

## Original Research Article

# Economic Valuation of Santolo Beach Tourism in Garut Regency West Java

### ABSTRACT

This study aimed to estimate the economic value of Santolo Beach tourism area. This research conducted from December 2019 until January 2020. The method used in this research is survey method with accidental sampling as the data collecting technique. Travel Cost Method and Contingent Valuation Method applied to estimate Santolo Beach's economic value. The factors influenced the number of visits and Willingness to Pay value identified by multiple linear regression. The results of the research showed that the economic value of Santolo Beach with the Travel Cost Method is Rp114,260,540,300 per year for the linear model and Rp150,658,253,100 per year for the semi-log model while the result from the Contingent Valuation Method is Rp3,650,565,690 per year. The factors influence the number of visits in the linear model are travel costs, income, education, and distance while for semi-log model is distance. The variables that affect the value of visitors' Willingness to Pay are income and education for both the linear model and the semi-log model.

*Keywords: Contingent Valuation Methods, economic valuation, Santolo Beach, Travel Cost Methods*

### 1. INTRODUCTION

Garut Regency located in the south of West Java Province that has a geographic coordinate of 6056 '49 " - 70 45'00" S and 107025'8 " -108007 '30" E, with an approximately 306,519 Ha (3,065.19 km<sup>2</sup>) area [1]. Garut Regency divided into 3 development region, namely North Development Region, Central Development Region, and South Development Region. Because of its vast area, there are still development gaps that occur between the three regions, and the South Development Region is an area whose development is relatively lower compared to other regions [2].

In 2020, Garut Regency government prepares South Garut region as a new Regency. The establishment of the South Garut Regency requires the government to maximize all of the available potentials as a source of regional income. One that can be utilized is tourism. South Garut region directly borders with the Indian Ocean, with an 80 Kilometers coastline [3] that makes it a coastal area. Coastal area has uniqueness and beautiful nature as a tourist attraction that can be developed. With a coastline that stretches from the east in Cibalong District to the west in Caringin District [4], the South Garut region has several beaches as their tourism potentials, namely Santolo Beach, Sayang Heulang Beach, Rancabuaya Beach, Karang Paranje Beach, Puncak Guha Beach and several other beaches that must be optimized as a contribution to the regional income.

Santolo Beach is one of the beaches that has the characteristics of great sea waves with fine white sand, lined coral rocks, and an immense sea. Based on the data from [5], Santolo Beach has a significant number of tourist visits as many as 282,333 persons per year which is the highest compared to other beaches in Garut Regency in 2019. [6] Highlights the important role that the tourism sector plays in creating jobs and generating

revenue for a destination's residents and government. The high number of visitors activity proves that Santolo Beach has economic potential that can be utilized by the government and the beach residents.

The utilization of Santolo Beach must also consider its nature as a public asset. The threat toward nature and the environment of a public asset is huge, it is because mostly the users of the goods and services only want to use it without concern about its sustainability. Public perception towards environmental goods and services can not be quantified or valued in monetary terms (money) also makes the community do not care about environmental sustainability.

The economic valuation of Santolo Beach is important. By understanding the economic value of Santolo Beach, it can be used as a reference in the management of natural resources that are not only profitable for the economy but also still sustaining the environment. An economic valuation is a tool that can be used to calculate the benefit-cost of the trade-off, from the policy to be taken [7]. The comparison of costs and benefits allows an explicit consideration of the trade-offs that are inevitably involved in most environmental policy decisions [8]. Also, the Santolo Beach economic overview can be used in regional development decision making.

## 2. METHODOLOGY

The method used in this research is a survey method with questionnaires as the research instrument. The survey research conducted in large and small populations, but the studied data coming from the samples taken from those populations, so then the relative events, distribution, and relationships between sociological and psychological variables can be discovered as the result of this research [9].

