

COMMUNITY PARTICIPATION THROUGH ENVIRONMENTAL INVESTMENT TO DEVELOP ECOTOURISM IN BEDENGAN FOREST ECOTOURISM, MALANG REGENCY

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Abstract

Bedengan Forest Ecotourism, Malang Regency is one of sustainable tourism destinations, a tourism area that is environmentally friendly and based on ecology which is managed by Lembaga Kemitraan Desa Pengelola Hutan/Forest Management Village Partnership Institute (LKDPH). This research discusses about community especially tourist motivation to participate through environmental investments that have an impact on preserving the forest environment in Bedengan. The objectives of this research are to find out the priority tourist attributes of Bedengan Forest Ecotourism and estimating the value of the community's Willingness to Pay (WTP) for retribution. The analytical methods used quantitative descriptive and contingent valuation method. The research results show that the community feels that the quality of the environment is better with the existence of a conservation area so they are willing to make environmental investments; the community prioritize cheaper price as a tourist attribute that attracts them to revisit Bedengan forest ecotourism; and the community's WTP retribution (entrance ticket) is IDR 44,500 per person. The results of calculation show that the community WTP has increased from the initial retribution set by LKDPH. The results of this research can be used as an evaluation material for LKDPH to continue maintain tourism development policies by paying attention to environmental, social and economic sustainability.

Keywords: *sustainable tourism, environmental investment, contingent valuation method*

Introduction

According to Ministry of Tourism and Creative Economy, sustainable tourism has four pillars as the focus of sustainable development, namely: tourism destination management (business management and regulations), sustainable economy, sustainable culture and environmental

preservation (environmental sustainability) (Kemenparekraf, 2016). Sustainable tourism is tourism that involves all stakeholders to manage resources to meet economic needs without ignoring local socio-cultural sustainability, natural balance and biodiversity. Sustainable tourism is a response to the increase in mass tourism activities that are oriented towards creating short-term profits for small groups of people.

Ecotourism carries the concept of sustainable and environmentally friendly tourism. Along with increasing environmental problems,

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Received: 19 November 2023
Revised : 13 February 2024
Accepted: 17 February 2024
DOI: 10.23969/jcbeem.v8i1.11003

ecotourism is seen as a way out in bridging economically and socially profitable tourism activities with the environment as a natural resource providing tourism objects.

Forests are one of the renewable natural resources that need to be managed sustainably so that their functions (economic, social, environmental sustainability) can be fulfilled (Harini et al., 2021). Forests have environmental services, namely: (1) Provisioning - Food, fiber, energy, genetic resources, medicinal resources, clean water; (2) Regulating - Climate regulation, absorbing and storing carbon, regulating water flow and flooding, preventing and protecting from natural disasters, purifying water, maintaining air quality, regulating natural pollination; (3) Supporting - nutrient cycles, formation of soil layers and maintenance of soil fertility, primary production, biodiversity; and (4) Culture - aesthetics, recreation, ecotourism (Rusdiana et al., 2020; Phelps et al., 2014).

Malang Regency has potential forest resources covering an area of 42,365 Ha as protected forest and 43,105 Ha as production forest managed by Perum Perhutani (BPS, 2015). The existence of regional autonomy gives regional governments the authority to optimize their sources of income through natural resources. Based on Law no. 22 of 1999 concerning Regional Autonomy, the Malang Regency Tourism and Culture Office realized the development of the Selorejo tourist village. The Bedengan forest ecotourism area was originally a production forest area owned by Perhutani. The legality of forest management by villages is also stated in PermenLHK number 4 of 2023, second part, paragraph 1, article 8. This scheme optimizes the management of part of the Perhutani forest area to be given management rights to the Selorejo Village government. Furthermore, the Selorejo Village Government through the Forest Management Village Partnership Institute (LKDPH) was given the

authority to manage the 2.5 Ha Bedengan forest as an ecotourism area.

