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Economic Valuation of Lapin Beach Tourism in Rupat Utara Sub-District, Bengkalis Regency

Penilaian Ekonomi Wisata Pantai Lapin di Kecamatan Rupat Utara Kabupaten Bengkalis

Cici Y.P. Siregar[1], Trisla Warningsih[1*], Darwis[1]
[1]Department of Fishery Socio-Economics, Faculty of Fisheries and Marine,
Universitas Riau, Pekanbaru 28293 Indonesia
**email:* trisla.t.warningsih@lecturer.unri.ac.id

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Abstract

Bengkalis is one of the districts in Riau Province with a strategic position in developing coastal tourism because it deals directly with international shipping. Lapin Beach is a tourist attraction in the Rupat Utara District, Bengkalis Regency. This research was conducted at Lapin Beach, Tanjung Punak Village, in March 2023. This research aimed to determine the factors that influence the number of visits to Lapin Beach and the economic value of Lapin Beach. The method used in this research is a survey method to provide a detailed description of the background, characteristics, and typical characteristics of a general object or event. Data analysis uses multiple linear regression methods, and travel cost analysis uses the travel cost method approach. The research results show that the factors that influence the number of tourist visits are influenced by travel costs, distance, income, education, and length of time knowing about the existence of the beach, so the consumer surplus value obtained is IDR 251,917,538.8. The total economic value of Lapin Beach is IDR 118,356,787,199.48.

Keywords: Consumer surplus, Economic valuation, Lapin beach.

Abstrak

Bengkalis merupakan salah satu kabupaten di Provinsi Riau yang mempunyai posisi strategis dalam pengembangan wisata pesisir karena berhubungan langsung dengan pelayaran internasional. Pantai Lapin merupakan salah satu objek wisata yang berada di Kecamatan Rupat Utara Kabupaten Bengkalis. Penelitian ini dilakukan di Pantai Lapin Desa Tanjung Punak pada bulan Maret 2023. Penelitian ini bertujuan untuk mengetahui faktor-faktor yang mempengaruhi jumlah kunjungan ke Pantai Lapin dan nilai ekonomi Pantai Lapin. Metode yang digunakan dalam penelitian ini adalah metode survei untuk memberikan gambaran rinci tentang latar belakang, ciri-ciri, dan ciri khas suatu objek atau peristiwa secara umum. Analisis data menggunakan metode regresi linier berganda, dan analisis biaya perjalanan menggunakan pendekatan metode biaya perjalanan. Hasil penelitian menunjukkan bahwa faktor-faktor yang mempengaruhi jumlah kunjungan wisatawan dipengaruhi oleh biaya perjalanan, jarak, pendapatan, pendidikan, dan lama mengetahui keberadaan pantai, sehingga nilai lebih konsumen yang diperoleh sebesar Rp 251.917.538,8. Total nilai ekonomi Pantai Lapin sebesar Rp 118.356.787.199,48.

Kata kunci: Surplus konsumen, Penilaian ekonomi, Pantai Lapin

1. Introduction

Bengkalis Regency is a water area located covering the east coast of Sumatra Island between 2°30 N, - 0°17 N and 100°52 E, - 102°52, -102°E. Bengkalis Regency has an area of 30,646.83 km², including islands or land and sea. Tanjung Punak Village is one of the villages in Rupat Utara District, Bengkalis Regency. Tanjung Punak Village has an area of 7,300 hectares, consists of 3 hamlets, 4 RWs, and 9 RTs, and has a population of 1,241 people. Tanjung Punak Village is an area that has extraordinary marine tourism potential, visible from its white sand beaches, beautiful views, and several mangrove forest areas that are still well preserved. One of the beaches that is currently a popular tourist attraction is Lapin Beach. The Lapin Beach tourist destination has unique characteristics that make this beach busy with many tourists. The condition of the fine sandy beach is one of the supporting factors for visitors in carrying out tourist activities, for example, swimming, playing on the beach sand, and so on.

The existence of this beach as a tourist area can increase the community's moral values and maintain the existence and sustainability of Lapin Beach tourism. Furthermore, the existence of this beach can be classified as a type of environmental service that can provide economic value for the community in Tanjung Punak Village to increase household income. Economic value is received through payment schemes for environmental services from various parties who benefit from these environmental services. The payment mechanism for ecological services in Indonesia is regulated in Law No. 32 of 2009 concerning Environmental Management and Protection.

Economic assessment is an effort to assess the potential of all or part of the use of environmental natural resources to obtain environmental economic value. The values obtained from this assessment are in the form of total economic value, recovery value, and mitigation value from damage/pollution (Fesenmaier, 2017; Gretzel, 2015; Mayer, 2014; Pegas, 2014). The economic value of natural resources and the environment is the overall measurement of a person's willingness to pay (WTP) for goods and services to obtain others. This concept is called a person's willingness to pay for the goods and services produced.

