

Feasibility Analysis and Economic Value of Coastal Resources at Cemara Beach as A Tourism Place in West Lombok District

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Abstract

Cemara Beach, West Lombok Regency is a coastal area that has high resources. The purpose of this study is to examine the feasibility of tourism objects, estimate the carrying capacity, assess the potential demand and calculate the economic value of tourism activities in Cemara Beach. This research is a combined qualitative and quantitative study. Data collection through direct observation, interviews, and literature studies with the number of respondents as many 60 visitors. The results showed that the tourist location of Cemara Beach was feasible to be developed as one of the tourist destination objects with a feasibility index has 84,43%. The results of the analysis of the carrying capacity of the region for tourism activities obtained a value of 506 people per day. Based on the results, it was concluded that together (simultaneously) the variable cost of travel to Cemara Beach tourism, distance, previous visiting experience, age, recent education, work time in a month, and income in a month had a significant effect on the variable demand for a visit to Cemara Beach. While partially the previous visiting experience variable has a significant and dominant influence on the visit request. From the calculation of the economic value of tourism activities using the Travel Cost Method, the consumer surplus is Rp. 1,401,340.03 per individual per year and the tourism economic value of Cemara Beach is Rp. 122,757,386,628 per year.

Keywords: Cemara Beach, Feasibility of Tourism Objects, Economic Value

INTRODUCTION

Coastal and marine areas are areas that have the potential to be used as the main capital in the development of a region. Utilization of coastal areas has had a positive impact on increasing community income and foreign exchange. The transition between land and sea in coastal areas has formed a diverse and highly productive ecosystem and provides tremendous economic value to the community (DKP, 2002).

A strong and sustainable regional economic development is an effective collaboration between the use of existing resources, the community and the government. One of the optimal efforts to utilize coastal resources is to develop tourism areas.

According to The World Tourism Organization (WTO) in Luchman Hakim (2004), tourism activities are activities of people who travel "out of their home environment" for no more than one year on vacation, trading or other business. Whereas according to Damanik and Weber (2006) states that

in a broad sense tourism is a recreational activity outside the domicile to break away from routine work or find another atmosphere.

Cemara Beach, Lembar Village, Lembar District, West Lombok Regency is one of the coastal areas geographically located in the southwestern part of Lombok Island. The coastal area of Cemara Beach has relatively natural coastal resource potential, so it is currently one of the alternative tourist destinations.

In terms of socio-economic aspects, Cemara Beach is a place of economic activity with its main pillars of tourism development, fisheries and sea transportation. In this case, coastal resources have an important role and can be said to be the basis of economic development. Traditionally, the coastal area of Cemara Beach is the foundation for some of the people who still depend on their livelihoods from marine products and use the beach as part of the continuity of their livelihoods. Utilization of coastal resources and environmental services of coastal waters tends to develop rapidly along with the development of tourism, marine and fisheries development and other sectors which are directly or indirectly related to tourism.

From the aspect of resource potential, the coastal area of Cemara Beach has a variety of resources that can be utilized for tourism activities.

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This potential is owned by each location with different conditions, therefore it is necessary to know how the condition of coastal resources in the Cemara Beach area so that tourism activities that can be developed by each location can be determined. Selection of tourist sites that are in accordance with tourist activities will affect the level of satisfaction and level of tourist visits.

Tourism activities have existed in the coastal area of Cemara Beach since the 1990s, but so far have not experienced significant developments due to under-optimal management and lack of empowerment to the community regarding the importance of tourism which can be used as an alternative or strategic effort in managing coastal resources which exists.

Based on the description above, this study was conducted to determine the level of feasibility of coastal resources for tourism activities in Cemara Beach; calculate the carrying capacity of the region for tourism activities; reviewing the potential demand (demand) of tourists for tourism activities and calculating the economic value of tourism in Cemara Beach.

