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DEMAND ANALYSIS OF DIENG TOURISM OBJECTS USING THE TRAVEL COST METHOD

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ABSTRACT

Visitor demand for Dieng tourism is the object of this research. The goal is this study is to estimate the amount of demand for Dieng tourism objects. This study is also to estimate the economic value of Dieng tourism objects. The findings in this study are divided into three, namely: based on the above calculation is known that Travel Cost of Dieng variables affect the number of tourists visiting attractions Dieng and has a negative relationship where the higher costs to attractions to Dieng will decrease the number of tourist visits to Dieng. Travel Cost Baturraden variables have an influence on the number of tourist visits to Dieng with a positive coefficient where if there is an increase in costs to Baturraden tourism objects will increase the number of tourist visits to Dieng tourism objects.

***Keywords*:** deman economics, travel cost, attraction, information

PENDAHULUAN

Tourism development is one of the overnment's efforts to increase revenues from the non-oil and gas sector. From the aspect of supply, tourism in Indonesia is a strategic sector in the national economic system that contributes greatly to state revenues. The total economic impact of tourism is the total number of impacts that occur directly, indirectly and induction. Tourism activities provide benefits on sales, profits, employment, tax revenues, and income in an area. The involvement of many sectors makes tourism a multiplier effect for gross domestic product. In many countries the development of the tourism sector not only leads to an increase in income from transportation or travel, but encourages the involvement of many other businesses, such as industry, trade, MSMEs, culinary, restaurants and hospitality (Utama, 2011). In this type of tourism, the combination of artificial and natural, community empowerment becomes one of the pillars that is quite influential.

From the aspect of tourism demand continues to increase. The higher the level of community welfare, there is a change in the scale of basic needs, where refreshing with tourism

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is one of the primary needs. This understanding causes the number of tourists from time to time to increase, not only domestic tourists but also foreign tourists. Table 1. the data provides an overview of this.

Table 1. Amount of Tourist in Indonesia

Year	TOTAL		TOTAL	Growth	
	Foreign Tourist	Domestic Tourist		Foreign Tourist	Domestic Tourist
2007	5.505.759	222.389.000	227.894.759		
2008	6.234.497	225.041.000	231.275.497	13%	1%
2009	6.323.730	229.731.000	236.054.730	1%	2%
2010	7.002.944	234.377.000	241.379.944	11%	2%
2011	7.649.731	236.752.000	244.401.731	9%	4%
2012	8.044.462	245.290.000	253.334.462	5%	2%
2013	8.802.129	250.036.000	258.838.129	9%	0%
2014	9.435.411	251.237.000	260.672.411	7%	2%
2015	10.230.775	256.419.000	266.249.775	8%	3%
2016	12.023.971	264.340.000	276.363.971	18%	4%

Source: Ministry of Tourism

Tourism potential in Banjarnegara consists of natural potential, potential of events developed and other potentials. The superior natural potentials in Banjarnegara Regency are Dieng Plateau, Curug Pitu and SerulingmasTRMS, while other seedlings consist of Waduk Mrica, Kolam Renang Angir Mendung, Surya Yudha Park, D Qiano Dieng, Serayu Adventure Indonesia, Pikas Banyu Woong, Arung Jeram Serayu, Mice (lainnya) and Surya Yudha Sport Center. While tourism potential in the form of events consists of Dieng Culture Festival, Indonesian Serayu Festival, Kunduran Wanayasa Nyadran Gendha, Tourism Village and Tourism Events. The Banjarnegara Regency Tourism Office shows the following data.

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Table.2. Data on Number of Visitors to Tourist Objects in Banjarnegara Regency and Wonosobo Regency