One of the main problems in efforts to realize sustainable tourism is the understanding and capacity of village management institutions and communities in managing and understanding the potential of their natural tourist destinations. According to Utami (2020), development of tourism activities will reduce benefits and functions of the forest, such as conservation of biodiversity and conservation of abiotic components. Apart from that, tourism also has other impacts which increase the burden on the environment which causes, among other things: landslides, erosion, reduced vegetation, clearing of trees, threats to endemic vegetation, migration of fauna, decreased quantity and quality of water, and air emissions (Ismayanti, 2010). If forest areas are converted to other uses, it will result in the loss of ecological and social functions such as biodiversity, regulating water systems, and places for people to carry out traditional activities (Yulian, et al. 2011), (Isyala & Pharmawati, 2019).

The current condition of the Bedengan forest ecotourism area is worrying. Most people do not yet have insight into environmental services and the value of forest resources, especially intangible benefits. This can be seen from the lack of public awareness in maintaining the sustainability and cleanliness of areas in several Bedengan forest ecotourism areas. On the other hand, village managers have limitations in terms of human resources and funds. The budget allocated by the government for the forestry sector is inadequate. Thus, it is required to find alternative domestic sources of financing for the sustainable conservation of the forest (Abdeta, et al, 2023).

Community participation in the development of tourist destinations can be done through thought, energy and materials (Hermawan and Hutagalung, 2021) (Yustiani et al., 2019).

Community participation tends to be a form of mobilized participation (requested participation) rather than voluntary participation (own initiative). Even though the community is willing to participate, the implementation still needs to be actively mobilized by the management (Armadinata and Pharmawati, 2019).

The community will feel ownership and responsibility for sustainably preserving natural resources if they are actively involved in ecotourism activities (Rohman, Ghofar, & Saputra, 2016). Community participation can be interpreted as a form of long-term environmental investment that will encourage communities to be more responsible and support sustainable management of natural resources. In this case, the community is asked to be willing to spend a certain amount of money to realize green management which can later be used by village managers for conservation activities or programs in ecotourism areas.

The tourism attributes (elements) are define as destination components, which include the physical and natural environment, services, and facilities, which attract tourists (Ningtias et al, 2022). According to Diata & Pitana (2022), the components of ecotourism attributes that must be provided to satisfy tourist include attraction, facilities, infrastructures, transportation, and hospitality. Tourism attributes tend to support tourist perception and expectation about destination.

The aim of this research is to look at the dominant tourism attribute elements for the community in the Bedengan forest ecotourism area. This research also aims to measure the extent of the community's Willingness to Pay (WTP) in making environmental investments through retribution rates for the development of sustainable tourism in the Bedengan forest ecotourism area in Selorejo Village, Malang Regency. It is hoped that this description of

community attributes and participation can support and realize village management efforts to preserve the environment and prevent environmental pollution.

Research Methodology

Research Location

The research was conducted in the Bedengan Forest Ecotourism area, Selorejo Village, Dau District, Malang Regency. The research location was chosen with the consideration that this location is visited by many local tourists and is one of the mainstays of ecotourism in Selorejo Village (Figure 1).



Figure 1. Bedengan Forest Ecotourism, Malang Regency

Measurement of community participation was carried out using a questionnaire. The type of data used in this research is primary data collected and processed by the researcher himself. Primary data was obtained through direct interviews and questionnaires with Bedengan Forest Ecotourism tourists.

The sampling technique uses non-probability sampling in the form of accidental sampling (Sugiono, 2018), which means anyone found

within a certain time limit in the Bedengan forest ecotourism area can be used as a respondent. Data collection was carried out in August-September 2023. Data from respondents was then strengthened by interviews with LKDPH to obtain an overview of Bedengan forest ecotourism management.

Respondents are tourists who visit the Bedengan forest ecotourism area on the grounds that they are the people who have made the greatest contribution to sustainable tourism development activities. Tourists are also expected to have the correct knowledge and perception regarding the management of forest environmental services and have maturity in making decisions and playing an active role in preserving the sustainability of tourism destinations.

