits received from Alam Indah Beach tourism.

2. Total income

Table 4

Percentage of Respondents

Total income (IDR)	Percentage (%)
≤ IDR 1.000.000	16
1.000.001 - 2.000.000	24
2.000.001 - 3.000.000	31
3.000.001 - 4.000.000	18
4.000.001 - 5.000.000	7
≥ 5.000.001	4
Total	**100**

Source: Processed from Visitor Questionnaire Data

It is known that the total income is dominated by the group ranging from IDR2,000,001 to IDR3,000,000 with a percentage of 31% of respondents. On the other hand, the total cost by minority groups is in the range of more than 5,000,001 with a percentage of 4% of respondents. This indicates that visitors tend to have limited funds due to several factors. First, the cost factor for entrance tickets to tourist objects is relatively cheap and can be accepted by all circles of society. Second, the distance factor where the majority of visitors are local people with a position around the City of Tegal so that it does not take time and travel costs to travel to tourist sites.

3. Age

Table 5

Percentage of Respondents

Age (years old)	Percentage (%)
≤ 20	10
21 – 30	36
31 – 40	28
41 – 50	14
51 – 60	10
≥ 61	2
Total	**100**

Source: Processed from Visitor Questionnaire Data

It is known that the total age group is dominated by a group ranging from 21 to 30 years with a percentage of 36% of respondents. On the other hand, age by minority group is in the range group of more than 61 with a percentage of the number of respondents being 2%. This indicates that the characteristics of visitors tend to be at a very productive age and tend to want to take free time more than busy activities so that it is very suitable for the characteristics of those who like to travel.

4. Tour Duration

Table 6
Percentage of respondents' tour duration

Tour duration (hours)	Percentage (%)
≤1	4
2–3	56
4–5	40
≥6	0
Total	**100**

Sources: Processed from Visitor Questionnaire Data

It is known that the length of the tour is dominated by groups ranging from 2 to 3 hours with a percentage of 56% of respondents. On the other hand, the length of tourism by minority groups is in the range of less than 1 with a percentage of 4% of respondents. This indicates that the characteristics of visitors tend to be able to enjoy tourism objects to the maximum by various kinds of natural beauty and supporting infrastructure for the Alam Indah Beach Tourism Object.

5. Education Background

Table 7
Percentage of respondents' education background

Education background	Percentage (%)
Never attend formal school	0
Elementary school	0
Junior high school	6
Senior high school	32
Diploma	25
Undergraduate	37
Total	**100**

Source: Processed from Visitor Questionnaire Data

It is known that the education level is dominated by the undergraduate group with a percentage of 37% of respondents. On the other hand, the level of education by minority groups is in the junior high school group with a percentage of 6% of respondents. This indicates that the characteristics of visitors tend to be at the level of psychological need for high curiosity about tourist objects and high motivation to travel because of more knowledge than higher education.

6. Travel Duration

Table 8
Percentage of respondents' travel duration

travel duration (hours)	Percentage (%)
≤0,25	37
0,26 - 0,50	37
0,51 - 0,75	17
0,76 - 1,00	4
≥ 1,01	5
Total	**100**

Source: Processed from Visitor Questionnaire Data

It is known that the travel duration is dominated by groups ranging from less than 0.25 hours and 0.26 to 0.50 hours with a percentage of 37% of respondents. On the other hand, the travel duration by minority groups is in the range of 0.76 to 1.00 hours and more than 1.01 with a percentage of the number of respondents respectively 4% and 5%. This indicates that the characteristics of visitors tend to be in the coverage area around the City of Tegal so they tend to be quick to get to the location of the Alam Indah Beach Tourism Object.

C. Quantitative Analysis of Visitor Data

1. Determining regression model

To model multiple linear regression into a good and appropriate equation, firstly, a regression model feasibility test is carried out with the classical assumption test as follows.

a) Normality Test

A good regression model is a model that is normally distributed. To test the normality of the model can use two ways as follows.

1) Normality Test Probability Plot

According to Ghozali (2011), the regression model is said to be normally distributed if the plotting (dots) that

describe the actual data follow a diagonal line.

