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Economic Analysis of Ecotourism Development in Mangrove Areas Using the Travel Cost Method Approach

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ABSTRACT

The concept of ecotourism is the development of tourism that supports efforts to preserve the environment (natural and cultural), involves and benefits the local community, and is comically profitable. Mangrove ecotourism as one of the most important natural resources, namely the germplasm warehouse which contributes to the potential of genetic resources and has a high aesthetic value, is very appropriate when developed with the concept of ecotourism. Therefore, this research proposal aims to analyze how much economic value the ecotourism development of the Mangrove Ecotourism area is in detail. The research proposal uses the Travel Cost Method Approach to analyze the Economic Value of Ecotourism Development in the Mangrove Ecotourism Area, East Java.

KEYWORDS

Economic Value. Ecotourism, Travel Cost Method Approach

INTRODUCTION

Ecotourism is currently gaining popularity alongside the "returning to nature" trend because it is one of the sustainable uses of natural resources. By 2024, ecotourism would grow three times faster than other tourism-related industries globally, per a 2007 report released by The International Ecotourism Society (TIES). This illustrates how ecotourism is currently far more popular than traditional tourism. With an annual worth of $12 billion USD, ecotourism has become a profitable industry in developing countries, according to research [1]. Since 2002, the Indonesian government has been promoting ecotourism as a means of fostering environmentally responsible and sustainable community travel. According to [2], Indonesia's ecotourism objective is to develop tourism by implementing measures that promote environmental conservation (both natural and cultural), engage and benefit the local population, and have a positive economic impact. This goal makes ecotourism a fantastic way to support Indonesia's biodiversity protection on a global, national, regional, and local scale. This aligns with the objectives of Indonesian ecotourism, specifically for (1). Acknowledge appropriate tourism management, which aids in

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the preservation of historical and cultural heritage as well as the environment (2). boosting community involvement and giving nearby areas financial advantages; and (3). Applying ecotourism regulations will make you another model for the growth of tourism.

One of the most important natural resources is mangroves. The role of mangroves for human life and its importance is much higher than its size. The function of mangrove ecosystems is not only as a repository of germplasm that contributes to the potential of genetic resources, but also as an ecotourism area because it has value [3]. Mangroves are natural resources of public goods that are common property. Therefore, mangrove natural resources have an open access dimension, which can be accessed by every resident according to their interests. Indonesia has 521 mangroves in large and small sizes spread throughout the region. The total area of mangroves is 3,489,140.68 Ha. Mangrove ecotourism is widely found in landmarks of East Java Province and is one of the supports for socio-economic and ecological activities of the community around Mangrove [4], [5], [6]. This is because Mangrove Ecotourism has a high ecotourism potential value, not only natural beauty but also the aesthetic value of historical relics and types of fauna found in the Mangrove Ecotourism area. Various efforts have been made to develop a wiser Mangrove Ecotourism natural resource management system. However, we cannot know in detail what is the economic value of ecotourism development in the Mangrove Ecotourism area. Based on the various considerations mentioned above, research on the Economic Value Analysis of Ecotourism Development in the Mangrove Ecotourism Area (Travel Cost Method Approach) is very important to be carried out [7], [8].

LITERATURE REVIEW

Ecotourism Development

Ecotourism is a relatively new term and is still very often discussed in various countries. Ecotourism comes from two words, namely 'eco' and 'tourism', which when adopted into Indonesian become the words 'eco' and 'tourism' or 'eco' and 'tourism'. The basic meaning of these two words can be described as follows: eko which in Greek means home and tourism which means tourism or travel [9]. In its development in Indonesia, ecotourism is more popular and widely used than the proper translation of the term ecotourism, which is ecological. The proper translation of ecotourism is ecological tourism [10], [11], [12].

The Ecotourism Society [13] was the first to define ecotourism as a type of travel to natural regions that is done with the intention of protecting the environment, conservation of life, and the well-being of local people. The following was said by the United Nations Environment Program (UNEP) and the World Tourism Organization (WTO), among other organizations. Traveling to comparatively unaltered natural places with the express purpose of learning about, appreciating, and taking pleasure in the landscape, its untamed flora and fauna, as well as any local cultural elements, is known as ecotourism. According to The International Ecotourism Society, or TIES, ecotourism is defined as "a tourist trip to natural areas with the goal of conserving or saving the environment and providing livelihoods for local residents." Additionally, according to the World Conservation Union (WCU), ecotourism is defined as travel by tourists to places where the environment is still pristine while honoring cultural and natural heritage, promoting conservation initiatives, avoiding adverse effects, offering socioeconomic advantages, and respecting residents' participation. A similar strategy was proposed by UNEP, which stressed that ecotourism needs to be able to guarantee environmental sustainability.