NO	Tourist Object	Number of Visitors				
		2013	2014	2015	2016	2017
1	**Dieng**	**154.689**	**297.650**	**348.767**	**391.469**	**421.394**
2	Curug Pitu	624	373	1.746	3.028	3.880
3	TRMS Seruling Mas	306.639	228.499	294.106	367.416	360.876
	Sub number of Local Government Visitors	461.952	526.522	644.619	761.913	786.150
1	Dieng culture Festival	-	26.000	60.000	200.000	148.000
2	Festival Serayu Indonesia	-	-	286.616	-	124.000
3	Kunduran Wanyasa Nyadran Gedha	-	-	-	114.822	-
4	Desa Wisata	-	-	-	-	67.492
5	Event Wisata	-	-	-	-	40.700
	Sub Number of Event Visitors	-	26.000	346.616	314.822	380.192
1	Waduk Mrica	8.061	4.696	9.762	12.762	9.613
2	Kolam renang Angir Mendung	24.036	26.788	28.991	24.717	31.127
3	Surya Yudha Park	151.440	105.311	122.817	138.058	149.171
4	Serayu Park	-	-	14.892	5.000	8.062
5	D Qiano Dieng	-	-	-	61.339	34.577
6	Serayu Adventure Indonesia	1.339	13.327	16.860	9.482	8.248
7	Pikas Bannyu Woong	15.478	17.624	16.754	15.929	13.999
8	Arung Jeram Serayu	-	-	2.097	1.467	2.163
9	MICE (lainnya)	41.668	72.847	64.395	119.668	124.260
10	Surya Yudha Sport Center	-	29.542	30.276	29.746	38.015
	Sub Number of Others Object	242.022	270.135	306.844	418.168	419.235
	TOTAL	**703.974**	**822.657**	**1.298.079**	**1.494.903**	**1.585.577**

Source: Banjarnegara Regency Tourism Office, data is processed

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Based on the data in Table 2, it shows that the Dieng plateau is still superior in tourism in Banjarnegara regency, even in 2011 to 2017 the number. Of visitors reached 172 percent. This then led to the existence of a tourism blend of nature and artificial in the form of an event namely Dieng Culture Festival. Several studies conducted on tourism requests both domestically and abroad have been widely carried out. These researches analyze and examine the factors that influence tourism demand. Basically these studies examine market analysis of tourism in a tourist attraction. The aspects of study on tourism consist of (1) geographical aspects (country of origin, region of origin, distance and leisure time), (2) demographic aspects (age, sex, occupation, income, religion, marriage), (3) psychographic aspects (motivation, goals, expectations, desires, needs), (4) behavioristic aspects (attitudes and behaviors in the object of the tourist visit, type of visit, duration of visit and activities carried out). The factors that determine tourism demand for tourism objects are (1) prices, (2) tourist attraction (3) accessibility (4) information and (5) image (Oka A. Yoeti, 2008). What distinguishes the existing research is its empirical study, both variable development, estimation model and the type of data used. Some researches on Dieng tourism objects that have existed so far have only seen Kalianget as part of Dieng tourism objects. Also research on the analysis of demand for Dieng tourism objects only uses very few variables, so it cannot provide an overview of the Dieng tourism object as a whole.

There are still many variables that most likely affect the demand for tourism objects haven't been used. The objectives in this study can be formulated as follows:1) Analyze the factors that influence Dieng tourism demand; 2) Estimating the Total Economic Value of Dieng tourism; 3) . Analyzing the most dominant factors affecting Dieng tourism demand

RESEARCH METHODS

Research Sites

This research was conducted at Dieng tourism Object

Population and Sample

The population in this study were visitors to Dieng Tourism who did recreation with an unknown amount of certainty. Sampling was carried out with the consideration that the existing

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population is unknown in exact numbers, so that based on the rule of thumb obtained the number of samples in this study was 125.

Types and Data Sources

This study uses primary data. Data collection using indepth interview. Indepth interview is done by asking the respondent directly using a questionnaire. Questionnaire is a list of questions compile din writing with the aim of being a guide for the researcher and to obtain data in the form of answers from respondents.

Method of collecting data

Data collection of this study was conducted using a questionnaire. Respondents are randomly selected for specific purposes. The questionnaire was given to anyone the researcher met and deserved to be a respondent of this study (accidental sampling), which is more than 17 years old. Data was collected by distributing questionnaires to respondents.

Data collection is carried out both on weekdays and holidays, both there are events and no events, whether in the morning, afternoon or evening. Questionnaire distribution is carried out on Monday to Friday, while others are conducted on Saturdays and Sundays and holidays.