Types and sources of data in this study are primary and secondary data. Primary data were obtained through interviews with Santolo Beach visitors, while secondary data obtained from the Department of Tourism and Culture of Garut Regency. The number of respondents interviewed during this study was 100 local visitors.

### 2.1 Research Location

This research took place in Santolo Beach, which is located at Cikelet District, Garut Regency, West Java Province, Indonesia (Fig. 1) is research location map.

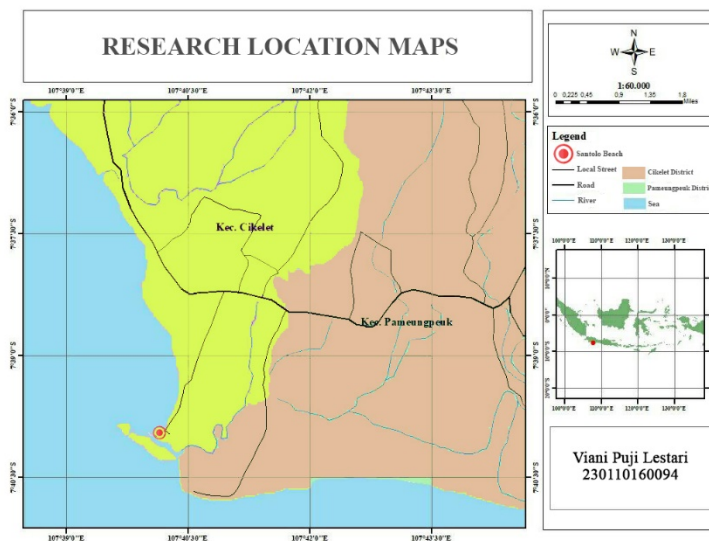


Fig 1. Research location map

## 2.2 Data Analysis Method

The data analysis method used in this research is a quantitative descriptive method. Travel Cost Method used to estimate the consumer surplus-value of Santolo Beach visitors and Contingent Valuation Method applied to estimate the visitor's Willingness To Pay (WTP) value. Statistical regression implemented to identify the factors that influenced the visits frequency and respondents' WTP value. Data processing has been done by using IBM SPSS Statistics 24 and Microsoft Excel 2016 software.

### 2.2.1 Travel Cost Method

The travel cost method is an indirect valuation method that uses the visitor's travel costs to recreational areas or other attractions as a proxy for the value of the recreational activity or attraction [10, 11]. Travel cost method (TCM) is based on the demand theory and assumes that the demand for a recreational site is inversely related to the travel costs that a certain visitor must face to enjoy it [12, 13].

This research uses the Individual Travel Cost Method to comprehend the pattern of expenditure by each visitor. The expenses include transportation costs, entrance fees, consumption costs, and other relevant expenses while going to and inside the tourist attraction. Trip frequencies are thought to be influenced primarily by socio-economic-demographic variables [14]. To identify factors that influence the number of visits can be done with multiple linear regression. The demand function equation formulated as follows:

$$V_{ij} = f(C_{ij}, I_{ij}, A_{ij}, E_{ij}, D_{ij}, DG_{ij})$$

Where :

$V_{ij}$  : Number of visit per year  
 $C_{ij}$  : Tourists cost per visit  
 $I_{ij}$  : Income  
 $A_{ij}$  : Age  
 $E_{ij}$  : Education  
 $D_{ij}$  : Distance  
 $DG_{ij}$  : Dummy Gender

Demand function in linear and semi log model shown below:

Linear model :  $V = \alpha_0 + \alpha_1 C + \alpha_2 I + \alpha_3 A + \alpha_4 E + \alpha_5 D + dummy\alpha_6 G$

Semi-log model :  $\ln V = \alpha_0 + \alpha_1 C + \alpha_2 I + \alpha_3 A + \alpha_4 E + \alpha_5 D + dummy\alpha_6 G$

After the demand function obtained, it can be used to calculate consumer surplus-value. Consumer surplus is a proxy from visitors' Willingness To Pay when experiencing Santolo Beach services. Consumer surplus estimated through the following equation.

