Demand And Availability Factors To Pay Tourists To Tanjung Kelayang Destinations Based On Travel Cost Method

NININ GUSDINI

Environmental Engineering Department, Engineering Faculty
University of Sahid Jakarta
Jl. Soepomo SH No. 84, Tebet, Jakarta Selatan 12870, INDONESIA
ninin_gusdini@usahid.ac.id

LISA RATNASARI

Industrial Engineering Department, Engineering Faculty
University of Sahid Jakarta
Jl. Soepomo SH No. 84, Tebet, Jakarta Selatan 12870, INDONESIA
lisaratnasari13@gmail.com

BERNARD HASIBUAN

Industrial Engineering Department, Engineering Faculty
University of Sahid Jakarta
Jl. Soepomo SH No. 84, Tebet, Jakarta Selatan 12870, INDONESIA
bernard_hasibuan@usahid.ac.id

Abstract: - Tanjung Kelayang beach is one of the best beach in Bangka Belitung. Since March 15, 2016, Tanjung Kelayang has stipulated as Special Economic Zone (KEK) through Government Regulation Number 6 Year of 2016, with main activity in tourism field. Tanjung Kelayang tourism region (KWTK) has beautiful natural potency to be developed as famous tourist destination and becomes excellent destination in Belitung. In doing tourism activity, many things are influenced such as economical, ecological, and social fields. Tourist destination development still emphasizes on economic aspect in form of employment and improvement of economy in the respective tourist destination. Therefore, it needs mushroom growth strategy in tourism sector. One of another is by establishing economic valuation which later becomes goals of KSPN Tanjung Kelayang. This research aims to calculate consumer surplus, economic value potency of Tanjung Kelayang Tourism Area. Method used in this research is Travel Cost Method (TCM) which calculating direct use value with Revealed Preference approach. Result of this research is total travel cost of tourists who visit KWKT is Rp. 5.300.000 for the highest cost, Rp. 2.313.547 for its average, and Rp. 30.000 for the lowest cost. Factor which has positive significant influence on visit frequency is variable of total travel cost and income of tourists, consumer surplus from KWKT tourists is Rp 14.445.000 per tourist.

Key-Words: - Tanjung Kelayang, consumer surplus, Travel Cost Method

1 Introduction

Indonesia is maritime country with thousands of islands and its coast crosses from Sabang until Merauke. As islands country, Indonesia has excellent tourism potency especially marine tourism. One of such tourisms is Tanjung Kelayang Tourism Area (KWKT) in Belitung District.

Belitung District has unique beach potency which has not yet explored optimally. Beach furnished by big rocks which its shape and location are unique, white sand and clear water becomes the main attractiveness of this beach area of Belitung District. Tanjung Kelayang Beach and Tanjung Tinggi Beach are the area which attract tourists due to its uniqueness.

Tanjung Kelayang attractiveness is white sand which popular due to its beauty. In the beach and coast there are many small to big granite rocks. The existence of such rocks becomes unique attractiveness of this beach. Another attractiveness is historical lighthouse

in Lengkuas Island and under the sea beauty which a cool place to be snorkeling area.

Tourism has become a leading modern service industry. the development of quality tourism has started on the track of steady development [1]. The value of the tourism product is defined, controlled and permanently adapted to consumers' needs and especially to their desires [2]. Tourism of Belitung District, after Laskar Pelangi movie popular, shows extremely significant improvement. The number of tourists constantly to increase which averagely 35% in the last 6 years. The number of business license relating to tourism also constantly to increase averagely 33,6% during the last 3 years [3]. Tourism improvement of Belitung District is estimated to grow rapidly after Tanjung Kelayang stipulated as one of the priorities of tourism area development and as Special Economic Zone (SEZ) through Government Regulation No.6 Year of 2016 [4].

In the context to support continuous tourism development, it needs strategic attempt in developing the existing tourism potency with consideration of economic, ecological, and social aspects adaptively to the attempt to minimize natural disaster impact. Based on this idea, continuous tourist area development strategy and adaptive to natural disaster in Belitung District need to be studied.

Therefore, a comprehensive research which analyzes influential factors on visitation frequency to KWTK shall be performed.