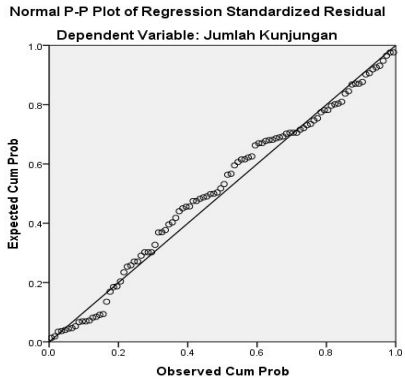

Figure 1. Normality Probability Plot

Source: Processed from IBM SPSS Application 22

It is known that in general it appears that the plotting (dots) have followed a diagonal line, so it can be concluded that the regression model can be said to be normally distributed.

2) Kolmogorov Smirnov Normality Test

The basis for decision making on this normality test is if the significance value is more than 0.05 then the residual value is normally distributed and if the significance value is less than 0.05 then the residual value is not normally distributed.

Table 9
One-sample Kolmogorov Smirnov

Unstandardized Residual		
N		100
Normal parameters[a,b]	Mean	,0000000
	Std. Deviation	,48263518
Most extreme differences	Absolute	,078
	Positive	,073
	Negative	-,078
Test Statistic		,078
Asymp. Sig. (2-tailed)		.141[c]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Source: Processed from IBM SPSS Application 22

It is known that the significance value is at 0.141 which is greater than 0.05. Therefore, it can be concluded that the residual value is normally distributed which indicates a good regression model.

b) Multicollinearity test

The multicollinearity test is part of the classical assumption test in multiple linear analysis which aims to determine whether there is an intercorrelation or a strong relationship between independent variables. A good regression model is characterized by no intercorrelation between independent variables or multicollinearity symptoms. One of the most accurate ways to detect the presence or absence of this multicollinearity symptom is to use the Tolerance and VIF (Variance Inflation Factor) method. According to (Ghozali, 2018), there is no symptom of multicollinearity if the tolerance is more than 0.100 and the VIF is less than 10.00.

Table 10
Collinearity Statistics Tolerance and VIF based on Dependent Variable of visitors number

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Total cost	,183	5,474
Total income	,110	9,056
Age	,242	4,132
Tour duration	,234	4,270
Education background	,395	2,529
Time travel	,789	1,268
a. Dependent variable: Visitors number		

c) Heteroscedasticity Test

The heteroscedasticity test aims to determine whether or not there is a similarity between the variances of the residual values for all observations in the regression model. A good regression model is characterized by the absence of heteroscedasticity symptoms. To test the presence or

absence of heteroscedasticity symptoms from a model, two methods can be used as follows.

1) Heteroscedasticity Test Scatter Plots

According to (Ghozali, 2018) there is no heteroscedasticity if there is no clear pattern in the sense of wavy, widening, and narrowing in the scatter plots and the points spread above and below the number 0 on the Y axis.

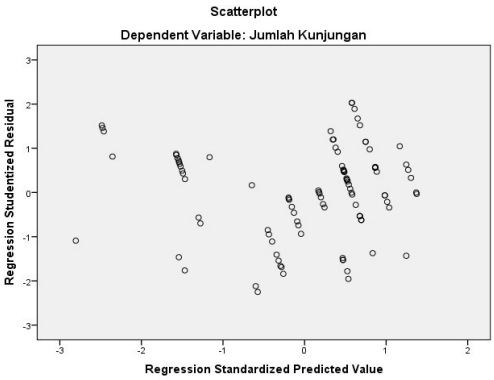

Figure 2. Heteroscedasticity Scatter Plots

Source: Processed from IBM SPSS Application 22 Based on Graph 2 on Heteroscedasticity

Based on Figure 2 regarding Heteroscedasticity Scatter Plots, it can be seen that there is no clear pattern in the plotting data (dots) so it can be concluded that the regression model does not have heteroscedasticity.

2) Glejser Heteroscedasticity Test

This heteroscedasticity is if the significance value between the independent variable and the absolute residual is more than 0.05 then there is no heteroscedasticity and if the significance value is less than 0.05 then heteroscedasticity occurs.

