Economic Valuation of *Taman Wisata Air Wendit* (TWAW) in Malang Regency: A Travel Cost Method

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ARTICLE INFORMATION

ABSTRACT

As part of the results of utilizing the non-physical side such as natural beauty, fresh air, interesting experiences, and used water sources, nature tourism is an activity that is right to get the above benefits. The research problem is the value of Taman Wisata Air Wendit (TWAW) and the facilities that surround it and aims to analyze the implications of the economic value of TWAW on the welfare of the surrounding community. The travel cost method (TCM is expected to illustrate the surplus of benefits from consumer spending who enjoys TWAW. An individual's experience of being willing to pay to get the benefits of TWAW by variables consisting of distance, income, transportation costs and number of groups. From the estimation results, it can be found that the distance and income of visitors play a significant role in encouraging decision-making to visit TWAW. This has an impact on the high results of the economic valuation which is calculated to reach Rp. 158,081,234,97 per year. The findings also suggest that managers improve facilities and infrastructure to open the potential for additional volume of visits and have implications for increasing TWAW's economic valuation in the future.

Keywords: Economic Valuation; Malang Regency; Taman Wisata Air Wendit (TWAW); Travel Cost Method

INTRODUCTION

Everything offered by the environment, such as natural beauty, clean air, plants, and other natural panoramas, will be of no value if these resources do not provide satisfaction or pleasure for their users (Bakhsh et al., 2020). Others can also enjoy environmental functions in the beautiful scenery, the freshness of the air, and the pleasure that impact the satisfaction felt by people when the environment functions as a recreational area. Everything offered by the environment, such as mountains, air, water, plants, and other natural panoramas, will be of no value if these resources do not provide satisfaction or pleasure for their users (Chen et al., 2004)

According to Cetin et al. (2021), the economic valuation of tourist attractions can demonstrate their benefits to visitors. Baveye et al. (2013) and Bostan et al. (2020) stated that visitors can achieve it through non-market environmental services to assess their willingness to pay (WTP). The value of natural resources provided by recreational services can be estimated by a non-market valuation method that expresses WTP as a price preference. This value is all prices users pay for the benefits of natural resources, both tangible and intangible.

In economic activities, especially in the tourism sector, the services and facilities and infrastructure offered are considered traded goods or services. Meanwhile, the visitor can assess prices through individual expenditures in carrying out tourism activities, both at locations and on the way to tourist destinations (Eriyati &Angreina, 2010). There are several approaches to assessing environmental services in the form of recreation, including the hedonic approach, the survey approach called the contingent valuation method (CVM), and the travel cost method (TCM).

The economic value of the tourism object under study can be estimated by calculating consumer surplus with the upper limit area being the cost of travel and the lower limit area being the amount of recreational demand (Haneur& Reid, 2017). Visitors or resource users who live in locations that are further away from the intended tourist attraction are less likely to visit the tourist attraction compared to those who live closer to the tourist attraction. In other words, for the recreational services offered by natural resources, the demand for recreational activities will decrease as prices or expenditures towards destinations increase (Samudro, 2006).

One of the water attractions or bathing tourism that utilizes the environmental services of the cultural section is the Wendit Water Tourism Park (TWAW) which located in Mangliawan Village, Pakis District, Malang Regency. This tourist location is quite close to the city of Malang with distance of approximately 8 kilometers. This tourist location is quite strategic because it is close to the community and is located on the Tumpang and Bromo tourist route, so it is very easy to reach by tourists. These conditions make this tourist attraction a very potential tourist attraction.
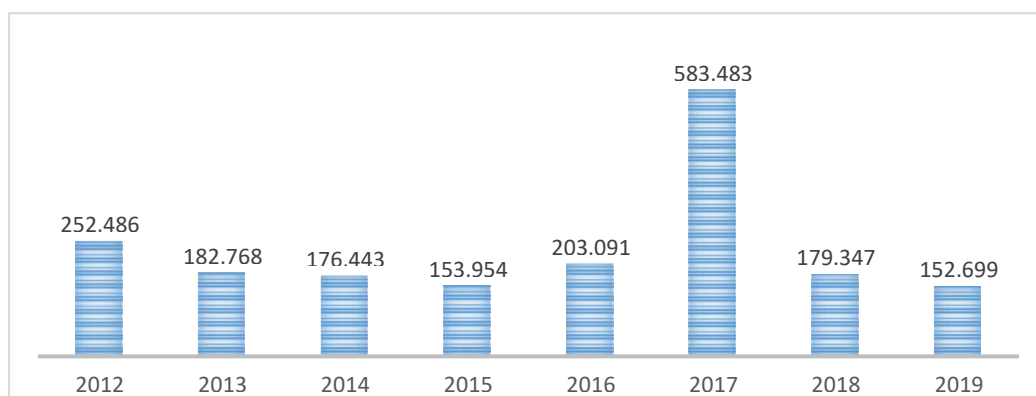
Figure 1. Number of Visitor on TWAW from 2012 to 2019