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Maintenance of ecological processes that sustain living systems, preservation of diversity, and the use of species and their habitats are the goals of assuring sustainability. [14], [15]. Ecotourism is increasingly being looked at because it has the potential to develop a new type of tourism that considers nature conservation. In addition, ecotourism can also provide benefits to local communities. This tour is not only for bird watching, horse riding, wilderness trail tracing, or similar activities that are natural but also related to the concept of forest conservation and local people. Ecotourism is a blend of various interests that grow from environmental, economic, and social concerns. The point is that ecotourism cannot be separated from conservation and its responsibility to the environment [16].

Economic Value of Environmental Resources

An object's perceived value at a specific location and moment is its value. The way that a person or group views an object, on the other hand, depends on their level of knowledge, comprehension, expectations, and norms [17], [18]. Therefore, depending on how each person or community views them, the value of natural resources varies greatly. The traditional definition of the science of economics is the study of how people distribute limited resources. Thus, the study that examines how natural resources like land, water, fish, and forests are distributed is known as natural resource economics. Specifically, the science aims to determine the number of resources that should be harvested to maximize societal advantages. [19], [20], [21]. Study of [22], [23], resources are defined as something that is seen as having economic value. It can also be said that resources are components of the ecosystem that provide goods and services that are beneficial to human needs. Resources are assets for the fulfillment of human satisfaction and utility. For something to be said to be a resource, it must have two criteria, namely there must be technological knowledge or skills to utilize it and there must be a demand for the resource [24], [25]. Something can be referred to as a neutral good if none of these two characteristics applies. Apart from generating directly and indirectly consumable goods and services, natural resources can also yield environmental services that offer benefits in other ways, like the benefits of amenity, which include peace and beauty. These benefits are commonly known as the benefits of ecological functions, and they are frequently not measured in an exhaustive assessment of the resources' worth. This value includes the value of the environmental services that a resource produces in addition to the market value of the products made from it. [26].

Methodologies

This research was carried out in the Mangrove Ecotourism area of East Java Province. The location selection was carried out deliberately (purposive) with the consideration that the area has strategic ecotourism potential and is beneficial to the people of East Java Province. The seven-month event took place between March and December of 2024. Both quantitative and qualitative primary and secondary data are the two categories of data employed in this study. Direct observations, in-depth interviews, focus group discussions (FGD), and questionnaire completion by relevant parties were the methods used to gather primary data. In addition to supporting information and literature reviews from different stakeholders, secondary data is gathered from books, scientific journals, and prior study findings. The data analysis method used in this study is Mixed Methods which consists of qualitative analysis and quantitative analysis.

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Results and Discussions

Characteristics of Respondent

The characteristics of the research respondents were obtained based on a survey of 20 respondents. Most of the respondents in the survey are men who are the head of the family. The research respondents were found in three locations of natural tourism areas, namely the Southern Region (Barakati Village), the Northern Region (Kayu Bulan Village), and the Central Region (Hutadaa Village). In addition, there were respondents who came from outside East Java Province. The characteristics of all respondents are as follows.

Age Level

Respondents in the Economic Value Analysis of Ecotourism Development of Mangrove Ecotourism Areas using the Travel Cost Method Approach cover a wide range of ages, from 17 to 55. The Economic Value Analysis of Ecotourism Development of Mangrove Ecotourism Areas Using the Travel Cost Method Approach research participants' age range is depicted in Figure 1. The respondents who were the oldest were in the distribution of productive age, which was 18–50 years old, and the respondents who were the youngest were in the distribution of unproductive age, which was under 18 years old, and they numbered five. The other respondents were respondents over 50 years old, which amounted to 8 people.

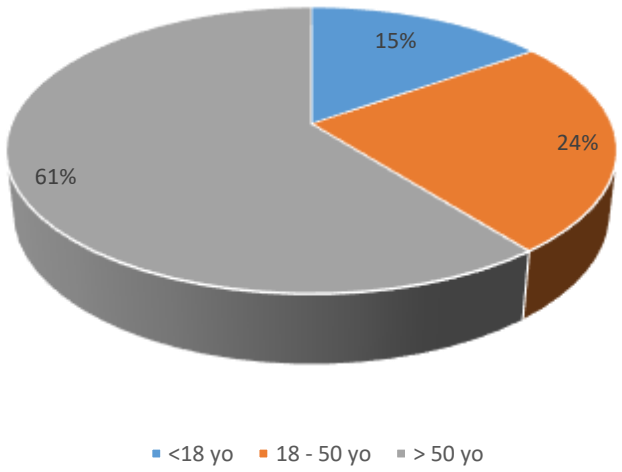

Figure 1 Characteristics of Respondents Based on Age Level

Source: Primary Data (Processed).