Linear Model :  $CS = \frac{(a_0 - a_1 TC)^2}{2a_1}$

Semi Log Model :  $CS = \frac{V}{a_1} = \frac{e^{(a_0 - a_1 TC)}}{2a_1}$

Where :

CS = Consumer surplus

$a_0$  = Constanta

$a_1$  = Cost coefficient

$\overline{TC}$  = Choke price (the lowest price at which the quantity of visit is equal to zero)

### 2.2.2 Contingent Valuation Method

The contingent valuation method (CVM) is a simple, flexible nonmarket valuation method that is widely used in cost-benefit analysis and environmental impact assessment [15]. The contingent valuation (CV) method, so called because the valuation is contingent upon the given scenario, asks respondents directly what they would be willing to pay, or

willing to accept, in a hypothetical market situation to conserve or expand some public good [16]. In this study, Contingent Valuation Method utilized to determine visitors' Willingness To Pay in improving Santolo Beach environment quality. The stages of the Contingent Valuation Method application based on [17] are:

1. Create a hypothetical market
2. Obtaining bids
3. Estimating average WTP
4. Estimating bid curves
5. Aggregating data

CVM could also be applied to analyze the factor that influences visitors' Willing To Pay by using multiple linear regression. The model formulated as follows:

$$Y_{ij} = f(I_{ij}, A_{ij}, E_{ij}, G_{ij}, DG_{ij})$$

The WTP function in linear and semi-log model shown below:

Linear Model :  $Y = \alpha_0 + \alpha_1 I + \alpha_2 A + \alpha_3 E + \text{dummy}\alpha_4 G$

Semi-log Model :  $\text{Ln } Y = \alpha_0 + \alpha_1 I + \alpha_2 A + \alpha_3 E + \text{dummy}\alpha_4 G$

Where :

Y = WTP

I = Income

A = Age

E = Education

DG = Dummy Gender

### 3. RESULTS AND DISCUSSION

#### 3.1 Analysis of Travel Cost Method

This research used the individual Travel Cost Method to obtain the demand function. The demand function is obtained by regressing several factors that could affect the tourism activities demand on Santolo Beach, namely the cost of travel, income, age, education, distance, and gender. Regression analysis that has been done, produce the following equation:

##### Linear Model

No of Visit = 3,170 – 0,000001365 Cost + 0,0000002 Income – 0,042 Age + 0,093 Education – 0,015 Distance + 0,29 Male

##### Semi-Log Model

Ln No of Visit = 1,345 – 0,000000702 Cost + 0,0000001074 Income – 0,026 Age + 0,048 Education – 0,009 Distance + 0,170 Male

**Table 1. Regression analysis performance number of visit for linear and semi-log model**

Predictor	Linear Models			Semi-log Models		
	Coefficient	Tolerance	VIF	Coefficient	Tolerance	VIF
Constant	3,170			1,345		
Travel cost	-0,000001365	0,725	1,380	-0,000000702	0,725	1,380
Income	0,0000002	0,472	2,119	0,0000001074	0,472	2,119
Age	-0,042	0,415	2,410	-0,026	0,415	2,410
Education	0,093	0,676	1,480	0,048	0,676	1,480
Distance	-0,015	0,979	1,021	-0,009	0,979	1,021
Dummy Gender	0,29	0,981	1,020	0,170	0,981	1,020
R <sup>2</sup>		36,9%			34,4%	
F Statistic		8,696			8,144	
Prob F Statistic		0,000			0,000	

Table 1. shown the performance of statistical regression analysis in linear and semi-log models. The values of R<sup>2</sup> for the linear model and semi-log model are 36.9% and 34.4%. That means the independent variable affects the number of visits by 36.9% and 34.4% while

the rest of it influenced by some other factors which not explained in this research. The VIF values are below 10, and the Tolerance above 0.1 in both regression models indicate that there is no multicollinearity between the independent variables. The F statistic probability in both models is less than 0.005, which means that the independent variable influences the number of visits simultaneously.