Population is the total number of subjects who meet the requirements to be research respondents. Based on visitor data for 2022, the Bedengan forest ecotourism tourist population is determined to be an average of 17,115 people/month. Researchers used the Slovin formula to determine the sample size in this study:

$$n = \frac{N}{1 + Ne^2} \quad (1)$$

where n is minimum number of respondent, N is total number of sample population and e is margin of error.

$$n = \frac{17,115}{1 + 17,115 \times 0.1^2}$$

$$n = 100 \text{ respondents}$$

Tools and Materials

The data analysis uses Contingent Valuation Method (CVM). CVM is a survey-based research method to estimate how much people value goods or services that are not traded on the market. This method is usually used to assess environmental services. WTP is defined as how much someone is willing to pay to repair a

damaged environment (Hasibuan, 2014). The community's willingness to pay shows the existence value of forest resources in Bedengan forest ecotourism. Willingness to pay can also be used to measure how much environmental investment a community can afford.

Results and Discussion

Investment activities are the process of investing capital for the long term in the form of operational costs, maintenance costs and other costs. In a certain period, the investment is expected to produce a number of profits for investors (Mumin, 2017). However, environmental investments often cannot be measured economically (profitable). The benefits of new environmental investments can be felt and enjoyed by the community in the long term through improving environmental quality.

LKDPH as the manager stated that the main obstacle in maintaining forest areas is conflicts of interest in land use. The surrounding community has a role in forest destruction due to the conversion of land into the plantation and agricultural sectors. In 2021, Bedengan forest ecotourism was affected by flooding which caused loss and damage to infrastructure. LKDPH even spent private funds to revitalize the critical Bedengan forest ecotourism area and rebuild damaged infrastructure. Another challenge faced by managers is tourism activities which produce waste and pollute the water resources of the Metro river which passes through the Bedengan forest ecotourism area.

Therefore, environmental investment needs to be considered as an effort to maintain resource conditions in ecotourism areas. The level of community concern for the existence of forest resources can be measured by the amount of material they are willing to pay for ecotourism area management activities. A general description of research respondents can be seen in Table 1.

Based on Table 1, it can be seen that the majority of tourists visiting the Bedengan forest ecotourism area are male, namely 60%, while 40% are female. In terms of age, most tourists are dominated by the 21-30 years old age group with a percentage of 76%. In terms of formal education level, the majority of tourists have a bachelor's degree, namely 73%. In terms of type of work, the majority of tourists work in the private sector, namely 70%. In terms of income, data was obtained that the majority of tourist income was in the range of IDR 1,000,000 - 2,000,000, namely 70%.

Table 1 Respondent characteristics

No	Characteristic	Description	Total
1	Gender	Man	60
		Woman	40
2	Age (years old)	< 20	10
		21-30	76
		>30	13
3	Education	Junior high school	7
		Senior high school	20
		College	73
4	Occupation	Civil servant	10
		Private	70
		Other	20
5	Income (IDR)	< 1,000,000	10
		1,000,000 – 2,000,000	70
		> 2,000,000	20
6	Travel time (days)	1-2	90
		3-4	10
		> 4	0
7	Origin	Local	20
		Out of town	80

The majority of tourists who visit the Bedengan forest ecotourism area do light activities such as walking around the Metro river basin and camping on the camping ground provided by the management. The average tourist spends around 1-2 days, which is 90%. Most tourists come from outside the city, namely 80%. Through this data, it can be concluded that Bedengan forest

ecotourism is quite popular as a tourist destination.

Several components of tourism attributes are the main motivation for tourists when carrying out tourism activities. Tourist attributes are the reasons that make tourists come to a tourist location repeatedly. This research uses six components that make tourist destinations attractive, namely: Attraction, accessibility, amenities, ancillary, human resources and price (Kristianto et al., 2018; Buditiawan, 2021).

The assessment of tourism attributes uses a Likert measurement scale with a score of 1-5, where a score of 1 is strongly disagree and a score of 5 is strongly agree. The measurement results of tourism attributes can be seen in Table 2.