Table 11
Coefficients of Dependent Variable Abs Residual

Model	Unstandardized coefficient		Standardized coefficient	t	Sig.
	B	Std. Error	Beta		
(constant)	,959	,318		3.018	,003
Total cost	-6,367 E-07	,000	-,126	-,544	,587
Total income	6,489 E-08	,000	,329	1,108	,271
Age	-,007	,005	-,266	-1,330	,187
Tour duration	,101	,056	-,370	-1,818	,072
Education background	-,044	,043	-,159	-,1,013	,314
Travel duration	,070	,100	,077	,696	,4888

a. Dependent Variable: Abs_Res

Source: Processed from IBM SPSS Application 22

It is known that all independent variables with absolute residuals have a significance value of more than 0.05. Therefore, it can be concluded that the regression model does not have symptoms of heteroscedasticity which indicates a good regression model.

Then, after knowing the feasibility of the regression model with the classical assumption test, it can then be determined in advance the relationship between the dependent variable and the independent variable whether it has an effect or not and the

magnitude of its influence in the following ways.

d) Simultaneous F Test

This test aims to determine whether the dependent variable and the independent variables have an effect or not simultaneously. The point is to test the overall influence of the independent variable on the dependent variable. There are two ways to test this simultaneous F as follows.

1) Simultaneous F Test Based on Significance Value

According to (Ghozali, 2018) if the significance value is less than 0.05, it means that the independent variable simultaneously affects the dependent variable.

Table 12
Anova

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	629,689	6	104,948	423,238	.000[b]
Residual	23,061	93	,248		
Total	652,750	99			

a. Dependent Variable: Number of visitors

b. Predictors: (constant), travel duration, age, education background, tour duration, total cost, total income

It is known that the significance value is at 0.00b which is smaller than 0.05. Therefore, it can be concluded that all independent variables simultaneously affect the dependent variable on the number of visits.

2) Simultaneous F Test Based on Arithmetic and Tables values

According to Sujarweni (2014), if F-arithmetic is greater than F-table, then the independent variable simultaneously affects the dependent variable. F-table can use the distribution table F0.05 of 2.19. arithmetic table ANOVA listed for 423,238. It can be concluded that F-arithmetic with a value of 423.238 is greater than the F-table with a value of 2.19 so that all independent variables simultaneously affect the dependent variable of the number of visits.

e) Partial T Test

This test aims to determine whether the dependent variable and the independent variables have an effect or not partially. The point is to test the influence of each independent variable individually on the dependent variable. There are two ways to test this partial t as follows.

1) Partial t-test based on significance value

According to Ghozali (2018) if the significance value is less than 0.05, it can be interpreted that the independent variable partially affects the dependent variable.

Table 13
Coefficients of Dependent Variable Amount

Model	Unstandardized coefficient		Standardized coefficient	t	Sig.
	B	Std. Error	Beta		
(constant)	12,338	,556		21,840	,000

Model	Unstandardized coefficient		Standardized coefficient	t	Sig.
	B	Std. Error	Beta		
Total cost	-3,749E-05	,000	-,822	-18,023	,000
Total income	-1,431E-07	,000	-,081	-1,375	,173
Age	,012	,009	,054	1,371	,174
Tour duration	,347	,099	,141	3,511	,001
Education background	-,005	,077	-,002	-,062	,951
Travel duration	-,589	,178	-,073	-3,309	,001
a. Dependent Variable: Number of visitors					

Source: Retrieved from IBM SPSS Application 22

It is known that the significance value of the independent variables of total cost, length of travel, and length of trip is in a position smaller than the significance value of 0.05 so that it can be concluded that these variables partially affect the dependent variable of the number of visits. Then, it is also known that the significance value of the independent variables of total income, age, and education level is in a position greater than the significance value of 0.05 so that it can be concluded that these variables partially have no effect on the dependent variable of the number of visits.