### 3.1.1 Factors that influence the number of visit

The results of testing individual parameters for the number of visit regression model with a significance level of 5% are shown in Table 2.

**Table 2. T-test result the number of visit**

Variabel	t tabel	Linear Model		Semi-Log Model	
		t statistic	Sig.	t statistic	Sig.
Travel Cost		-2,028*	0,045	-1,755	0,083
Income		2,135*	0,035	1,930	0,057
Age	1,9858	-1,544	0,126	-1,573	0,119
Education		2,263*	0,026	1,965	0,052
Distance		-6,570*	0,000	-6,282*	0,000
Dummy Gender		1,615	0,110	1,596	0,014

\*significant at confidence interval 95%

Table 2. shows that for linear models, there are four of six variables that significantly affect the number of visits, which are: travel costs, income, education, and distance. As for the semi-log model, variable that significantly influences the number of visits is distance. Both travel cost and distance have a negative sign that indicates that if travel costs get cheaper and distances get closer, the number of visits will increase. Those signs are matching with the results of research conducted by [18, 19, 20] that mentioned travel costs have a negative effect on the number of visits. Based on [21], the further the distance, the less desire for someone to travel. Income and education have a positive sign on the number of visits, which means, the bigger one's income, the greater one's ability to use tourism services so that the number of visits will also be high. Higher education level influences one's perception of interest in attractions compared to someone whose education level is low [22].

### 3.1.2 Consumer Surplus

The equation that has been obtained is used to calculate the value of consumer surplus. The assumption of the choke price is Rp1,5 Million (the lowest price at which the quantity of visits is equal to zero). The calculation of consumer surplus shown below..

$$\begin{aligned} \text{Model Linear} & : CS = \frac{(a_0 - a_1 TC)^2}{2a_1} \\ & CS = \frac{(3,17 - 0,000001365 \times 1.500.000)^2}{2 \times 0,000001365} \\ & CS = 461.541 \end{aligned}$$

$$\begin{aligned} \text{Model Semi Log} & : CS = \frac{V}{a_1} = \frac{e^{(a_0 - a_1 TC)}}{2a_1} \\ & CS = \frac{0,372^{(1,345 - 0,000000702 \times 1500.000)}}{2 \times 0,000000702} \\ & CS = 533.619 \end{aligned}$$

Based on the calculation results, the consumer surplus value is IDR461,541 for the linear model and IDR533,619 per individual per year for the semi-log model. The consumer

surolus value obtained is not much different from the research conducted by [23] which is IDR566,183.00 per individual per year for consumer surplus of Batu Karas Pangandaran Beach visitors.

### 3.2 Contingent Valuation Methods

Contingent Valuation Method utilized to determine visitors' Willingness To Pay in improving Santolo Beach environment quality. The hypothetical market created with a scenario that Santolo Beach experienced an environmental quality degradation so that the management plans to make an environmental improvement so that its functions and benefits always preserved, by maintaining cleanliness both on land and in the waters, provision including repairment of public facilities, monitoring, and prevention of environmental degradation such as pollution or devastation. For those reasons, the manager needs the participation of visitors in this plan. Through this scenario, the respondent would understand the intended hypothesis situation. Each respondent will be asked whether they are willing to pay or not. Value distribution of visitors willingness to pay can be seen in Table 3.