In Figure 1.1, visitors to TWAW generally fluctuate and tend to stagnate. In the following year, the number of visitors to TWAW again decreased. This shows that there is dissatisfaction felt by visitors when visiting TWAW so they do not make return visits. The number is decreasing and there are even no visits when the Covid pandemic is ongoing from 2020 to 2021. This is something that must be considered by the manager to evaluate all the attractiveness of the facilities and infrastructure offered so that they can fulfill the desire to achieve visitor satisfaction.

TWAW is a tourist attraction that has a direct impact on the lives of the surrounding community. The existence of TWAW provides opportunities for employment, increased entrepreneurial activity, and improved quality of life. The Malang Regency Government, which is the manager of TWAW, empowers the surrounding community through direct labor absorption to take care of cleanliness, security, and the provision of food stalls for visitors. This makes TWAW very influential, and its existence needs to be maintained so that it always has a positive impact on the community.

All problems that cause visitor dissatisfaction will of course affect the number of tourist visits to TWAW. The decrease in the number of visitors will have an impact on confining the value of TWAW's contribution to PAD in Malang Regency. Therefore, it is necessary to evaluate policies in the management of TWAW and calculate economic values or valuations so that in making decisions they can be considered thoroughly in all aspects.

This study aims to answer the problem formulation of how we estimate the factors that affect TWAW visits and what the economic value of TWAW is. To examine this, we use the travel cost method (TVM). This study uses TVM to assess the monetary value of TWAW's recreational services. We assume that recreational value is the difference between the maximum amount individuals are willing to pay and the actual costs incurred for recreational excursions in the catchment area. Thus, we consider variables such as travel distance, time, cost, and frequency to assess the features of recreational excursions. TCM has been widely used for site-based applications such as forest parks, wetlands, and protected areas to become the main cornerstone of recreational tourism (Fleming&Cook, 2008; Bostan et al.,2020; Hwang et al., 2020; & Ortacecma et al., 2002).

LITERATURE REVIEW

a. Tourism and Its Demands
   Tourism is an economic sector in a country that has a multi effect on each of the other economic sectors. The tourism sector has a positive impact on employment, increasing foreign exchange, and increasing economic growth. In Law No. 10 of 2009. Regarding Tourism, it is stated that tourism is a form of tourism activity that is supported by various facilities and services provided by the community, businessmen, government, and local government. In addition, Whitehead & Aiken, (2007) explains that tourism is a travel activity carried out by individuals alone or with a group with the intention of traveling, among others, to fulfill the desire to know something or get pleasure. Basically, tourism is an activity to satisfy every individual's curiosity about new things in different places. These activities provide a travel experience for each individual such as lodging, transportation, cultural services, entertainment facilities and various new activities that are not found in the place of origin.

   Tourism is generally dynamic and always undergoing renewal. In addition, tourism varies greatly according to the needs and purposes of the trip. According to Budiartha (2011) has categorized of tourism can be divided into three based on the concept, namely:
   1. Nature tourism, namely tourism activities or activities aimed at experiencing natural conditions or the attractiveness of their panoramas.

2. Cultural tourism, namely tourism that emphasizes culture as its object that presents cultural wealth and all its elements that provide education for tourists;
3. Ecotourism (ecotourism, green tourism, alternative tourism) is a tourism concept that educates visitors to participate in building environmental conservation (sustainable tourism). Usually presents a tourist attraction with the concept of nature conservation.

According to Setyawan et al., (2020) suggested components of tourism products (tourism supply side) which are usually in the form of a tourism destination system will consist of or offer at least the following main components.
1. Tourist attraction which can be based mainly on nature, culture, or special interest.
2. Accommodation or amenities, accessibility and transportation (air, land, or sea);
3. Public facilities.
4. Tourism supporting facilities, and
5. The community as the host of a destination.