Education Level

Participants in the study Economic Value Analysis of Ecotourism Development of Mangrove Ecotourism Areas Using the Travel Cost Method Approach represented a wide range of educational backgrounds, from junior high school graduates to college graduates. Twelve respondents had completed high school,

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while two respondents had completed elementary school, making them the least educated respondents. Eleven respondents had completed higher education, and five had completed junior high school. In Figure 2, the Economic Value of Ecotourism Development of Mangrove Ecotourism Areas is analyzed using the Travel Cost Method Approach.

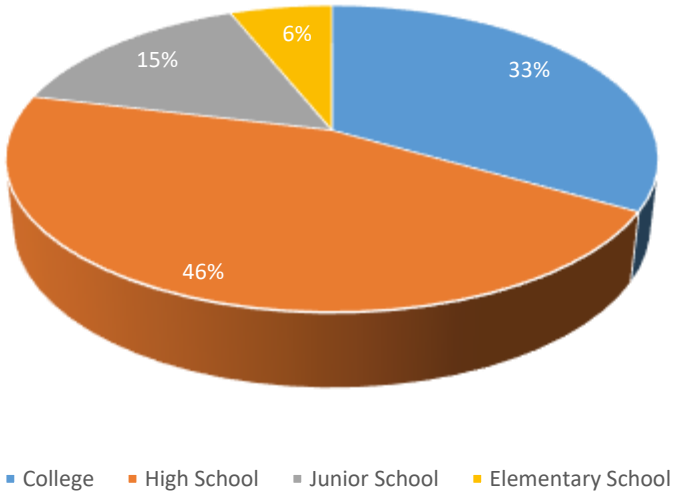

Figure 2 Characteristics of Respondents Based on Education Level

Source: Primary Data (Processed)

Job Type

The types of work of respondents in the Economic Value Analysis of Ecotourism Development of Mangrove Ecotourism Areas Using the Travel Cost Method Approach are very diverse, ranging from respondents who are still students to respondents who are Civil Servants. The respondents with the most types of jobs were Civil Servants with 14 people, while the respondents with the least type of jobs were private with 8 people. The type of work of the research respondents Economic Value Analysis of Regional Ecotourism Development can be seen in figure 3

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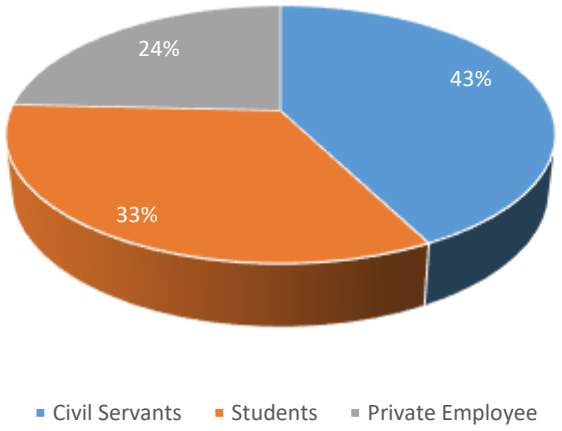

Figure 3 Respondent Characteristics Based on Job Type

Income Level

Respondents to the study Economic Value Analysis of Ecotourism Development of Mangrove Ecotourism Areas using the Travel Cost Method Approach have a wide range of monthly incomes; some make less than IDR5,000,000 per month, while others make more than IDR10,000,000. Nine respondents earn more than IDR 10,000,000 per month, making up the highest income group, while three respondents earn less than Rp 5,000,000 per month, making up the lowest income group. Eight of the respondents earn between Rp 5,000,000 and Rp 10,000,000 a month. The monthly income level of the respondents of the research Economic Value Analysis of Ecotourism Development of Mangrove Ecotourism Areas Using the Travel Cost Method Approach can be seen in Figure 4.

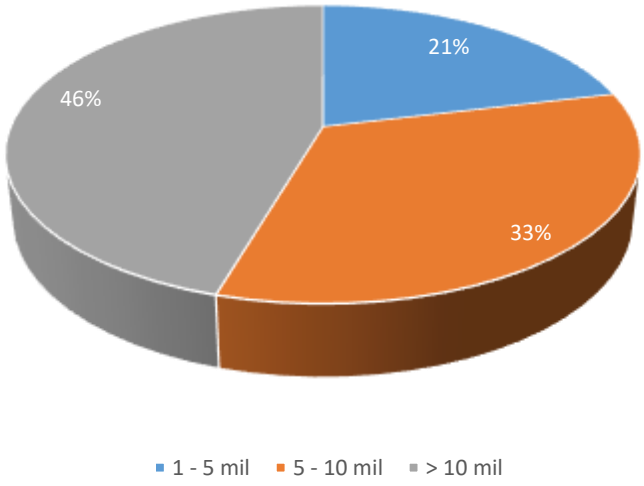

Figure 4 Characteristics of Respondents Based on Income Level

Source: Primary Data (Processed)