The objectives in this study are: (1) Assessing the feasibility of coastal resources for tourism activities in Cemara Beach, West Lombok; (2) Estimating the carrying capacity of the region as a supply condition for tourism activities in Cemara Beach; (3) Assessing the potential demand (demand) of tourists for tourism activities at Cemara Beach; (4) Assessing the economic value of tourism activities in Cemara Beach, West Lombok.

METHODS

Location of research

This research was conducted in June to July 2018 in Cemara Beach, Cemara Hamlet, Lembar District, West Lombok Regency.

Sampling technique

- a. Feasibility of Cemara Beach Tourism Objects
Data collection on the potential of Cemara Beach tourism object is carried out by direct observation of biophysical, socio-economic and cultural data that are potential objects of tourist attraction. In addition, data collection is carried out by interviews from various sources, literature studies and field observations.
- b. Carrying Capacity of Cemara Beach Tourism Area
Data collection of the Tourism Area of Cemara Beach Area by conducting direct observations covering the types of tourism activities, area data used for tourism, the area needed by

tourists, time spent by tourists, and time provided by tourism managers, as well as literature studies

- c. Number of Requests for Cemara Beach Tourism Visits
Conducted by distributing questionnaires and interviews related to requests for tourist visits at Cemara Beach.
- d. Tourism Economic Value of Cemara Beach
Data collection is done by distributing questionnaires and interviews related to data on travel costs and tourist demand and direct observation in the field.

Sample

The sampling method using quoted accidental sampling and the number of samples taken was determined using a linear formula time function ($T = t_0 + t_1n$). From this formula, the number of samples is 60 respondents or visitors to Cemara Beach.

DATA ANALYSIS

a. Feasibility of Cemara Beach Tourism Objects

Methods in assessing the feasibility of tourist objects are carried out by using the assessment criteria specified in the Ministry of Forestry's Object and Tourism Appraisal (ODTW) Guidelines (2003). Assessment criteria consist of Tourism Attractions, Accessibility, Accommodation, Supporting Facilities and Infrastructure. can be seen in Table 1.

Table 1. Feasibility Criteria

No.	Criteria	Quality	Value	Score*
1	Attractions	6		
2	Accessibility	5		
3	Accommodation	3		
4	Supporting Facilities and Infrastructure	3		
Feasibility Level				

The results between quality and values

Then the data from each criterion is calculated using the equation:

$$S = N \times B$$

Explanation :

- S = Score / ranking criteria
- N = Average value on criteria
- B = Value Quality

After the score of each criterion is obtained, then a comparison is made, the feasibility index will be obtained in percent. According to Karsudi (2010) the feasibility index of a tourist area is as follows:

- Feasibility rate > 66.6% (feasible to develop)

- Feasibility level 33.3% - 66.6% (not feasible to develop)
- Feasibility rate <33.3% (not feasible to develop)

b. Carrying Capacity of Cemara Beach Tourism Area

Regional Carrying Capacity is the maximum number of visitors who can physically be accommodated in an area that is provided at a certain time without causing interference to nature and humans. DDK calculations use the following formula (Yulinda, 2007)

$$DDK = K \times \frac{Lp}{Lt} \times \frac{Wt}{Wp}$$

Explanation :

- DDK = Regional carrying capacity
- K = Visitor ecological potential per unit area
- Lp = Area or length of area that can be utilized
- Lt = Unit area for certain categories
- Wt = Time provided by the region for tourism activities in one day (hours)
- Wp = Time spent by visitors for each activity (hour)

The ecological potential of visitors is determined by the condition of the resources and the types of activities developed. The area used by visitors must pay attention to the ability of nature to tolerate visitor activities so that authenticity is maintained Time of visitor activity (Wp) is calculated based on the length of time visitors spend on tours. The visitor's time is calculated by the time provided by the area (Wt), namely the length of time the area is opened in one day for tourism activities Table 2.