The demand function above is an equation that explains that the amount of consumer demand for certain goods is influenced by social factors such as price, age, gender, monthly income, and substitute goods (Haban et al., 2019). In tourism, demand can be described as groups or individuals who are driven by certain motivations such as a pile of wants, needs, tastes, and likes to travel.

This approach is based on survey data from each visitor at a tourist site. This approach is more accurate than the ZTCM approach. Because data from travel expenses and socio-economic variables of visitors are used as explanatory variables of travel costs incurred. Individual travel costs can be estimated as follows,

$$Vij = f (Pij + Tij + Qi + Sj + Yi)$$

Description:

Vij = Number of visits made by individual i to place j
Pij = individual travel cost i on a tour to location j
Tij = individual time cost i due to visiting location j
Qi = quality of recreation area i
Sj = substitution of recreation area j
Yi = individual income i

b. Consumen Surplus

Consumer surplus is a term used to describe the difference between the price paid by consumers for goods or services and the actual market price. According to Nicholson and Snyder (2010) in Chen et al. (2004) consumer surplus is the excess value received by consumers from an item consumed compared to the price paid for the item. Consumer surplus arises because consumers receive more benefits than the value they spend and this excess ends in the law of diminishing marginal utility (Hwang et al., 2021). Consumer surplus can be measured as the area that lies between the demand curve and the price line.

According to Khan et al. (2018), environmental valuation techniques are based on the concept of willingness to pay more than consumers when carrying out consumption activities. This concept is a form of volunteerism from consumers to pay for the more benefits received. In tourism activities, especially nature tourism, consumers tend to be willing to pay more for the benefits of the facilities, facilities and infrastructure, as well as the attractions offered in order to fulfill satisfaction when making tourist visits. In addition, the concept of willingness to pay is a form of consumer contribution to the improvement of environmental quality that has been damaged as a

result of tourism activities

RESEARCH METHOD

a. Researh Model

This study used multiple linear regression analysis which can be formulated as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_6 D_1 + e$$

Where:
Y= Number of visiting
X1=Distance
X2= Revenue
X3= Travel cost
X4= Number of groups
D1= Similiar tourism subtitution/ Dummy
e = Error term

b. Travel Cost Method

The travel cost approach (TCM) is one method that can be used to assign value to goods or services that have no market value. According to Fleming & Cook (2008) argue that the principle underlying the TCM approach is the theory of consumer demand which explains that the value that a person places on the environment can be explained by the costs that individuals incur to the place visited. The TCM method is the oldest method for measuring indirect economic value. This approach is often used to analyze individual needs for recreational activities. The purpose of TCM is to determine the use value of natural resources by an indirect method or a proxy approach. The costs incurred for using natural resources services are used as estimates (proxies) to determine the price of natural resources under study. A method of course has its drawbacks. In the valuation of natural resources, both goods and services that do not have a market value (non-market value), the explanation cost method has the disadvantage of expensive research costs, time-intensive data collection, and research that focuses on individuals who only have one goal. tour. Therefore, individuals who carry out multipurpose visits are not included in the object of research. While in reality, individuals usually make double trips when traveling.

Individual Travel Cost Method (ITCM)

This approach is based on survey data from each visitor at a tourist site. This approach is more accurate than the ZTCM approach. Because data from travel expenses and socio-economic variables of visitors are used as explanatory variables of travel costs incurred. Individual travel costs can be estimated as follows.

$$V_{ij} = f(P_{ij} + T_{ij} + Q_i + S_j + Y_i)$$

Description:
V_{ij} = Number of visits made by individual i to place j
P_{ij} = individual travel cost i on a tour to location j
T_{ij} = individual time cost i due to visiting location j
Q_i = quality of recreation area i

Sj = substitution of recreation area j
Yi = individual income i

RESULTS

Based on the regression results in below, the regression model equation can be written as

follows:

$$Y = 4.101586 - 0.069218X_1 - 0.0000000319X_2 - 0.0000106X_3 + 0.214490X_4 - 0.012492X_5 - 1.188117D_1$$

Table 1. The Regression result of the model

Variabel	Koefisien	Probabilitas
C	4.101586	0.0000
Distance	-0.073870	0.0242
Revenue	-0.0000000401	0.6524
Travel Cost	-0.0000103	0.0036
Number of Group	0.204208	0.0001
Similiar tourism subtitution/ Dummy	-1.058820	0.0005