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Economic Value of Ecotourism

Mangrove ecotourism has a huge potential for natural resources, especially in terms of the ecotourism economy. This potential can be seen from the large economic value of ecotourism in the Mangrove Ecotourism area. The economic value of ecotourism in natural tourism areas is one part of the use value. The use value of the ecotourism economy of the Mangrove Ecotourism area is a direct use value because it can be enjoyed by consumers (tourists). In the research conducted, the researcher only focused on the economic value of Ecotourism Development of the Mangrove Ecotourism Area which is a direct use value. This is done because the economic value of Ecotourism Development of the Mangrove Ecotourism Area has never been specifically calculated.

The economic value of ecotourism is the value of natural resources that can be marketed (market valuation) and is based on a survey where the willingness to pay is obtained directly from respondents who are visiting tourist attractions in the outdoors (outdoor recreation), fishing, hunting and hiking in the Mangrove Ecotourism area. The willingness to pay was directly expressed by the respondents orally or in writing to the researcher. The analysis of the willingness to pay (willingness to pay) of respondents for the economic value of Ecotourism Development of the Mangrove Ecotourism Area was obtained through a scenario, so that every respondent who is visiting natural tourist attractions in the Mangrove Ecotourism area is willing to pay.

The results of the scenario were obtained from the number of respondents who were willing to be interviewed and were visiting tourist attractions in the open air (outdoor recreation), fishing, hunting and hiking in the Mangrove Ecotourism area, which was as many as 20 respondents. Of the total respondents interviewed, all respondents were willing to pay according to their ability for the natural attractions visited, while none of the respondents stated that they were not willing to pay. So that the WTP figure that appears is a direct offer from the respondent without any intervention, pressure and coercion. The economic value of ecotourism in the Mangrove Ecotourism area (October 2019) can be seen in Table 1.

Table 1 Ecotourism WTP Value of Mangrove Ecotourism Area (October 2024)

WTP (IDR)	Freq. of Respondents	WTP Value
25,000	6	150,000
50,000	7	350,000
75,000	5	375,000
100,000	2	200,000
Total	20	1.075.000
Median Value WTP		55
Σ Visiting		350,000
Total WTP Value		19,250,000

Source: Primary Data (Processed).

The value of Ecotourism WTP per visit is obtained from the result of multiplication between the amount of Ecotourism WTP that respondents are willing to pay and the number of respondents who are willing to pay. The total value of WTP Ecotourism per visit was obtained from the sum of all WTP Ecotourism values per visit, which was Rp.350,000.00. The median value of the Ecotourism WTP was obtained from the median value of the Ecotourism WTP per visit for respondents who were willing to pay, which was Rp.55,000.00. The total value of Ecotourism WTP per year is an estimate of the value of ecotourism in the

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Mangrove Ecotourism area obtained from the multiplication between the median WTP value and the number of tourists visiting East Java Province in 2024 (350,000 people), which is IDR19,250,000,000.

The economic value of Ecotourism Development of the Mangrove Ecotourism Area is quite large. This is because the ecotourism value calculated in this study is not only the value of tourist sites in the Mangrove Ecotourism area, but also included in the travel cost. Although tourist sites in the Mangrove Ecotourism area do not use tickets as an entrance fee, tourists are willing to pay more (willingness to pay) if the ecotourism area is commercialized.

Conclusions

Mangrove Ecotourism Areas have high ecological potential in terms of nature and culture as the parameters needed in the ecotourism concept. Tourism activities continue to develop in the Mangrove Ecotourism area even with the condition of Mangroves which are categorized as Critical Mangroves. Based on the results of data analysis, it was obtained that the desire to pay Willingness to Pay (WTP) to enter the Mangrove Ecotourism Area zone per year was obtained from the result of multiplication between the median value of WTP and the number of tourists visiting East Java Province in 2024 (350,000 people), which is Rp.19,250,000,000.00. Based on the findings of the study, the economic value of Ecotourism Development in the Mangrove Ecotourism Area is quite large. This is because the ecotourism value calculated in this study is not only the value of tourist sites in the Mangrove Ecotourism area, but also included in the travel cost. Although tourist sites in the Mangrove Ecotourism area do not use tickets as an entrance fee, tourists are willing to pay more (willingness to pay) if the ecotourism area is commercialized.

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