

## Economic Valuation and Demand for Pahawang Island Tourism in Lampung: Hedonic Pricing Approach

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### ABSTRACT

*Valuation method is a method to reveal economic value of an ecosystem or area. The valuation is important particularly for common properties exploitation which oftenly affected by trade-off effect. As an interesting natural tourism area, Pahawang Island creates multiplier effect on some industrial sectors such as inn, transportation, handicrafts, food and telecommunication. On the other side, tourism activity potentially harm tourism park sustainability. Inadequate visitors and community awareness on environmental aspects, will potentially deteriorate and degrade tourism park quality. The purpose of this research are to measure the economic value of coral reefs Island and factors that affect demand for tourism in Pahawang Island using hedonic pricing approach by asking directly to visitors what kind of pleasure value they obtained and felt while take a trip. This research employed primary data from 100 respondents and secondary data to obtain various informations. Economic value is calculated using total economic value and determinant of demand is estimated using Ordinary Least Square (OLS) method. The results show that economic value of coral reefs as tourism object at Pahawang Island is due to Rp 3.719.124.609,00. The estimation results show that factors such as visitor income, the beauty value of coral reefs, center of handycraft and souvenir providers, and accommodation infrastructure, have a positive and significant impact to the demand for tourism, while transportation infrastructure has a positive correlation but not significant to the demand.*

Keywords : economic valuation, hedonic pricing, tourism

### INTRODUCTION

According to Yoeti (2008) tourism demand can be divided into two, namely potential demand and actual demand. Potential demand is a number of people who have the potential to conduct tourism activities because they have spare time and savings are relatively enough. Actual demand is the people who are doing tourism activities in a particular tourist destination. This research focuses on Pahawang Island, tourism demand in Pahawang allegedly influenced by visitor income, coral reef beauty value which is implicit variable of hedonic, transportation means, center of souvenir and souvenir, and also lodging facility which is hedonic supporting variable. Pahawang Island tourism demand in this study did not use the price of replacement goods because Pahawang Island has unique characteristics for tourists who are not owned by other

marine attractions in Lampung. The demand for tourism can be seen from the public interest in the tourism object, the more interest it is, the more.

The existence of this phenomenon becomes an interesting thing to do research about the estimated demand of visitors Pahawang Island attractions. Increasing the number of visitors is expected to also provide an increase of multiple effects on the activities of visitors during their stay in the maritime attractions Pahawang Island. The presence of visitors can have an impact on the fulfillment of the needs to be paid such as accommodation, infrastructure, transportation, facilities and other services. This will give a domino effect on various fields and certainly provide economic activity (disposable income) for the host.

This research uses Hedonic Pricing Method (HPM) approach. According to Rosen (in Yeh and Sohngen, 2004), the hedonic method is used to estimate the marginal or price value of the facility for different groups or markets. The main use of the hedonic pricing method is to identify price factors based on the premise that prices are determined by both internal and external characteristics of goods and services. This method tends to be more widely used in environmental economics research or in measuring the value of residential property prices, but has also been used for tourism research. The use of Hedonic Pricing Method (HPM) in this study is based on the condition and characteristics of Pahawang Island attractions that have uniqueness, implicit value and distinctive character for tourists including in it is the supporting aspect of tourism which is around Pahawang Island object, so it can influence the demand of tourist who visited the attractions.

Another purpose of this study, in addition to analyzing the factors that affect demand Pahawang island tourism also to determine the economic value of coral reefs. Economic valuation is one form of effort used to provide quantitative value to goods and services produced by natural resources and environment both on market value (market value) and non market value (non market value) (Fauzi, 2006). One way to conduct an economic valuation is to calculate the Total Economic Value (NET). Total Economic Value is the economic values contained in a natural resource, both useful and functional values that must be taken into account in formulating management policies so that allocations and alternative uses can be determined correctly and on the target.

## LITERATURE REVIEW

The hedonic definition according to language is something related to pleasure. The hedonic econometric model is a model in which the independent variable relates to quality, eg the quality of a product to be purchased. The hedonic approach is a method to ensure the value or pleasure that is felt from a good attribute. The value of the attribute is an implicit price (hedonic price) that is not available as a market price.

According to Rosen (in Yeh and Sohngen, 2004), an item is judged according to the attribute concerned with its usefulness or characteristics. The hedonic method is used to estimate the marginal or price value of the facility for different groups or markets. The main use of the hedonist pricing method is to identify price factors based on the premise that prices are determined by both internal and external characteristics of goods and services.

Munn and Palmquist (in Martono and Llewelyn, 2000) say that the hedonic method is used to explain the price of a different product. According to Munn and Palmquist, the hedonist model assumes perfect competition and perfect information on a good or service. While Rosen provides a theoretical basis for the relationship between the price of a consumer goods and the characteristics contained in the goods.