2 Problem Formulation

This research was done in Tanjung Kelayang Tourism Area with focus on Tanjung Kelayang and Tanjung Tinggi beach. The method used in this research is travel cost method (TCM), where the approach is used to estimate the value of a tourist area by using several variables [5]. TCM is a type of revealed preference method that is commonly used to estimate use values of recreational activities. It applies the demand theory in economics to the demand for recreational activities such that the travel cost to visit a recreation site represents the price paid by the consumer/resource user [6]. Travel Cost Method is the time and cost of travel spent by an individual to visit a location reflecting the price for access to the location. Willingness to pay people to visit the site can be estimated based on the number of trips they travel with varying travel expenses. TCM stages are calculating the cost of each individual's travel, finding the average travel expenses, calculating the total economic value per year, looking for the demand curve based on the number of visits

and willingness to pay visitors and calculating the surplus value of the visitor consumer [7].

Travel Cost approach used in estimation of tourism area value by using various variables. Analysis method used in this research was multiple linear regression which aimed to establish travel cost variable (transportation, ticket, parking, consumption, documentation, etc.), travel cost to other tourism area, age, education degree, and average income of family per month on visitation number [8]. Liner regression equation used was as follows:

$$V_{ij} = f(C_{ij} . T_{ij} . Q_{ij} . S_{ij} . M_i) \qquad (1)$$

Information :

V_{ij} = Number of visits by individuals i to place j

C_{ij} = Travel expenses incurred by the individual i to place j

T_{ij} = Cost of time spent by the individual i to place j

Q_{ij} = Respondent's perception of the environmental quality of the places visited.

S_{ij} = Characteristics of substitutions that may exist elsewhere

M_i = Income from individuals

In order to calculate economic value, travel cost method was used. It was by calculating consumer surplus yearly per individual. To calculate consumer surplus, the following formula was used [8]:

$$WTP \approx CS = \int_{(P\_o)}^{\overline{P}} \llbracket X^h (P,u)dP \rrbracket \qquad (2)$$
$$= M((P,)\overline{u}) - M(P\_o,u)$$

Information :

WTP = Willingness to pay

CS = Consumer surplus

P_o = Price on baseline condition

$\overline{P}$ = Price due to change

M = Income difference

u = Regression coefficient of travel cost

$M((P,)\overline{u})$ = Income after change with constant utility

$M(P\_o,u)$ = Initial income.

3 Problem Solution

Based on Total Travel Cost calculation of tourist to KWKT, it is found the lowest cost of Rp. 30.000, and the highest cost of Rp. 5.300.000, while the average cost is Rp. 2.313.547,81,

Analysis of Factor which influences Visitation Frequency

Hypothesis testing uses multiple linear regression, where the variables are:

Y = Total of visitation intensity to the location

X1 = Individual travel cost to the location (Rp/person).

X2 = Respondents' age (years old).

X3 = Education degree of respondents (last education).

X4 = Income of respondents (Rp/month).

b1-b4 = Regression coefficient.

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	5,012	,737		6,804	,000
Total Travel Cost	-8,257E-7	,000	-,488	-5,657	,000
Age	,325	,208	,144	1,564	,121
Education	,219	,332	,078	,660	,511
Income	-,588	,260	-,261	-2,264	,026
a. Dependent Variable: Visitation Frequency					

Based on regression result above, it can be seen that X1 (Total Travel Cost) has significance = 0,000 < 0,05. Total travel cost is cost spent by each tourist in one time visitation. Total travel cost includes transportation, consumption, lodging, documentation, and other costs to go to the tourist destination. Travel cost variable is significant and positive since this variable cannot be separated from visitor frequency. X2 (Age) has significance of 1,21 > 0,05. Based on the result, it can be said that variable X2 does not influence variable. X3 (Education) does not have influence on variable Y since its significance is 0,551 > 0,05. X4 (Income) with significance = 0,026 < 0,05. Total income is income per month of each tourist. Variable of total income has significant and positive influences. It can be interpreted that total income is an essential thing relating to recreation or economic activities. From such activity, it needs expenses in form of money or cost from each tourist. Total income has positive result in which this things is in line with economic principle. It states that the higher income the higher expenses. Therefore, if someone's has high income, then averagely visitation level to a tourism area is also high. Based on the interview result, if respondent has higher income, it is possible for them to have higher recreation chance than respondent with lower income.