The measurement results show that the costs incurred for traveling are the main attributes considered by tourists when visiting the Bedengan forest ecotourism location. The retribution charged to each visitor to enter the Bedengan forest ecotourism area is IDR 10,000/person. This price is quite cheap when compared to other tourist attractions. Additional fees are given only when tourists want to carry out camping activities at a rate of IDR 125,000/camping ground/night. The second attribute that is taken into consideration is amenities, namely various public facilities that tourists can enjoy. The availability and cleanliness of facilities is always a priority for tourists to come back. Meanwhile, the third attribute is ancillary, namely additional supporting facilities and existence of management institutions. Bedengan forest ecotourism manage by LKDPH as organizations which take the form of government to support tourist activities. LKDPH is a part of tourist village which supported by government policy both regional and central for organizing tourist activities.

Tabel 2. Tourism Attributes

No	Variabel	Parameter	Total	Mean
1	Attraction	Views of pine forests, flowing river water, outbound places, camping and family recreation	383	3.83
2	Accessibility	Ease of road access to tourist attractions, availability of public transportation	392	3.92
3	Amenities	Facilities available to tourists (restaurants, toilets, tracking routes, comfortable parking, security facilities)	405	4.07
4	Ancillary	Additional supporting facilities, the existence of management institutions	402	4.02
5	Human resource	Labor/tour guide services	400	4.00
6	Price	Costs incurred for travel	409	4.09

Before using the CVM method, researchers need to build a hypothetical market. Hypothetical markets are used to describe tourist environments that are considered to have environmental problems. Tourists will be given an explanation regarding the advantages and disadvantages of tourism activities in the Bedengan forest ecotourism area, as well as the management's plans for developing facilities and infrastructure. Respondents received information regarding environmental improvement programs that would be carried out in ecotourism areas. The existence of a hypothetical market has consequences for visitors to contribute materially to environmental improvement (Madaidy & Juwana, 2019). The hypothetical

market will encourage respondents to objectively assess the environmental services obtained from ecotourism areas.

The WTP value range is divided into 8 classes with a willingness to pay value ranging from IDR 0 – IDR 200,000. Based on 2022 data, the population of Bedengan forest ecotourism tourist is 17,115/month. This data shows a quite high intensity of visitor arrivals in ecotourism areas. This means that Bedengan forest ecotourism has quite large economic potential which can be utilized to protect and maintain the quality of the environment around the Bedengan forest ecotourism area. The WTP value ranges can be seen in Table 3, Figure 2, and Figure 3.

The estimate of the average WTP value of respondents is based on the proportion of the total WTP value given by respondents to the total number of community respondents and visitors who are willing to pay.

$$\text{Average WTP} = \frac{\text{WTP Sample}}{\Sigma \text{ Sample}}$$

$$\text{Average WTP} = \frac{\text{IDR } 4,450,000}{100}$$

$$= \text{IDR } 44,500/\text{person}$$

Table 3. Willingness To Pay

No	Range value WTP	WTP	F	Total WTP (IDR)
1	0-24,000	-	-	-
2	25,000-49,000	30,000	35	1,050,000
3	50,000-74,000	50,000	50	2,500,000
		60,000	15	900,000
4	75,000-99,000	-	-	
5	100,000-124,000	-	-	
6	125,000-149,000	-	-	
7	150,000-174,000	-	-	
8	175,000-200,000	-	-	
		Total	100	4,450,000