Source: managed data ,2022

Table 2. Summary Statistics of model

Independent Variable	t-statistik	Prob.	Result
Distance	-2.301159	0.0242	Significant
Revenue	-0.452296	0.6524	No Significant
Travel Cost	-3.007211	0.0036	Significant
Number of group	4.010729	0.0001	Significant
Similar tourism subtitution	-3.622417	0.0005	Significant

Source: managed data ,2022

DISCUSSION

a. The Effect of Distance on the Number of Individual Visits

Based on the regression results, it is known that the distance variable has a significant and negative effect, which means that the farther the individual is from the TWAW, the less likely the individual is to visit. The results of this study are in line with the results of research by Shelvatis et al. (2017) who found that the closer the individual is, the greater the opportunity for the individual to visit Batu Karas Beach. with the house so that there is no need to rush in preparing all the tools and equipment needed. Therefore, its close location, very easy accessibility, and low cost make TWAW an option

for families who want to take their children on vacation. In carrying out promotions, the manager tends to only place them in areas close to TWAW. This means that tourism promotion is not widespread so that information on the existence of the TWA is not available to tourists visiting Malang Regency. This is one of the reasons why the majority of visitors who come are located close to the TWAW within a radius of 1 km to 15 km. Therefore, operators need to carry out promotions through media that can reach tourists in various locations so that information on the existence and attractiveness of TWAW can be widely accepted.

b. The Effect of Income on the Number of Individual Visits

The previous estimation results show that the income variable has an influence but is not significant and is negative for individuals in deciding to visit TWAW. This is not in accordance with the author's hypothesis that the income variable has a significant and positive effect. The results of empirical tests in this study reveal the opposite, meaning that if an individual's income increases, it will reduce the individual's decision to visit TWAW and prefer a tourist attraction that suits the individual's tastes as their income increases. In line with the results of this study, research conducted by Shelvatis et al (2017) also proves that individual income does not have a significant effect on tourist visits. Meanwhile, research conducted by Haban et al (2019); Oby & Suhartini (2016) found different results. Keynes's theory of consumption explains that when an individual's income increases, the level of consumption also tends to follow and vice versa. The results of this study turned out to reject this theory. This The previous estimation results show that the income variable has an influence but is not significant and is negative for individuals in deciding to visit TWAW. This is not in accordance with the author's hypothesis that the income variable has a significant and positive effect. The results of empirical tests in this study reveal the opposite, meaning that if an individual's income increases, it will reduce the individual's decision to visit TWAW and prefer a tourist attraction that suits the individual's tastes as their income increases. In line with the results of this study, research conducted by Shelvatis et al. (2017) also proves that individual income does not have a significant effect on tourist visits. Meanwhile, research conducted by Haban et al (2019), Khoirudin & Khasanah (2018), Oby & Suhartini (2016) found different results. Keynes's consumption theory explains that when an individual's income increases, the level of consumption also tends to follow and vice versa. The results of this study turned out to reject this theory. This indicates that the TWAW which, if categorized as goods, is included in inferior goods. This needs to be a concern for the management to decide on management policies for the inferior goods category so that all decisions taken have a positive impact.

c. The Effect of Travel Costs on the Number of Individual Visits

The estimation results on the travel cost variable show a significant and negative effect on the number of tourist visits to TWAW. That is, the higher the costs incurred to visit the TWAW, the smaller the number of visits. These results are in line with the results of research by Haban et al (2019); and Oby & Suhartini (2016). This is due to the status of TWAW which is known as a cheap tourist attraction with a close location and easy accessibility because it can be reached by public transportation or other transportation so it is very easy to reach. This condition gives the view to individuals that there is no need to allocate a large budget just for a trip to TWAW. The results of this study are in line with the law of demand which explains the effect of price on consumer behavior, namely if the price of an item or service increases, the demand for that item will decrease. At TWAW, travel costs are a reflection of the price paid by consumers. So, if the number of individual travel costs when visiting TWAW increases, the number of visitors will tend to decrease. This means that individuals will prefer other tourism objects in accordance with the value of these expenditures.

d. The Influence of the Number of Groups

 The Number of Individual Visits Based on the estimation results, it was found that the variable number of groups had a significant and positive effect. That is, the more members of the tourist

group who visit the TWAW, the number of individual visits will also increase. These results are in line with the results of research by Oby & Suhartini (2016). These results strengthen the author's argument that the TWAW is included in a family tourism object so that when visitors are generally family members consisting of father, mother, and children. In addition, the available sports, such as children's swimming pools, water booms, and water bikes are generally aimed at children who need parental supervision.