2) Partial t-test based on arithmetic and tables values

According to Sujarweni (2014) if the t-arithmetic is greater than, if the t-table, the independent variable partially affects the dependent variable. To find the t-table, it can use the distribution table for the0.05 of 1.989. To find the 2014), if the t-arithmetic, table ANOVA listed at -18,023 for the total cost variable, -1.375 for the total income variable, 1.371 for the age variable, 3.511 for travel duration variable, -0.062 for the education level variable, and -3.309 for the old variable. journey. It can be concluded that the variables of total cost, tour duration, and length of trip are outside the t-table between -1.989 and 1.989, so the total cost and travel duration have a negative effect on the dependent variable of visit, while on the other hand the travel duration variable has a positive effect on the dependent variable of visit. For the total income, age, and education level variables are in the t-table between -1.989 and 1.989, these variables have no partial effect on the dependent variable the number of visits. For mapping the position of the variables in the area of influence with the area of uninfluenced, it can be seen in the graphic image as follows:

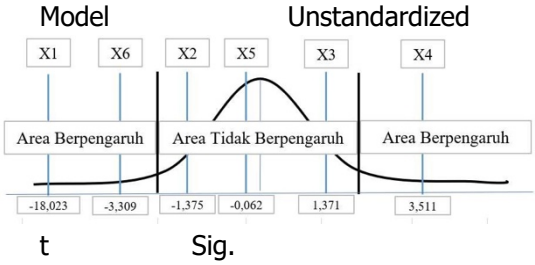

Figure 3. Mapping of Independent Variable Areas

f) Coefficient of Determination (R^2)

Coefficient of determination or commonly referred to as the symbol R^2 used to find out what percentage of the influence of the independent variables simultaneously on the dependent variable. Based on the ANOVA listed, it is known that the R^2 value is 0.965 means that the independent variable simultaneously has an effect of 96.5% on the dependent variable.

g) Predictor Contribution

Predictor contribution is a description of the magnitude of the contribution of influence in percent (%) given by each independent variable to the dependent variable. Predictor contributions are grouped into 2 types, namely effective contribution (SE) and relative contribution (SR). The contribution of the right predictor to find out how much partial influence is independent variables to the dependent variable is the effective contribution (SE). The formula for calculating SE is as follows:

SE (X) % = Regression Coefficient (Beta) x Correlation Coefficient x 100%

It is known that independent variables such as total cost, length of trip, and length of trip have both positive and negative effects based on the t test partial has the magnitude of the contribution to the dependent variable the number of visits, respectively 80.27%, 11.80%, and 1.37%.

A hypothesis that passes the statistical test can be transformed into a regression equation as follows:

Y = 12,338 - 3.749E-05 X1 - 1.431E-07 X2 + 0.012 X3 + 0.347 X4 - 0.005 X5 - 0.0589 X6

Information:

Y = Number of Visits
X1 = Total Cost
X2 = Total Income
X3 = Age
X4 = Tour duration
X5 = Education Level
X6 = Travel duration

Then, the regression equation can be interpreted more clearly as follows.

1) The constant coefficient is 12,338 which means that if the number of independent variables is 0, then the dependent variable in the form of the number of visits is 12,338.
2) The total cost coefficient is -3.749E-05 which hypothetically means that the higher the total cost variable, the lower the number of visits variable. It was concluded from the results of statistical tests that the total cost variable had a partial negative influence of 80.27% on the number of visits variable. This result in line with Dewanta (2010); Solikin et al. (2019); and Zulpikar et al. (2017).
3) The coefficient of total income is -1.431E-07 which hypothetically means that the higher the total income variable, the lower the number of visits variable, from the statistical results, but the total income variable had no partial influence on the number of visits variable.
4) The coefficient of total age is 0.012 which hypothetically means that the higher the age variable, the higher number of visits variable, but from the statistical test results that the age variable had no partial influence on the number of visits variable.
5) Tour duration coefficient is 0.347, which hypothetically means that the higher the tour duration, the higher the number of visits. It was concluded from the results of statistical tests that the total cost variable had a positive effect of 11.80% on the number of visits variable. This result in line with Dewanta (2010); Solikin et al. (2019); and Zulpikar et al. (2017).
6) The education level coefficient is -0.005 which hypothetically means that the higher the education level variable, the lower the number of visits variable, but from the statistical results, the education

level variable had no partial influence on the number of visits variable.