**Table 3. Value distribution of visitor's willingness to Pay of Santolo Beach**

WTP (IDR)	Number of respondents		
	Frequency	Percentage (%)	WTP x Frequency
10.000	30	30%	300.000
12.000	25	25%	300.000
13.000	5	5%	65.000
15.000	32	32%	480.000
16.000	2	2%	32.000
18.000	2	2%	36.000
20.000	4	4%	80.000
<b>Total</b>	<b>100<sup>n</sup></b>	<b>100%</b>	<b>1.293.000</b>

The average visitor's WTP calculated by adding up the overall WTP value divided by the number of respondents. The estimated average WTP is calculated using the formula:  $EWTP = \frac{\sum_{i=1}^n W_i}{n}$

$$EWTP = \frac{\sum_{i=1}^n W_i}{n}$$

Where :

EWTP = Estimated WTP average

W<sub>i</sub> = i WTP value

n = Number of respondents

i = I the respondent who is willing to pay fees (i = 1, 2, ..., n)

The average WTP is IDR 12.930. The average value of WTP can be used as reference in deciding the price of entrance ticket to Santolo Beach. This can be used as a reference in settling the entrance ticket price (retribution) which later it could be used in improving the environment and facilities at Santolo Beach.

#### 3.2.1 Total value of WTP

The total value of WTP is calculated based on the distribution of respondents. WTP value in each class multiplied with relative frequency, then multiplied by the population of each WTP class. The multiplication result then summed to determine the value of total WTP. Calculation can be seen in Table 4.

**Table 4. Total willingness to pay of respondents in Santolo Beach**

WTP (IDR)	Frequency	Population	Total Value
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(IDR)			
a	B	c = (b/d) x e	a x c
10.000	30	84.700	846.999.000
12.000	25	70.583	846.999.000
13.000	5	14.117	183.516.450
15.000	32	90.347	1.355.198.400
16.000	2	5.647	90.346.560
18.000	2	5.647	101.639.880
20.000	4	11.293	225.866.400
<b>Total</b>	<b>100<sup>d</sup></b>	<b>282.333<sup>e</sup></b>	<b>3.650.565.690</b>

\*e : the number of Santolo Beach visitors in 2019

From the calculation result, the total visitors' WTP value is Rp3.650.565.690, and the population is based on the number of Santolo Beach visitors in 2019. As a comparison with research conducted by [24], the economic value obtained annually from the environmental services of Lasiana Beach is Rp72,787,323,947.

### 3.2.2 Factors that influence visitor's willingness to pay

Multiple linear regression implemented to discover the factors that influence visitor Willingness To Pay. The analysis results produce the following equation:

Linear Model

$$WTP (Y) = 3191,486 + 0,001 \text{ Income} + 98,595 \text{ Age} + 432,320 \text{ Education} - 137,911 \text{ Male}$$

Semi-log Model

$$\text{Ln WTP} (Y) = 8,677 + 0,00000008043 \text{ Income} + 0,009 \text{ Age} + 0,034 \text{ Education} - 0,007 \text{ Male}$$

**Table 5. Regression analysis performance willingness to pay for linear and semi-log model**

Predictor	Linear Models			Semi-log Models		
	Coefficient	p-value	VIF	Coefficient	p-value	VIF
Constant	3191,486			8,677		
Income	0,001	0,000*	1,987	8,043E-8	0,001*	1,009
Age	98,595	0,279	2,404	0,009	0,193	1,987
Education	432,320	0,001*	1,313	0,034	0,001*	2,404
Dummy Gender	137,911	0,816	1,009	-0,007	0,877	1,313
R <sup>2</sup>		46%			44,7%	
F Statistic		20,281			19,228	
Prob F Statistic		0,000			0,000	

According to Table 5. can be seen that The R-square values of the linear and semi-log models are 46% and 44.7%, which means that the WTP value influenced by independent variables as much as the R-square value, and the rest of it influenced by other factors that were not explained in this study. The VIF values in both regression models are below 10, which indicates there is no multicollinearity between the independent variables.

Based on the p-value in both of the linear model and the semi-log model, the variables that significantly influence the WTP values are income and education. The higher the income, the higher the value of the WTP given. Someone with a high income will have more funds to spend on other costs, one of which is to support the development and improvement of the Santolo Beach environment. According to [25], the bigger the tourists' income, they will have the flexibility to pay higher WTP. The longer a person attends education, the higher the WTP value given. Based on [26], education level influences an individual mindset, while mindset influences the tourists' behavior. The tourists' education level will affect tourists'

judgment and concern for environmental problems. The higher the education level, the greater tourists' concern for the environment, and the value of WTP emitted are even greater. If a person takes longer education, then a person's mindset will be higher, usually they can feel the impact of what they will get when setting aside some money [27]. Education raises awareness level of individuals with respect to environmental problems [28].