Analysis Method

Based on research conducted by Irma Afia Salma & Indah Susilowati (2004); Arif Rahman Hakim & Sri Subanti (2011) Novrani Anasthacia (2014) Sri Subanti (2010); Firman Zulpikar, Dandy E. Prasetiyo, Titis Virgininda Shelvatis, Kinta Karissa Komara & Monica Pramudawardhani (2017) Eva Vicente, Pablo De Frutos (2011); Jala & L. Nandagiri (2015); the number of visits to Dieng tourist attractions is influenced by the cost of travel to Dieng (transportation, stay, ticket, parking, consumption, documentation, etc.), the cost of travel to Baturraden (substitution), the cost of travel to Serulingmas (complementary), monthly income per visitor, distance of the visitor's residence with Dieng, visitor age, gender, length of time at location, education, promotion, purpose, perception of tourism object, origin, information, tourist attraction, number of visits, then the number of visits to Dieng Tourism can be formulated as follows:

$$\text{Visit} = f\,(TCD\ ,\ TCB,\ TCSM\ ,\ Inc,\ Dist,\ Age,\ Sex,\ Time,\ Edu,\ Promo,\ Aim,$$

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Persp, Group, Inform, Atrc)

To calculate the size of the visit request to Dieng Tourism Object, the following function can be formulated:

$$Y = \alpha + ß1\ TCD + ß2\ TCB + ß3\ TCSM + ß\ 4\ Inc + ß\ 5\ Dist + ß\ 6\ Age +$$
$$ß\ 7\ Sex + ß\ 8\ Time + ß\ 9\ Edu + ß\ 10\ Promo + ß\ 11\ Aim + ß\ 12\ Pers +$$
$$ß13\ Group + ß14\ Inform + ß15\ Atrc + \varepsilon$$

Information:

a = intercept

β = coefficient

Y = Number of Requests for Dieng Tourism objects

TCD = cost of travel to Dieng (Rp.)

TCB = the cost of a trip to Baturraden (Rp.)

TCSM = travel costs to Serulingmas (Rp)

Inc = Income per month visitor (Rp)

Dist = Distance where visitors live with Dieng (Km)

Age = Visitor age (Th)

Sex = Gender (male = 1, female = 0)

Time = Time in Location (days)

Edu = Education (Th)

Promo = Promotion (social media = 1, tabloid / mass media & electronic media = 2, friend / brother = 0)

Aim = Destination (for recreation, sports = 1, others = 0)

Persp = Perception of Tourism Object (very unattractive = 1, unattractive = 2, quite interesting = 3, interesting = 4, very interesting)

Group = Group (with family = 1, with friends = 2, alone = 0)

Inform = Information (Information = 1, No Information = 0)

Atrc = Tourist Attraction (There are Attractions = 1, No Attractions = 0)

Average travel costs (Xii) are determined based on the respondents' travel costs (BPi).

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$$Xii = \frac{TCi}{ni}$$

Information:

Xii = Average travel cost

BPi = Respondent travel costs

ni = number of visitors / respondents

To determine the economic value with a trip visit (consumer surplus) per 1000 population with the following formula:

$$CS = \int_{TR0}^{TR1} f\,(TRx)\,.dx$$

CS = Consumer Surplus

TR1 = highest cost

TR0 = lowest cost

RESULT AND DISCUSSION

Table 3. Regression

Variable	Coefficient	t-Statistic
C	3.511758	2.248582
LOG(TCD)	-0.152805	-2.279282 ***
LOG(TCB)	0.000339	2.140025 ***
LOG(INCO)	-0.061723	-0.488713 * ** ***
LOG(DIST)	-0.230827	-2.805992
LOG(AGE)	0.006503	0.031166 * ** ***
SEX	-0.063170	-0.519436 * ** ***
LOG(TIME)	0.122785	1.269686 ** ***

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LOG(EDU)	-0.105289	-0.315798 * ** ***
PROMO	-0.355371	-2.705618
AIM	-0.463272	-1.912794 ** ***
LOG(PERSEP_SARANA)	0.323386	1.289342 ** ***
LOG(AKSESIBILITAS)	0.472455	2.311095 ***
LOG(GROUP)	0.013437	0.068620 * *** ***
INFORM	-0.222599	-1.719406 ** ***
LOG(ATRC)	0.750230	2.568408 ***
R-squared	0.393195	
Adjusted R-squared	0.309689	
Durbin-Watson stat	1.851.963	
F-statistic	4.708.616	
Prob(F-statistic)	0.000001	