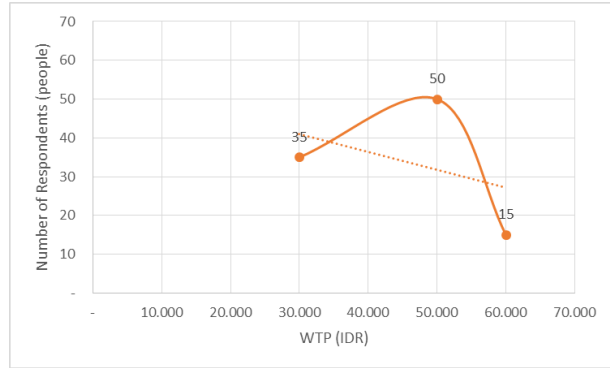


Figure 2. WTP Curve

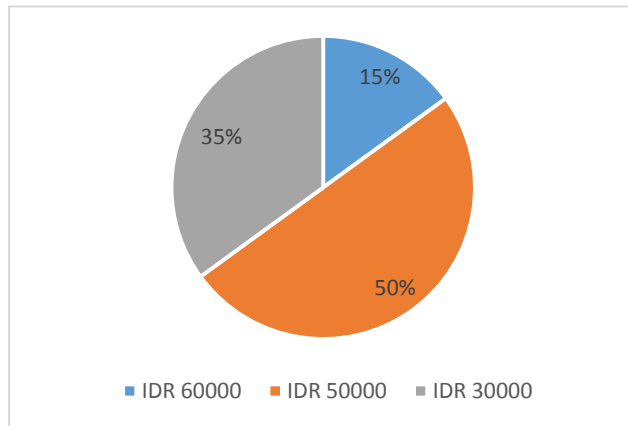


Figure 3. WTP Chart

After estimating the average WTP value, the total WTP value of tourists is then estimated using the formula:

$$\text{Total WTP} = \sum WTP \text{ Individuals} \times \text{population}$$

So we get the economic value of Bedengan forest ecotourism resources:

$$\begin{aligned} \text{Total WTP} &= \sum WTP \text{ individual} \times \text{population} \\ &= \text{IDR } 44,500 \times 17,115 \\ &= \text{IDR } 761,617,500 / \text{month} \end{aligned}$$

LKDPH has set the entrance ticket price for Bedengan forest ecotourism at IDR 10,000. Based on the results of the WTP survey, tourists are willing to pay higher than the set retribution rate, namely IDR 44,500/person. The percentage increase in retribution prices based on WTP is 34.5%. This can be an input for managers to set new entrance ticket prices to the Bedengan forest ecotourism area. Apart from that, the

retribution rates obtained by the management are also expected to provide better facilities. With the improvement in quality, it is hoped that many tourists will come back and participate in preserving Bedengan forest ecotourism resources.

Conclusions

Nature-based tourism activities (ecotourism) have the potential to continue to develop and be sustainable. The attraction of ecotourism should be the natural resources themselves. What still needs attention is the awareness of tourism actors (tourists and managers) in preserving existing resources.

The community's motivation to participate in protecting the environment, especially Bedengan forest ecotourism, has not yet been seen. This can be seen from the three priority attributes of tourist areas which attract tourist arrivals, namely: (1) Price (2) Availability of supporting facilities (toilets, tracking routes, comfortable parking, security facilities) and (3) Ancillary. The research results show that economic elements and personal satisfaction are still the main factors that attract tourists. Meanwhile, the attraction attributes that researchers expected to be the main components of tourist attractions were actually the last components chosen by respondents.

Based on the results of a survey conducted on 100 respondents, the average WTP value for paying retribution or entrance tickets can be calculated at IDR 44,500/person. The value of the existence of Bedengan forest ecotourism using the CVM approach shows the potential environmental investment value that can be managed by LKDPH on average is IDR 761,617,500/month. This shows that tourists' willingness to invest in the environment to preserve the Bedengan forest ecosystem is quite high. This information can be utilized by

LKDPH in developing sustainable tourism strategies in the Bedengan Forest ecotourism.

LKDPH can create tourism programs that involve tourists to participate. For example, with a tree planting program to revitalize critical land. This activity can be used as an attraction that can attract tourists.

Acknowledgment

Authors would like to thank the Research and Community Service Agency (BPPM) of the Brawijaya University Postgraduate School for funding this research through the 2023 Young Lecturer Research Scheme. The authors also thank all related parties, especially students of the Master's program in Environmental Resource Management and Postgraduate School Development. Brawijaya University assisted in collecting data for this research and LKDPH as the Bedengan forest ecotourism manager who provided permission to collect data around the location.

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