Economic valuation is one form of effort used to provide quantitative value to goods and services produced by natural resources and environment both on market value (market value) and non market value (non market value) (Fauzi, 2006). Economic assessment in the context of the environment is about measuring the preferences of the community for a good environment compared to a bad environment (Puswanhari, 2003).

According to Barbier (1997) in Irmadi (2004), there are three types of approaches to the assessment of a natural ecosystem namely impact analysis, partial analysis and total valuation. The impact analysis approach is carried out when the ecosystem economic value is seen from the impacts that may arise as a result of certain activities, for example due to coastal reclamation of coastal ecosystems. The partial analysis approach is done by defining two or more alternative ecosystem utilization options. Meanwhile, the total valuation approach is conducted to estimate the total economic contribution of a particular ecosystem to the community. One of the challenges faced by policymakers is how to appraise a natural resource comprehensively. Assessment is not only about the market value of goods generated from a resource, but also the services generated by those resources. One way to conduct an economic valuation is to calculate the Total Economic Value (NET).

Total Economic Value is the economic values contained in a natural resource, both useful and functional values that must be taken into account in formulating management policies so that allocations and alternative uses can be determined correctly and on the target. Total Economic Value (NET) can be broken down into several components. As an example illustration in the context of determining alternative land use from coral reef ecosystem. Under a cost-benefit law, the decision to develop a coral reef ecosystem can be justified if the net benefits of the ecosystem development outweigh the net benefits of conservation. This NET can also be interpreted as NET from changes in the quality of the environment (Irmadi, 2004).

## DATA AND ESTIMATION METHOD

Primary data in this study comes from questionnaires and interview to visitors Tourism Object Pahawang Island and other parties concerned directly in this study. The population in this research is the visitors of Pahawang Island in Pesawaran Regency which is estimated to average 700 visitors in one week (Darma Wisata Pahawang Group, 2016). The sampling method used in this research is quoted accidental sampling, which is a sampling method done arbitrarily (addressed to anyone found in the location) but limited in number. Based on the above mentioned, the respondent criteria in this research are tourism object of Pahawang Island whether male or female, minimum age 17 years old, able to communicate well, willing to be interviewed, and can provide information according to data requirement in this research. By using the slovin formula on the above calculation obtained the number of samples of visitors Pahawang Island attractions as many as 87 samples.

The analysis used in this research is method using OLS (Ordinary Least Square) method. To know the effect of free variable to dependent variable used Ordinary Least Square (OLS) method.

Specification model used are:

$$\text{Ln}Y = \beta_0 + \text{Ln}\beta_1 X_1 + \text{Ln}\beta_2 X_2 + \text{Ln}\beta_3 X_3 + \text{Ln}\beta_4 X_4 + \text{Ln}\beta_5 X_5 + \varepsilon_t$$

Information

- Ln : natural logarithm
- Y : visitor request
- $\beta_0$  : constants
- $X_1$  : revenue
- $X_2$  : the beauty value of coral reefs
- $X_3$  : transportation facilities
- $X_4$  : center for souvenirs and souvenirs
- $X_5$  : means of lodging
- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  : regression coefficient
- $\varepsilon_t$  : standard error

Assessing the Economic Value of Coral Reefs in Pahawang Island Tourism Object  
Total economic value is the values contained in a natural resource both use value and functional value (Djijiono, 2002). The total economic value can be written in the mathematical equation as follows:

$$\text{TEV} = (\text{DUV} + \text{IUV} + \text{OV}) + (\text{XV} + \text{VB})$$

## Information

- TEV : Total Economic Value  
DUV : Direct Use Value  
IUV : Indirect Use Value  
OV : Option Value  
XV : Exsistence Value  
VB : Beques Value

## EMPERICAL RESULT

Based on the estimation result, the following equation is obtained:

$$\text{LnY} = 0.162842646224 * \text{LnX}_1 + 0.115766321887 * \text{LnX}_2 + 0.0970556588279 * \text{LnX}_3 + 0.405756329253 * \text{LnX}_4 + 0.139784380558 * \text{LnX}_5 - 0.708812072612$$

$$R = 0,524858$$

$$F\text{-statistic} = 17,89507$$

The result of the parameter significance test shows that income has a significant influence. The value of earnings regression coefficient ( $X_1$ ) of 0,162843 with positive value indicates that any increase in income of 1 rupiah will affect a person in allocating his income for travel, this causes the increasing demand for tourism Pahawang Island. Increased revenue will affect someone in determining the choice for travel. Increased revenue will increase the allocation of funds in the needs of someone including travel needs. These results show that visitor revenue has a positive and significant impact on visitor demand. The results of this study in accordance with research conducted by Nugraha (2015) that income has a positive and significant impact on visitor demand.