e. The Effect of Similar Tourism Substitution

The Number of individual visits based on the regression results that have been described previously, it is known that similar tourism substitution variables have a significant and negative effect. This means that if tourists get information about attractions similar as TWAW which offers a closer location, cheaper travel costs, or even more attractive tourist attractions with complete and quality facilities, then tourists will discourage visiting. to TWAW and prefer this kind of tourist attraction. The results of this study are in line with the findings of Haban et al. (2019), namely the existence of a tourist attraction similar as the Bogor Botanical Gardens will reduce the interest of tourists to visit the Bogor Botanical Gardens. The attraction that Bogor Botanical Gardens Tourism and TWAW are almost the same, namely the existence of a forest in the middle of the city and a water source that can be used as a bath. The results of the research conducted by Whitehead &Aiken (2007) have founded different things. Their research found that the existence of similar tourist attractions had a positive but not significant effect on tourists' decisions to visit another tourist. This is because the others have a tourist attraction that has a very large attraction and a location far from settlements makes tourists need to sacrifice time and money just to visit. Unlike TWAW which is included in the tour with a small sacrifice fee because the location is close enough so there is no need to sacrifice a large amount of time to get to the location. So, it can be concluded that the substitution of similar tourist objects will affect certain types of tourism and the value of sacrifices incurred by visitors to achieve visit satisfaction.

f. Economic Value of TWAW

The estimation results on consumer surplus found that the individual consumer surplus value for visitors to the TWAW was in the interval of Rp. 252,721 to Rp. 671,161 with an average consumer surplus of Rp. 436,893 per year. The value of the consumer surplus is greater than the average amount of costs incurred by individuals when visiting Wendit Water Tourism Park, which is Rp. 82,375, - per individual per one visit. The entrance ticket price offered by the management of TWAW is Rp. 17,500 for adults and Rp. 12,500 for children. So, it can be concluded that the benefits received by visitors when visiting TWAW are far greater than the costs that are sacrificed or paid by visitors. The benefits received are in the form of intangible benefits such as natural beauty, pleasure, and interesting experiences that cannot be assessed directly. The average annual visitor to TWAW is 235,534 visitors, so it is found that the economic value of TWAW on average per year is Rp. 102,903,155,862 and is in the range of Rp. 59,524,388,014 to Rp158,081,234,974 per year. This value only estimates the value of the TWAW in terms of tourism or recreation. Meanwhile, there are other values that can complement it in order to achieve the overall economic value of TWAW. This value can be used by the manager to attract investors to improve the management of the TWAW so that it has better quality.

CONCLUSION

Long Distance factor have been a negative effect on individual decisions to visit TWAW. That is, the further the distance an individual must travel, the smaller the individual's desire to visit. Travel costs incurred by individuals when going to TWAW turned out to have a large negative effect. This means that the more individuals spend both on the trip and at the tourist location, the less likely they are to visit again. The number of groups of friends or family is known to have a large positive effect. This means that the increase in the number of members who want to visit TWAW, the greater the individual's belief or desire to visit as well. Similar tourism substitution has a negative effect. This means that the existence of a similar tourist attraction provides choices for individuals, so that if the tourist attraction provides a better offer than the TWAW, then individuals tend to choose the tourist attraction. Meanwhile, individual income does not have a major influence on the decision to visit TWAW. Meanwhile, based on the regression results, it is known that individual income is negative. This means that the TWAW is a tourist attraction that can be enjoyed by individuals with various income backgrounds. But when individual income increases, individual desire will decrease to visit TWAW.

The benefits provided by the TWAW are greater than the individual expenses when visiting. This is evidenced by the value of consumer surplus, which is greater than individual expenditure, which is IDR 436,893 per year. So, the economic value of TWAW is an average of IDR 102,903,155,862 per year with an interval of IDR 59,524,388,014 to IDR 158,081,234,974, - per year. Based on the conclusions of the study, the researchers suggest to the management of the TWAW the following things.

To increase a lot of visitors on the TWAW, local government should provide easy way to access through building TWAW infrastructures such as wider a lot parking's vehicle, keeping clean the site and proper facilities. Endorsing for promotion of TWAW from famous public figures or influencers may assist to introduce TWAW for wider tourist backgrounds. Recommendation for future research is assessing the economic valuation by using other methods such as Zonal Travel Cost or Contingent Valuation Method (CVM)

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