Significance

*) 1 percent

**) 5 percent

***) 10 perset

F Table : 1,75

T Table :

10% : 2,671

5% : 1,983

1% : 0,673

Model Estimation :

LOGY = 3,511 – 0,152 (LOGTCD) + 0,0003 (LOGTCB) – 0,06172 (LOGINC) – 0,2308 (LOGDIST) + 0,0065 (LOGAGE) – 0,0631 (SEX) + 0,1227 (LOGTIME) – 0,1052 (LOGEDU)

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– 0,3553 (PROMO) – 0,4632 (AIM) + 0,3233 (LOGPERSEP_SARANA) + 0,4724 (LOGAKSESIBILITAS) + 0,0134 (LOGGROUP) – 0,2225 (INFORM) + 0,7502 (LOGATRC)

Based on the above calculations, it can be seen that the TCD variable affects the number of tourist visits to Dieng tourism objects and has a negative relationship where the higher the cost to the tourist attraction to Dieng will reduce the number of tourist visits to Dieng. TCB variables have an influence on the number of tourist visits to Dieng with a positive coefficient where if there is an increase in costs to Baturraden tourism objects will increase the number of tourist visits to Dieng tourism objects. In the INC variable has an influence on the number of tourist visits to Deing with a negative coefficient, which means, an increase in income will affect the decrease in demand for the number of tourist visits to Dieng tourism objects. The DIST variable does not have an effect on tourist visits to Dieng.

Furthermore, the AGE variable has an influence on tourist visits to Dieng with a positive coefficient, which means that the higher the age of visitors, the higher the number of tourist visits to Dieng tourism objects. The SEX variable has an influence on the number of tourist visits to Dieng. The TIME variable has an influence on the number of tourist visits to Dieng and has a positive coefficient, meaning that the longer the tourist visit will increase the number of tourist visits to Dieng tourism objects. Then the EDU variable has an influence on the number of tourist visits to Dieng with a negative coefficient, meaning that the higher the level of education of tourists will reduce the demand for the number of tourist visits to Dieng tourism objects. Furthermore, the PROMOTION variable does not have an effect on the number of visits to Dieng tourism objects.

The AIM variable has an effect on the number of visits to Dieng tourism objects with negative coefficients. The FACILITATION PERCEPCTION variable has an influence on the number of tourist visits to Dieng with a positive coefficient, meaning the perception of good facilities will increase the number of tourist visits to Dieng tourism objects. Then the ACCESSIBILITY variable has a positive influence and a coefficient means that the better access to the Dieng tourism object will increase the number of tourist visits to the Dieng tourist attraction. GROUP variables are influential and have a positive coefficient, which means that the

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larger the tour group that is followed will increase the number of tourist visits to Dieng tourism objects. The INFORM variable has an affect with negative coefficient. Then the ATRC variable has a positive influence and coefficient means that the number of tourist attractions will increase the number of tourist visits to Dieng tourism objects.

From the regression results above it can be seen by looking at the coefficients away from the zero value (0) is the variable that most influences the number of tourist visits to Dieng tourism objects, namely PERSP_ATRC variable with a coefficient of 0.750230; then the PERSP_INFRA variable with a coefficient of 0.472455; and PERSP_SARANA variable is 0.323386 thus it can be concluded that the three variables above greatly affect the number of tourist visits to Dieng. Thus, it can be concluded that these three variables need to be a concern for local governments to be improved in order to increase tourist visits to Dieng.

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Consumer Surplus

$$CS = \int_{12000}^{2415000} f\,(3{,}248716 - 0.000000588)x\,dx$$

$$= \text{Rp. } 4.377.400{,}9$$

The result of integral calculation is known that the value of consumer surplus is Rp. 4,337,400.9 per individual per year. The average tourist visit rate in the past year is 2,976 times, thus the consumer surplus value becomes Rp. 1,470,900,84 per individual per visit.