### **3.1 Economic Value of Santolo Beach**

The calculation of Santolo Beach's economic value by the TCM method executed by multiplying the value of consumer surplus by the number of tourist visits in a given year. The number of tourists visiting Santolo Beach in 2019 was 282,333 people. Then the economic value of Santolo Beach in 2019 was IDR114,260,540,300 per year for the linear model and IDR150,658,253,100 per year for the semi-log model. While the economic value of Santolo Beach using the CVM method was IDR3,650,565,690 per year which is the total WTP value from Santolo Beach visitors. Estimates of the economic value of Santolo Beach, however, will increase the awareness of everyone involved in the use and management of Santolo Beach tourism. This value also implies restoration costs that will be projected if the resource is damaged [29]. Restoration cost sets the value of a system as the cost of restoring it to its pre-damaged condition [30].

The results show that the economic value using the TCM method is greater than the economic value using the CVM method. [31] performed meta-analysis benefit transfer of outdoor recreation economic values and showed that that CVM studies produced significantly lower estimates of consumer surplus (CS) than the TCM. [32] found that TCM produces greater value than CVM for coral reef recreation. The difference in economic values resulting from the TCM and CVM methods can occur because of several things. This is because of the fact that TCM is based on observed behaviour of the respondents in actual markets, i.e. based on revealed preference, whereas CVM is based on expressed or stated preferences [33]. CVM values are usually lower than TCM because respondents are reluctant to express a high value of willingness to pay for CVM questions because they are worried about future entrance fees or other costs and fear that the hypothetical situation posed by the question will become a reality [34, 35].

Based on Garut District Local Regulation No.11 of 2016, which is the reference for tourism retribution fees, the entrance fees for Santolo Beach on weekdays range from IDR 3,000 per person for children and IDR 5,000 per person for adults. While on holidays, the fees ranging around IDR 5,000 per person for children and IDR 7,500 per person for adults. According to information from the management of Santolo Beach, the achievement target of Santolo Beach retribution is IDR 450,000,000 per year and this target is still far below the economic potential value of Santolo Beach. That matter can be used as a consideration for the manager in settling the price of the Santolo Beach entrance ticket so that it can be optimized. If the manager and the stakeholders do not make any efforts to settle the economic value according to the right pricing mechanism, it will have negative impacts on the income of the tourism sector and Santolo Beach itself. The increasing of entrance ticket price must also be balanced with the beach quality improvement and facilities addition at Santolo Beach to provide comfort for tourists.



This economic valuation information can be used as a reference for the development decision making of Santolo Beach tourism area. Because the return from tourism is expected to improve the welfare of the community. On the other hand, the development of Santolo Beach tourism area must be addressed with caution, because it is feared that high economic value will be lost if the environmental management is poor. Utilization of Santolo Beach tourism area must also consider its carrying capacity. Carrying capacity is 'the maximum level of visitor use an area can accommodate high levels of satisfaction for visitors and few negative impacts on resources [36]. When an area is used beyond its capacity, the quality of natural resources changes and gets destroyed [37]. Thus the use of the Santolo tourism area into ecotourism is the right choice.

#### **4. CONCLUSION**

Based on the results of this research, the consumer surplus value for the linear model is Rp461,541 per individual per year and for the semi-log model is Rp 533,619 per individual per year. Variables that affected the number of visits significantly are travel costs, income, education, and distance in the linear model while on the semi-log model, the significant factor is only distance. The average value of visitors' WTP is Rp. 12,930 which can be used as a reference to manage the Santolo Beach tourism entrance ticket rates. The factors that influence the visitor's WTP value in both the linear model and in the semi-log model are income and distances. The economic value of Santolo Beach with TCM is IDR 114,260,540,300 per year for linear models and IDR 150,658,253,100 per year for semi-log models while using CVM, the Santolo Beach's economic value is IDR 3,650,565,690 per year.