Economic value can be used as a basis for financial valuations of sustainable tourism development (Sukwika & Kusmana, 2018; Sukwika & Kasih, 2020; Sukwika & Putra, 2020). In principle, the travel cost method obtains a demand model, while the consumer surplus concept determines values and comparisons (Matthew, 2019). The travel cost method also calculates the travel costs visitors must sacrifice while doing tourism activities. The costs incurred by visitors are used to calculate the estimated economic value of natural resources and the environment as a tourist attraction. This research aims to determine the factors that influence the number of visits to Lapin Beach and the economic value of Lapin Beach.

2. Material and Method

2.1. Time and Place

This research was conducted in March 2023 at Lapin Beach, Tanjung Punak Village, Rupat Utara District, Bengakalis Regency. Determining the research location was carried out purposefully, with several considerations regarding the uniqueness of Lapin Beach, with its long, beautiful stretch of beach and being one of the tourist attractions that are being developed.

2.2. Methods

The method used in this research is the survey method. According to Sugiyono (2020), the survey method is research carried out using questionnaires as a research tool on large and small populations. Still, the data is from samples taken based on that population. So that relative occurrences, distributions, and relationships between sociological and psychological variables will be found. Research using surveys aims to describe the background and characteristics of a general object or event.

2.3. Data Analysis

An analysis was conducted using multiple linear regression analysis to understand the factors that impact the number of visits and economic value of Lapin Beach. The travel cost method approach was also utilized for the travel cost analysis. Multiple linear regression analysis is used to determine the direction of the two variables used by measuring the magnitude of the influence of the independent variable on the dependent variable (Ghozali, 2018). The equation of multiple linear regression is:

$$Y = a - b_1X_1 + b_2X_2 + b3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + \mu$$

Information:

Y : Visit frequency
A : Intercept
B : Regression coefficient
X1 : Travel costs
X2 : Distance
X3 : Income

X4 : Education
X5 : Age
X6 : Gender
X7 : Long known about the existence of the beach

Once the demand function for tourism is known, consumer surplus can be estimated. Consumer surplus in the travel cost method states how much a person assesses a tourist destination based on how many visits are made in a specific time (Fauzi, 2014). The consumer surplus in the demand function obtained is usually linear, where the demand function can be calculated through the following steps:

1. Calculate the value of the area under the demand curve: U = $\int_0^v (fx)x$
2. Calculate the limiting value of the average trip cost: C = $\left(\frac{v}{a}\right)$
3. Calculating the area of the curve below the average limit price (C): R = V × C
4. Consumer surplus value: CS = U-R
5. Calculation of economic value: NET = $\frac{CS \times N}{L}$

Information:
U : The area of value under the demand curve
C : Limiting value of the average trip cost
R : The area of the curve below the average limit price
CS : Consumer surplus
N : Number of population (people)
L : Area (ha)
NET : Total economic value (IDR)

3. Result and Discussion

3.1. Factors that Influence the Number of Tourist Visits to Lapin Beach

Two variables are used to determine the factors influencing the number of tourist visits to Lapin Beach. The variables used are the dependent variable and the independent variable. The dependent variable in this research is the frequency of visits (Y). In contrast, the independent variables used are travel costs (X1), distance of residence (X2), income (X3), education level (X4), age (X5), gender (X6), long known about the existence of the Beach (X7). Multiple linear regression tests measure the relationship between the dependent and independent variables. The measurement results are displayed in Table 1.

Table 1. Multiple linear regression test results

Variable	Coefficients	Standard error	t Stat	P-value	VIF
Intercept	-3,2007	4,1897	-0,7639	0,449740093	
X Variable 1	-0,1500	0,0706	-2,1231	0,040489785	2,986
X Variable 2	-0,5116	0,2403	-2,1293	0,039946452	4,758
X Variable 3	0,4450	0,2112	2,1072	0,041937484	1,444
X Variable 4	-0,5296	0,1797	-2,9475	0,005518715	1,190
X Variable 5	0,2207	0,5686	0,3882	0,700020519	1,112
X Variable 6	-0,0602	0,1144	-0,5261	0,60192655	1,168
X Variable 7	0,7483	0,1574	4,7534	3,01419E-05	2,190
R2	0,8274	Runs Test (Asymp. Sig (2-tailed)			1,000
R2 (adj)	0,7948	F stat			25,323
Sig. F	2,69656E-12				

Based on the results of multiple linear regression calculations, the Lapin Beach tourism demand function model is obtained as follows: Y = -3,200 ─ 0,150X_1 ─ 0,511X_2 + 0,445X_3 ─ 0,529X_4 + 0,220X_5 ─ 0,060X_6 + 0,748 X_7. Multiple linear regression analysis in this study used a significance level of 5%, which means that the researcher accepts a 5% risk of making a type I error. Based on the output results of multiple linear regression analysis, the adjusted R^2 value is 79.0%, meaning that 79.0% of the diversity of tourist demand for the Lapin Beach tourist attraction can be explained by the independent variables in the model. In comparison, the remaining 21% of the diversity in tourist demand is explained by other independent variables not included in the model.