Table 1. Tourism Activity

No.	Tourism Activity	ΣK	Lt	Wp	Wt
1	Beach Recreation	1	50 m ²	3	12
2	Mangrove tourism	1	50 m ²	3	12
3	Swim	1	50 m ²	2	10
4	Camping	1	50 m ²	24	24
5	Beach Sports	1	50 m ²	3	12
Total					

Sumber : Yulianda (2007)

c. Demand for Cemara Beach Tourism Visit

The analytical method used is multiple linear regression with the specification of the number of tourist visits influenced by the cost of travel to Cemara Beach tourism, distance, previous visiting experience, age, recent education, work time in a month, and income in a month. The variable measurement scale can be seen in Table 3.

Table 2. Variable Measurement Scale

No.	Variable	Measurement Scale
1	Demand (Y)	1 time 2 times 3 times 4 times
2	Travel Costs for Cemara Beach Tourism (X1)	Transportation costs Consumption Fee Entrance Ticket Fee Parking fee Miscellaneous expense
3	Distance (X2)	Km
4	Previous Visiting Experience (X3)	1 = Very Dissatisfied 2 = Dissatisfied 3 = Enough 4 = Satisfied 5 = Very Satisfied
5	Age (X4)	Years old
6	Latest Education (X5)	SD, SMP, SMA, PT (S1/S2/S3)
7	Working Time (X6)	Days / months
8	Revenue (X7)	Rp. / Month

Furthermore, the data analysis used included multiple linear regression analysis, test coefficient of determination, simultaneous test (F-test) and partial test (T-test).

d. Tourism Economic Value of Cemara Beach

To calculate the economic value of Cemara Beach tourism, the Individual Travel Cost Method was used by calculating the amount of consumer surplus per individual per year who visited the Cemara Beach tourist attraction. The surplus value will reflect the economic value of Cemara Beach Tourism Object. To calculate the value of consumer surplus using the formulation:

$$Dx = Qx = a - bP$$

Explanation :

- DX = Request for visit
- Qx = Number of visits
- a = Regression result constants request visits and travel costs
- b = Regression coefficients and travel costs
- P = Price or amount of travel costs

The above equation is used to produce a consumer surplus as an economic value. To produce a consumer surplus per individual per year, an integral calculation with a lower limit is used, namely the lowest price and the upper limit, namely the highest price, so that it can be informed as follows:

$$SK = \int_{P_0}^{P_1} f(Px)dP$$

Explanation :

- SK = Consumer Surplus
- P₁ = The top price or the cost of a tour of

Cemara Beach
 P_0 = Lowest price or cost of Cemara Beach tourism travel Regression coefficient

The economic value of Cemara Beach tourism can be calculated by multiplying the number of tourists visiting Cemara Beach in 2018 with a surplus of consumers per year.

RESULTS AND DISCUSSION

a. Feasibility of Cemara Beach Tourism Objects

Components that are assessed from Cemara Beach Tourism Object are the attraction of tourist sites, accessibility to reach locations, accommodations that are around tourist sites and also supporting facilities and infrastructure that support the development of tourist sites (5 km radius from the location). The assessment of the components of Cemara Beach attractions is as follows:

- **Attractiveness**

Assessment of the components of Attraction can be seen in Table 4.

Table 3. Attraction

No.	Assessment Element	Qualit y	Valu e	Score*
1	Uniqueness of Natural Resources	6	20	120
2	Variation in Tourism Activities	6	20	120
3	Cleanliness	6	15	90
4	Security	6	20	120
5	Convenience	6	15	90
Total Score			90	540

* The results between quality and values

Cemara Beach has a strong enough attraction to attract tourists' attention and attention. The attraction is in the form of prominent natural resources such as the diversity of vegetation and mangrove ecosystems, flora and fauna, beautiful coastal scenery, outdoor activities such as camping activities, beach sports (playing soccer and volleyball), and other attractions in the form of cleanliness, safety and comfort in tourist locations.

- **Accessibility**

Assessment of the Accessibility component can be seen in Table 5.