The potential economic value of tourism can be known by multiplying the value of consumer surplus with the number of tourists visiting in a certain period. According to data from the Banjarnegara Regency Culture and Tourism Office, the number of tourists visiting in 2017 was 354,318 people. Thus, it can be seen that the value of Dieng tourism, economic potential reaches RP. 521,166,644,000

From the results of the survey above for Dieng tourism objects obtained some information that can describe the respondents. Based on the data above the majority of respondents were male with a percentage of 57.85 percent and female respondents with a percentage of 31.43 percent. Respondents aged 17-25 years occupy the first position with a percentage of 48.57 percent, 26-35 years with a percentage of 16.43 percent, then 36-45 years with presentations of 15 percent, 46-55 years with a percentage of 7.86 percent, and more than 55 years of 1.43 percent. The majority of the education levels of respondents was graduated from high school by 46.43 percent, graduating from PT by 37.86 percent, junior high level by 3.57 percent, and elementary school by 1.43 percent.

From work, the majority of respondents work as private employees at 27.14 percent, as entrepreneurs at 21.43 percent, as students at 19.29 percent, as civil servants / military at 11.43 percent and others at 10.00 percent. The income of respondents in Dieng tourism object is the majority earning more than 3,000,000 rupiah with a percentage of 26.43 percent, 0-1,000,000 rupiah with a percentage of 25.71 percent, income of 1,000,000-2,000,000 rupiahs of 20.00 percent, and 2,000,000-3,000,000 rupiah of 17.14 percent. To find a clearer and more concise picture of a set of data regarding a variable seen from the mean values and this value is one measure of central symptoms and is also a representative of the data set. In other words, the average value is considered to be the value closest to the

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actual result. The average value of each variable is for variable JKW 2,967 rounded to 3 times, TCD of 463,468 rupiahs, TCB of 180,380 rupiahs, INC 2,496,000 rupiahs, DIST of 157,832 kilometers, AGE of 29,416 or rounded up to 30 years, TIME equal to 10.704 hours, EDU of 13.48 years, PERCEP_SARANA of 3.104 points, ACCESSIBILITY of 3.192 points, and PERCEP_ATRC of 3.8 points. From the results of the descriptive analysis, it is seen that TCD, TCB, INC, DIST, AGE, TIME, EDU, PERCEP_SARANA, ACCESSIBILITY, and PERCEP_ATRC tend to increase. This is indicated by the average value (mean) of positive value. While finding out the distribution of the data is shown by the difference between the maximum and minimum values of each variable. For a maximum JKW value of 6 times and a minimum value of 1 time, TCD has a maximum value of 2,415,000 rupiahs and a minimum value of 12,000 rupiah, TCB has a maximum value of 5.002,000 rupiah and a minimum value of 0 rupiah, INC a maximum value of 4,000,000 rupiah and a minimum value of 1,000,000 rupiah, DIST value of 1,867 kilometers and a minimum value of 4 kilometers, AGE has a maximum value of 62 years and a minimum value of 17 years, TIME a maximum value of 48 hours and a minimum value of 6 hours, EDU with a maximum value of 16 years and a minimum value of 6 years, PERCEP_SARANA has a maximum value of 5 points and a minimum value of 2 points, ACCESSIBILITY maximum value of 5 points and a minimum value of 1 point, PERCEP_ATRC maximum value of 5 and a minimum value of 2.

Furthermore, to describe the degree to which data is scattered and the size of the deviation or dispersion, size can be seen from the standard deviation of each variable. The standard deviation for the variables TCD 1,9196, TCB 474782,5, INC 1195583.27, DIST 217,571, AGE 10,696, TIME 10,818, EDU 2,3609, PERCEP_SARANA 0.6935, ACCESSIBILITY 0.8924, and PERCEP_ATRC 0.6599.

The INC variable statistically descriptive has a greater value than other variables. Of all the variables that have a skewness, the distribution is negative, only one is the PERSEP_ATRC variable. Furthermore, all variables have leptokurtic friction (kurtosis) which is indicated by a tapering value greater than 1.7843.

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CONCLUSION

1. The factors that influence Dieng tourism demand are income, cost of travel , cost of travel to Baturraden, education, age, sexual, distance, grouping, spending time to visiting Dieng, aim, promotion, attraction, information, infrastructure, and acessibility
2. The Total Economic Value of Dieng tourism is Rp. 4.337.400,9 per individu per yaer
3. The most dominant factors affecting Dieng tourism demand are attraction and information

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