The findings from the multiple linear regression analysis indicate that the OLS (Ordinary Least Square) assumption remains unviolated, as multicollinearity, heteroscedasticity, and autocorrelation are absent. The multiple linear regression analysis findings indicate that the OLS (Ordinary Least Square) assumption remains unviolated, as there is no evidence of multicollinearity, heteroscedasticity, or autocorrelation. The Variance Inflation Factor (VIF) values of the six variables employed in the analysis provide evidence for the following observations: travel costs (2.986), distance (4.758), income (1.444), education (1.190), age (1.112), gender

(1.168), and length of time. Based on the available data (2.190), which indicates that all values are less than 10, it can be inferred that there is no evidence of multicollinearity among the independent variables. Provisions are available for testing the VIF (Variance Inflation Factor) value in multiple linear regression. According to Ghozali (2018), if the Variance Inflation Factor (VIF) value exceeds 10, it indicates the presence of multicollinearity between the variable in question and other independent variables.

According to the findings presented in Table 1, it is evident that the regression analysis yielded numerical values for each variable under consideration. Specifically, the variables of travel costs, distance, income, education, and length of time knowing the existence of the beach obtained values of 0.0404, 0.0399, 0.0419, 0.0055, and 3.01419E-05, respectively. According to the results of the test calculations, a P-value of less than 0.05 was obtained, indicating that the five independent variables employed in the study had a statistically significant impact. The results of this calculation are confirmed by research (Latifah, 2017) that the independent variables that influence Klayar Beach tourism demand are travel costs, income, distance, and length of time, knowing the existence of the beach. Meanwhile, in the regression model, the obtained p-values for age (0.7000) and gender (0.6019) indicate that these variables do not significantly affect the number of visits. This finding is consistent with previous research conducted by Warningsih et al. (2021), which suggests that age and gender do not significantly influence the number of visits. It is worth noting that the lack of significance may be attributed to several variations in the ages of Rupat Island tourist visitors. Based on the findings obtained from the multiple linear regression analysis, it can be concluded that several variables significantly impact the number of visits. These variables include travel costs, distance to the beach, income level, level of education, and the length of time individuals have been aware of the beach's existence. It has been observed that the variables of age and gender do not exhibit a significant influence on the number of visits.

3.2. Consumer Surplus and Total Economic Value

The value of the consumer surplus obtained is equal to the value of the area under the curve (Figure 1).

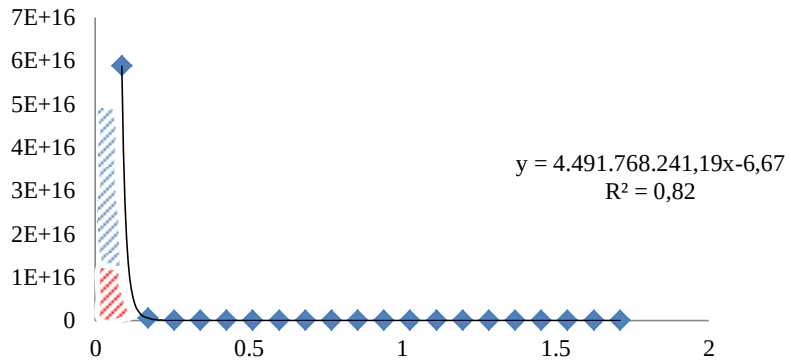

Figure 1. Consumer surplus

The travel cost approach is the fundamental framework employed to estimate the magnitude of consumer surplus. The consumer surplus value is derived by performing integral calculations with an upper limit, representing the maximum cost the respondent is willing to pay. According to the findings of the field survey and meticulous calculations conducted by researchers, it is known that the maximum travel cost for a respondent to Lapin Beach is IDR 4,000,000.00, and the minimum travel cost is IDR 50,000.00. Hence, the consumer surplus obtained according to the formula is IDR 251,917,538.80 per individual every year. Meanwhile, the average total costs incurred by all respondents was IDR 1,909,333 per individual per visit.

The consumer surplus value refers to the indirect value obtained by visitors engaging in tourist activities at Lapin Beach. Meanwhile, the determination of the economic value of Lapin Beach is derived through the quantitative assessment of the total number of individuals who visit the beach. According to our research findings, the total number of tourist visits recorded in 2022 is 7,987, and the area of Lapin Beach is 17 ha. The tourism perspective attributes an economic value of IDR 118,356,787,199 to Lapin Beach. This demonstrates that enhancing the infrastructure and auxiliary amenities that enhance individuals' inclination to visit Lapin Beach tourist can potentially augment the economic worth of Lapin Beach.

4. Conclusions

The results of multiple linear regression tests indicate that travel costs, distance, income, education, and length of time aware of the beach's presence significantly impact the number of visits to Lapin Beach. However, the variables age and gender do not substantially affect the frequency of visits. The mean expense of all participants who visit Lapin Beach is IDR 1,909,333 per person per visit, and the consumer surplus gained

amounts to IDR 251,917,538.80 per person annually. The overall economic value of Lapin Beach was calculated to be IDR 118,356,787,199.

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