#### **REFERENCES**

- 1 Anonymous. Geographical location. Pemerintah Kabupaten Garut. 2017; 22:12. Accessed 31 May 2020. Available: <https://www.garutkab.go.id/page/letak-geografis>
- 2 Djuwendah, Endah., Hepi H., Eddy R and Zumi S. Strategy Development of Disadvantaged Areas in Garut Regency. *Sosiohumaniora*. 2013. 15(2): 211 – 221.
- 3 Agung, Fery. Indonesian investment and trading opportunity by province, regency, city, Indonesia. Feraco: Jakarta; 2004.
- 4 Maryato T. I and M.J Pea. Early Study of Mapping Beach Zone Based on Abrasion and Accession Data in Sayangheulang and Santolo Beach Garut Regency West Java. *National Geomatics Seminar*; 2019; Vol 3: 983- 991.
- 5 Dinas Pariwisata dan Kebudayaan Kabupaten Garut. Recapitulation of tourist arrivals data. Disparbud: Garut; 2020.
- 6 Sinclair, M. T. Tourism and economic development: A survey. *The Journal of Development Studies*, 1998. 34(5): 1-51.
- 7 Anna Z and Dicky S. P. Economic valuation of whale shark tourism in Cendrawasih Bay National Park, Papua, Indonesia. *Biodiversitas*. 2017 18 (3): 1026-1034.
- 8 The National Research Council. Valuing Ecosystem Services Toward Better Environmental Decision-Making. The National Academies Press. Washington. 2005.
- 9 Sugiyono. Business research methods (Quantitative, qualitative, and R&D approaches). Alfabeta: Bandung; 2009.

- 10 Mirovitskaya N and William A. Guide to sustainable development and environmental policy. Duke University Press: Durham, 2001.
- 11 Turner, R.K, Georgiou, S. and Fisher, B. Valuing Ecosystem Services: The Case of Multi-functional Wetlands. 2008. UK: Cromwell Press.
- 12 Ortega S. T., R. P Alvarez., P.D Simal., J. M. d. L.Ruiz and Felipe P.G. Economic Valuation of Cultural Heritage: Application of Travel Cost Method to the National Museum and Research Center of Altamira. Sustainability. 2018; 10(7): 2550
- 13 Singh, K and A. Shishodia. Environmental Economics Theory and Applications. Sage Publications. 2007. 424p. New Delhi
- 14 Bruinsma, F., E. Pels., H. Priemus., P. Rietveld., and Bert V. W. Railway Development: Impacts on Urban Dynamics. Physica Verlag: Amsterdam, 2008. 419p.
- 15 Venkatachalam, L. The Contingent Valuation Method: a review. Environmental Impact Assessment Review. 2004; 24(1): 89-124.
- 16 Snowball, Jeanette D. Measuring the Value of Culture. 2007. Springer Science & Business Media. 230p. Berlin
- 17 Fauzi, Ahmad. Natural resources and environment economics. Gramedia Pustaka Utama: Jakarta; 2010.
- 18 Nam, P. K and T.R.V.H Son. Recreational Value of The Coral Surrounding the Hon Mun Island in Vietnam: A Travel Cost and Contingent Valuation Study. Economic Valuation and Policy Priorities for Sustainable Management of Coral Reefs. 2001.
- 19 Zulpikar F., D. E. Prasetyo., T. V. Shelvatis., K. K. Komara., and M. Pramudawardhani. Economic valuation of tourism objects based on environmental services using the travel cost method in Batu Karas Beach, Pangandaran Regency. Journal of Regional and Rural Development Planning. 2017;1 (1): 53-63.
- 20 Saptutyningsih, E and C. M. Ningrum. Estimated Economic Value of Goa Cemara Beach Attraction in Bantul Regency: Travel Cost Method Approach. 2017; Jurnal Balance, XIV (2) : 56-70.
- 21 Damanik D and Liharman S. Analysis of tourist willingness to pay towards Rumah Bolon attraction in Simalungun Regency. Ikraith-Humaniora. 2018; 2(2).
- 22 Modjango, P., A. Sudhartono dan Sustri. Factors Affecting the Number of Visitors to the Siuri Beach Ecotourism Object, Toinasa Village, Pamona Barat District, Poso Regency. 2015; 3(2): 88-95.
- 23 Zulpikar F., D. E. Prasetyo., T. V. Shelvatis., K. K. Komara., and M. Pramudawardhani. Economic valuation of tourism objects based on environmental services using the travel cost method in Batu Karas Beach, Pangandaran Regency. Journal of Regional and Rural Development Planning. 2017;1 (1): 53-63.
- 24 Pieter J., F. Benu and M.R Kaho. Economic Evaluation of Ecotourism Against the Development of Coastal Areas Tourism Objects. Jurnal Ilmu Lingkungan. 2015 13(1): 5-64.