The value of regression coefficient of coral reef value ( $X_2$ ) of 0,115766 which has positive value indicates that the value of coral reef beauty that increase will cause the increasing demand of visitors Pahawang Island attractions. This shows that the value of the beauty of coral reefs has a positive and significant impact on visitor demand. The results of this study in accordance with research conducted by Nugraha (2015) that the value of the beauty of tourism attribute positive and significant impact on visitor demand. The value of coral reefs found in Pahawang Island is the main attraction for tourists visiting. Because in Pahwang Island tourists and see underwater scenery colorful with a depth of less than 3 meters, the depth is more shallow than coral reefs in other attractions. Therefore, the coral reefs on Pahawang Island are maintained and conserved by surrounding communities. Coral reefs are planted and not sold in large quantities, then the number is growing and diverse. Conservation of coral reefs will beautify the underwater scenery that can add to the satisfaction of tourists so that tourists have the desire to visit again.



The value of the positive centralized regression coefficient of souvenirs and souvenirs ( $X_4$ ) of 0,405756 indicates that the increasing quality and quantity of the souvenir center and the souvenir will cause the increasing demand of visitors to Pahawang Island. This shows that the center of souvenirs and souvenirs have a positive and significant impact on visitor demand. The results of this study in accordance with research conducted by Nugraha (2015) that the center of souvenirs and souvenirs have a positive and significant impact on visitor demand. The existence of the center of souvenirs and souvenirs around Pahawang Island tourism objects as well as a means to market the results of Micro Small Medium Enterprises (SMEs) in the local area, to be better known to the wider community. Currently, souvenirs and souvenirs are available around Pahawang Island attractions are merchandise such as hats, t-shirts and other accessories. The most popular merchandise is T-shirts bearing the island of Pahawang, no souvenirs and souvenirs typical Pahawang Island food. Therefore, it is necessary to train the surrounding community to make handicrafts related to tourism such as handicrafts from shells and so on as well as the expertise of processing seafood such as seaweed, fish, squid, shrimp, and other marine products in order to increase income local communities.

The result of the parameter significance test shows that the lodging facilities have a significant influence. The value of lodging regression coefficient ( $X_5$ ) of 0,139784 which has positive value indicates that the increasing quality of lodging facilities will lead to increased demand for visitors on the island of Pahawang. This shows that the lodging facilities have a positive and significant impact on visitor demand. The results of this study in accordance with research conducted by Nugraha (2015) that lodging facilities have a positive and significant impact on visitor demand. The lodging facilities located on Pahawang Island currently have 50 villas / cottages and 100 homestays (which are local residents). The most famous is a villa owned by a French citizen known as Mr.Jo on Pulau Pahawang Kecil and Kudus villa in Bedah Pahawang Besar area. The facilities of existing lodging facilities are now sufficient to accommodate tourists visiting, but the lodging facilities have not offered the desired facilities by visitors. Tourists feel less comfortable with the facilities of lodging facilities owned by local residents (homestay), such as poor condition of the toilet, slightly dim lights, and the house is also inhabited by the owner. While the lodging facilities villa / 'cottage condition less well maintained. Managers should be able to maintain and maintain existing lodging facilities, cooperation with outsiders is also needed to improve the quality of lodging facilities for the better.

Total Economic Value (TEV) From the calculation results obtained from the estimated economic value of coral reefs in Pahawang Island attractions amounting to Rp3.719.124.609,00 Coral reefs have supported the lives of fishermen subsystems around Pahawang Island attractions. In addition, coral reefs are also protective against the ocean waves, so that coastal areas, agriculture, and residential populations are not

easily damaged by sea waves. Similarly coral reef is a place of recreation for divers and other marine tourism. In addition, with the biodiversity of coral reefs will attract the attention of scientists, students, and pharmaceutical companies, and so forth. With the benefits of coral reefs as mentioned above, it is certain that the value will continue to increase. However, in case of damage to coral reefs in Pahawang Island attractions will result in losses of Rp3.719.124.609,00 The damage can occur due to various human activities, namely fishing with poison (patas), the use of explosives (bombs) in fishing, coral reef for housing and building materials, beach retreats and pollution as a result of deforestation, industrial erosion and exhaust, and overfishing.

## CONCLUSSION

Income, the value of the beauty of coral reefs, souvenir centers and souvenirs and lodging facilities have a positive and significant impact on visitor demand. While the transportation means have positive and not significant effect to visitor demand. The economic value of coral reefs in 2016 in the attractions of Pahawang Island is Rp3.719.124.609,00.

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