Table 4. Accessibility

No.	Assessment Element	Qualit y	Valu e	Score*
1	Road conditions	5	12	60
2	Distance from residence	5	12	60
3	Road type	5	15	75
4	Travel time from residence	5	20	100
Score Total			59	295

*The results between quality and values

The journey from the city of Mataram to the tourist location of Cemara Beach can be reached in approximately 30 minutes by motorbike, car, and public transportation. The type of road to the tourist location Cemara Beach is an asphalt road with a width of more than three meters. Good road conditions with a distance of around 15-25 km from the city of Mataram make access to these locations classified as easy or not so difficult.

- **Accommodation**

An assessment of the Accommodation component can be seen in Table 6.

Table 5. Accommodation

No.	Assessment Element	Qualit y	Valu e	Score*
1	Number of Lodging	3	12	36
2	Number of rooms	3	12	36
Score Total			24	72

*The results between quality and values

Cemara Beach attractions have accommodation facilities in the area, including an inn with rooms with barn house architecture or traditional sasak tribal houses. In addition to the Cemara Beach tourist area there are also several inns that can be found outside the tourist area or along the main road to tourist sites.

- **Supporting Facilities and Infrastructure**

An assessment of the Supporting Facilities and Infrastructure components can be seen in Table 7.

Table 6. Infrastructure Supported

No.	Assessment Element	Qualit y	Valu e	Score*
1	Condition of the Toilet	3	15	45
2	Conditions of places of worship The existence of a place to eat	3	12	36
3	The existence of the Puskesmas	3	15	45
4	Range of Cellular Networks	3	12	36
5		3	20	60
Score Total			74	222

*The results between quality and values

From direct observation on the location of the study found several supporting facilities and infrastructure such as health centers, places of

worship (mosques), West Lombok police office, telephone network, public toilets, the existence of restaurants and stalls available not far from the tourist location of Cemara Beach.

The results of the assessment of Cemara Beach tourism object more fully can be seen in Table 8.

Table 7. Cemara Beach Tourism Score

Criteria	Qualit y	Value*	Score **	Score Max***	Indeks (%)****
Attractions	6	90	540	600	90
Accessibility	5	59	295	400	73,7
Accommodati on	3	24	72	72	100
Facilities and Infrastructure	3	74	222	300	74
Score Total				84,43	

- * Value of Results for Elements / Sub-Elements of Attractions
- ** Multiplication between Quality and Value
- *** The total score of the criteria is multiplied by the number of value elements
- **** Feasibility index: comparison of scores with highest scores in%

From the results of calculations in the table above it can be seen that the tourist location of Cemara Beach is feasible to be developed as one of the tourist destination objects with a feasibility index of 84.05%. For the criteria of attractiveness, the value is very high at 90%. Similarly, accessibility criteria have a value of 73.3%. The accommodation criteria have a value of 100%. The criteria for supporting facilities and infrastructure around the area have a value of 72.5%.

From the results of the assessment that has been done it can be concluded that the tourist location of Cemara Beach has the opportunity to be used as one of the tourist destinations because it provides good offers when viewed from the criteria assessed, namely the criteria of attraction, accessibility, accommodation, supporting facilities and infrastructure in the region this.

b. Carrying Capacity of Cemara Beach Tourism Area

The assessment of the carrying capacity of the area for all tourism activities in Cemar Beach can be seen in Table 9.

Based on the calculation of the total carrying capacity of the Cemara Beach tourist area, it is obtained that the carrying capacity of the area is 506 people per day, while for the carrying capacity of the area per year is 184,690 people per year. The results

of the carrying capacity analysis above can be used as recommendations or inputs in developing the Cemara Beach tourist area so that in the future this region will develop and not overtake the existing carrying capacity and still pay attention to tourism sustainability aspects.