- 25 Sadikin, P.S, S. Mulatsih, B. Pramudya dan H. S. Arifin. Analysis of Willingness to Pay in the Ecotourism of Mount Rinjani National Park. *Jurnal Analisis Kebijakan Kehutanan*. 2017;14 (1): 31-46.
- 26 Asmadi. 2008. *Basic Concepts of Nursing*. EGC. Jakarta. 188 p.
- 27 Basuki, I and S. Chuadinata. Analysis of Ability To Pay and Willingness To Pay Train Services Yogyakarta International Airport. *Jurnal Spektran*. 2019; 7(2): 140-146.
- 28 Nautiyal S., R. Schaldach., K.V Raju., H. Kaechele., and B. Pritchard. *Climate Change Challenge (3C) and Social-Economic-Ecological Interface-Building*. 2016. Springer International Publishing. Switzerland
- 29 Anna Z and Dicky S. P. Economic valuation of whale shark tourism in Cendrawasih Bay National Park, Papua, Indonesia. *Biodiversitas*. 2017. 18 (3): 1026-1034.
- 30 Redclift, Michael. *Sustainability Critical Concepts in the Social Sciences*. Newyork. Routledge. 368p
- 31 Shrestha, R.K. and Loomis, J.B. Meta-analysis benefit transfer of outdoor recreation economic values: testing out-of-sample convergent validity, *Environmental and Resource Economics*. 2003; 25, 79–100.
- 32 Brander, L., P. J. H. V Beukering., H. S. J Cesar. The recreational Value of Coral Reefs: A meta-analysis. *Ecological Economics*. 2007. 63(1): 209-218.
- 33 Chaudry, Pradeep and V.P Tewari. A comparison between TCM and CVM ini assessing the recreational use value of urban forestry. *International Forestry Review*; 2006. 8(4): 439-448
- 34 Rolfe, J and B. Dyack. Testing for convergent validity between travel cost and contingent valuation estimates of recreation values in the Coorong, Australia. *Australian Journal of Agricultural and Resource Economics*. 2010. 54(4): 583-599.
- 35 O'Sullivan, K and D.F Barnes. *Energy Policies and Multitopic Household Surveys*. 2007. The World Bank Washington. 56p.
- 36 Mcneely, J. A. and Thorsell, J.W. *Guidelines for the development of terrestrial and marine national parks for tourism and travel*. 1987, IUCN, Gland.
- 37 Rajan, B., V.M. Varghese., A.P. Pradeepkumar. Beach Carrying Capacity Analysis for Sustainable Tourism Development in The South West Coast of India. *Environmental Research, Engineering and Management*: 2013; 1(63): 67-73.