7) The coefficient of travel duration is -0.0589 which hypothetically means that the higher the length of the trip, the lower the number of visits. It was concluded from the statistical test results that the total cost variable had a negative influence of 1.37% on the number of visits variable. This result in line with Zulpikar et al. (2017).

h) Determination of Surplus Consumer

Surplus consumer is obtained from the econometric approach with the output of the total cost coefficient from the multiple linear regression equation of -3.749E-05 and also the number of visits of each individual who is the object of research. The formula for calculating consumer surplus is as follows:

$$CS = \frac{V^2}{-2\beta 1}$$

CS = Consumer surplus
V = Number of visits for each individual sample
β1 = Total cost coefficient

Then, from the consumer surplus of each individual object of research that has been calculated based on the formula above, it can be calculated in aggregate into a total consumer surplus with the conclusion that the value is IDR. 130,355,024 per total number of visits per year of 955 times from 100 samples of research objects. Then, it can also be seen that the average consumer surplus per tourist is IDR. 1,303,550 from the distribution of the total consumer surplus with a total sample of 100 people. Then, the average consumer surplus per tourist per visit or referred to as willingness to pay (WTP) is IDR. 136,497 from the distribution of the average consumer surplus per tourist with the average number of visits per individual sample in a year of 9.55.

D. Determination of the Estimated Value Economic Object Research

After knowing the value of the consumer surplus, then the estimated economic value of the Alam Indah Beach Tourism Object by considering the projection of the number of visitors in the research year, 2021. The projection of the number of visitors in 2021 is calculated using the trend historical data on the number of annual visits from 2015 to 2020. The historical data on the number of visits and their increase during 2015-2020 can be seen as follows:

Table 14
Percentage Increase in Number of Visits 2015-2020

Year	Number of visitors	Increase in number of visitors (people)	Increase in number of visitors (%)
2015	523.811		
2016	506.480	-17.331	-3,31%
2017	538.229	31.749	6,27%
2018	498.884	-39.618	-7,36%
2019	502.096	3.485	0,70%
2020	286.857	-215.239	-42,87%
Average	476.014	-47.391	-9,31%

Based on the average percentage increase in the number of visits by -9.31%, it can be used as a calculation of projected visits in 2021 with the addition of an average percentage increase in the number of visits by -9.31% in the number of visits in the previous year, namely 2020 Then it was found that the projected number of visits in 2021 was 260,139 people.

From the results of willingness to pay (WTP) of IDR. 136,497 and the projected number of visits in 2021 of 260,139 people, it can be calculated the estimated economic value of the Alam Indah Beach Tourism Object by multiplying the two results to obtain a conclusion of a value of IDR. 35,508,314,810.

CONCLUSION

Determination of the economic valuation of the Alam Indah Beach Tourism Object using the Travel Cost Method with an Individual Approach (Individual Travel Cost Method) for the provision of coastal tourism environmental services focuses on descriptive analysis and quantitative analysis.

Descriptive analysis includes mapping the socio-economic characteristics of visitors as the basis for determining the right independent variables in the form of total costs, total income, age, length of travel, length of trip, and level of education.

Quantitative analysis includes determining the right regression model in the form of multiple linear regression models with the dependent variable in the form of the number of visits and the independent variables in the form of total costs, total income, age, length of travel, length of trip, and level of education through statistical tests and test the influence of variables by generating the equation feasible regression as follows:

Y = 12,338 - 3.749E-05 X1 - 1.431E-07 X2 + 0.012 X3 + 0.347 X4 - 0.005 X5 - 0.0589 X6

It can be seen that the variables of total cost, length of travel, and length of trip which only have a partial significant effect on number of visits with a significance value of 5%.

The quantitative analysis was continued by determining consumer surplus with a total consumer surplus of IDR. 130,355,024 and willingness to pay (WTP) of IDR. 136,497. Then, it was continued with the determination of the economic valuation of the Alam Indah Beach Tourism Object in 2021 amounting to IDR. 35,508,314,810. Based on the aforementioned findings, the paper provided a suggestions for the development of research and further beach tourism object attraction, TCM method with categorical regression model was practical to estimate the economic value of beach tourism object. The result of economic value of beach tourism object could be a reference for managers and local governments to balance between beach as a preservation with additional income for local governments and societies.

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