Table 8. Carrying Capacity of Cemara Beach Tourism

No. Ket	Type of activity	Lp	Lt	Wp	Wt	CC
1	Beach	1.240 m	50 m ²	3	12	99
	Recreation					
	Mangrove	15,81 Ha	50 m ²	3	12	158
	tourism					
3	Swim	1,7 Ha	50 m ²	2	10	136
	Camping	1.009 m ²	50 m ²	24	24	20
5	Beach Sports	1.164 m ²	50 m ²	3	12	93
Total						506 every day

c. Number of Requests for Visits

To calculate the factors that influence the demand for visits, the researcher first determines the dependent variable, namely the request for a visit, then the independent variable includes the cost of travel to Cemara Beach tourism, distance, previous visiting experience, age, last education, work time in a month, and income a month. The data collected in the study was processed using SPSS 20 software which was then used to form multiple linear regression models. The model used was the number of tourist visit requests as the dependent variable influenced by independent variables namely the cost of travel to Pantai Cemara tourism, distance, previous visiting experience, age, last education, work time in a month, and income in a month, with the formula:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7)$$

To see more clearly the results of multiple linear regression estimates and the factors that influence the demand for tourism in Cemara Beach can be seen in Table 10.

Table 9. Coefficient of Variable

Variable	Coeffic ient	Std. Error	Std. Coeff	T	Sig
Constant	-0,224	2,073		-0,108	0,914
Travel Costs	0,049	0,205	0,032	0,240	0,811
Distance	-0,243	0,151	-0,202	-1,616	0,112
Previous Visit Experience	0,575	0,194	0,617	2,957	0,005
Age	0,017	0,173	0,014	0,096	0,924
Latest Education	0,420	0,225	0,538	1,864	0,068
Working time	-0,331	0,296	-0,248	-1,119	0,268

Income	0,208	0,204	0,156	1,022	0,311
R ² = 0,848					
Adjusted R ² = 0,828					
F _{Count} = 42,155					

Based on the results of the analysis of the factors that influence the visit demand, the regression model equations obtained are as follows:

$$Y = -0,224 + 0,049X_1 - 0,243X_2 + 0,575X_3 + 0,017X_4 + 0,420X_5 - 0,331X_6 + 0,208X_7$$

- Y = Number of requests for visits to Cemara Beach tours
- X₁ = Travel costs (TC) to tourist attractions
- X₂ = Distance
- X₃ = Previous visiting experience
- X₄ = Age
- X₅ = The respondent's last education level
- X₆ = Working time of respondents in a month
- X₇ = Income

• **Determination Coefficient Test**

The coefficient of determination is used to test the goodness-fit of the regression model. The amount of the adjusted R² value is 0.828 which means that the variability of the dependent variable can be explained by the variable variables independent in the model by 82.8 percent. While the remaining 17.2 percent is explained by other variables outside the regression model.

• **Simultaneous Influence test (F-test)**

The simultaneous influence test is used to determine whether the independent variables simultaneously or simultaneously affect the dependent variable.

Test criteria:

H₀ : β₁ = β₂ = β₃ = β₄ = β₅ = β₆ = β₇ = 0 there is no effect of independent variables together on the dependent variable.

H₁ : β₁ = β₂ = β₃ = β₄ = β₅ = β₆ = β₇ ≠ 0 there is an influence of independent variables together on the dependent variable. While the specifications are as follows :

- a. If F count < F table, then H₀ is accepted
- b. If F count > F table, then H₀ is rejected and H_a is accepted, meaning that together the independent variables affect the dependent variable or there is a significant relationship.

The results of the F-Test can be seen in Table 11.

Table 10. F-Test Results

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	593.418	7	84.774	42.155	0,000
Residual	106.582	53	2.011		
Total	700.000	60			

From the results of statistical calculations obtained F count of 42.155 with a significance level of 0.000. If seen from the significant value of F, it is obtained that F table with df₁ = 7 and df = 60 - 7 = 53 is equal to 2.19. Thus obtained F count (42.155) > F table (2.19) which means H₀ is rejected and H_a is accepted. It can be concluded that simultaneously the variable cost of travel to Pantai Cemara tourism, distance, previous visiting experience, age, education, work time in a month, and income in a month have a significant effect on the variable demand for a visit to Cemara Beach. So it can be said that the regression model functions $Y = -0,224 + 0,049X_1 - 0,243X_2 + 0,575X_3 + 0,017X_4 + 0,420X_5 - 0,331X_6 + 0,208X_7$ produced can be used to determine the effect that occurs between the independent variable and the dependent variable.