Based on the above linear regression result, it is obtained coefficient value of each variable. Variable used is variable that has significance value less than 0,05, it is: Visitation Frequency, Total Travel Cost,

and Tourist Income which furthermore calculated as follows:

$$WTP \approx CS = \int_{(P\_o)}^{P} [\![X^\wedge h\ (P,u)dP]\!]$$
$$= M((P,)\bar{u}) - M(P\_o,u)$$

Consequently:

$$WTP \approx CS = \int_{2313549}^{5300000} [\![(5,012 - (-8,25E-07))]\!]$$

$$= 5,012 - (8,25E-07)$$
$$= (5,012 - (-8,25E-07) \times 5300000) - (5,012 - (-8,25E-07) \times 2313549)$$
$$= 26814204,42 - 11595508,55$$
$$= 14.445.000$$

Based on calculation result above, it is established that value of consumer surplus of KSPN Tanjung Kelayang tourist is Rp. Rp 14.445.000 per tourist and per visitation in 2019.

Economic value reflects total of maximum person who wants to sacrifice goods and service to obtain maximum benefit. Amount of money prepared to be spent in order to enjoy natural beauty of Tanjung Kelayang depicts economic value of the tourist. In this research, amount of money which willingly spent by tourist shown in money that is used for travel necessity to Tanjung Kelayang, such as cost of transportation, consumption, accommodation, tourism, and shopping in the site. Survey result on 105 tourists show that average budget prepared by tourist is Rp. 3.944.565, while budget used during tourism activities averagely is Rp. 2.482.174 outside flight cost. The budget used is still under budget allocated which allocated to enjoy Kawasan Tanjung Kalayang. The expenses includes accommodation, local transportation, consumption, souvenirs, and other cost such as parking fee, snack, and toilet. Based on the cost, the lowest allocation is souvenir cost (Rp 372.065) and other costs in amount of Rp 267.368. This amount indicates that travel in Tanjung Kelayang Area is under economic value (under value) of the area. Economically, Tanjung Kelayang area has adequately big potency since from result of the analysis by using TCM, it obtains that consumer surplus is in amount of Rp 14.445.000 per tourist.

4 Conclusion

Factor which significantly and positively influenced Visitation Frequency of KWKT was variable of Total Travel Cost and tourists' income with significance value less than 0.05 (5%). Consumer surplus from KWKT's tourists was Rp 14.445.000 per tourist. Based on the analysis, Tanjung Kelayang tourism area had big potency to be developed and supported

continuously from ecological, social, and economic factors. However, in order to anticipate tourist increase, the manager/regional government needed to prepare infrastructure and area management. Therefore, negative impact of visitation can be suppressed, as well as to develop tourism attraction in order to support area utilization and resulted in tourist visitation increase.

References:

[1]   X. He and C. C. Chang, "Applying the quality function deployment method to tourism's industry analysis," *WSEAS Trans. Bus. Econ.*, vol. 17, pp. 436–440, 2020, doi: 10.37394/23207.2020.17.42.

[2]   I. Mihajlović, "Structural changes in tourism market that highlight the product specialization of travel intermediaries," *WSEAS Trans. Bus. Econ.*, vol. 17, pp. 608–626, 2020, doi: 10.37394/23207.2020.17.59.

[3]   Badan-Pusat-Statistik, *Provinsi Kepulauan Bangka Belitung Dalam Angka 2019*. ©BPS Provinsi Kepulauan Bangka Belitung, 2019.

[4]   Anonymus, *Peraturan Pemerintah Republik Indonesia Nomor 6 Tahun 2016 Tentang Kawasan Kawasan Ekonomi Khusus Tanjung Kelayang*. Republik Indonesia, 2016.

[5]   J. L. Romo-Lozano, J. López-Upton, J. Jesús Vargas-Hernández, and M. L. Ávila-Angulo, "Economic valuation of the forest biodiversity in Mexico, a review," *Rev. Chapingo, Ser. Ciencias For. y del Ambient.*, vol. 25, no. 3, pp. 75–90, 2019, doi: 10.5154/r.rchscfa.2016.03.015.

[6]   J. Hwang, X. Bi, N. Morales, and E. V. Camp, "The economic value of freshwater fisheries in Florida: An application of the travel cost method for black crappie fishing trips," *Fish. Res.*, vol. 233, no. September 2020, p. 105754, 2021, doi: 10.1016/j.fishres.2020.105754.

[7]   I. J. Wibiariksa Putri, "Valuasi Ekonomi Objek Wisata Goa Pindul Kabupaten Gunungkidul Menggunakan Pendekatan Travel Cost Method," *J. Reka Lingkung.*, vol. 7, no. 1, pp. 1–11, 2019, doi: 10.26760/rekalingkungan.v7i1.1-11.

[8]   T. C. M. In, K. Karst, and G. Park, "Economic Valuation Using Travel Cost Method," *J. Trop. For. Sci.*, vol. 31, no. 1, pp. 78–89, 2019.