• **Partial Test (T-Test)**

The t test is a test used to determine the effect of each independent variable on the dependent variable. Statistical tests can be done by looking at and comparing t tables with t count. Provisions for decision making as follows :

- a. If t count < t table, then H₀ is accepted, which means that each independent variable has no effect on the dependent variable or there is an insignificant relationship.
- b. If t count > t table, then H₀ is rejected and H_a is accepted, which means that each independent variable has an effect on the dependent variable or there is a significant relationship.

Based on the calculation results, the value of T table for df = 52 (n - k - 1 = 60 - 7 - 1 = 52) with a significance level of -0.108 is 2.006. Partially the most influential variable on visit demand is variability in previous visiting experience with T positive count is 2.957 and the significance level is 0.005. If a comparison is made, then T count (2.957) > T table (2.006) so that H₀ is rejected and H_a is accepted. The hypothesis can be concluded which states that there is a significant and positive influence between previous visiting experience on demand Cemara Beach tourist visits are accepted or proven. This means that if you have previous visiting experience it will result in an increase in the number of requests to Cemara Beach tourism.

The positive influence of previous visiting experience on the number of Cemara Beach tourism requests is due to the cost of going to the tourist attraction is not too high or affordable making those who have come before and feel satisfied will have the intention to return.

d. Tourism Economic Value of Cemara Beach

To calculate the economic value of Cemara Beach tourism, the individual travel cost method is used, namely by calculating the consumer surplus value of each individual per year. Based on the calculation of the economic value of Cemara Beach tourism, the results are shown as shown in Table 12.

Table 11. Total Value of Economic Cemara Beach

Tourism	
Consumer Surplus (Per Visit)	Rp. 467.113
Consumer Surplus (Per Year)	Rp. 1.401.340,03
Actual Receipts (July 2017 - June 2018)	Rp. 613.200.000
Economic Value of Tourism in Cemara Beach (July 2017 - June 2018)	Rp. 122.757.386.628

Based on the results of the calculation of the table above, obtained a consumer surplus per individual per year of Rp. 1,401,340.03 where visitors who come to Cemara Beach travel on average have visited the place on average 3 times, so it is known that the surplus that consumers enjoy because of their ability to pay exceeds the actual demand, where the actual value or average price of expenditure the cost of Cemara Beach tourism trips for individuals is Rp. 77,250 and a surplus of consumers a year is Rp. 1,401,340.03 per individual per year or Rp. 467,113 per individual per one visit. To obtain total economic value, the consumer surplus value per individual per year is Rp. 1,401,340.03 multiplied by the number of visitors from July 2017 to June 2018 which is equal to 87,600 visitors, so that the total tourism economy value of Cemara Beach is Rp. 122,757,386,628 per year.

If this is compared to the revenue obtained by the manager only from the entrance ticket and parking donation of Rp. 7,000 per person per visit, so the amount of income obtained from Cemara Beach tourism can be calculated as much as Rp. 613,200,000 per year. The amount of this value is only 0.52% of the total tourism value of Cemara Beach based on the annual travel cost method where this percentage in the calculation does not involve transportation costs, consumption, souvenirs and other costs incurred by the respondent.

CONCLUSION

1. The Cemara Beach tourist attraction is feasible to be developed as one of the tourist destination objects with a feasibility index of 84.43%.
2. The results of the analysis of the carrying capacity of the area for Cemara Beach tourism obtained the value of Regional Carrying Power

of 506 people per day and 184,690 people per year.

3. There are variables that have a significant and most dominant effect on the visit demand variable, namely the previous visiting experience variable with a calculated t value of (2.957) > t table (2.006) and a significance value of 0.005.
4. The economic value of tourism activities using the Travel Cost method of Rp. 122,757,386,628 per year with a consumer surplus per individual per year is Rp. 1,401,340.03.

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