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Determinants of sustainable small islands tourism management: Case study of Pahawang Island, Indonesia

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Abstract. High demand of tourism from those who look for new experiences has affected the development of new tourist destinations in various regions, including marine tourism and the small islands. Furthermore on the small islands, they offer high biodiversity, biophysical uniqueness, as well as the local wisdom and cultural distinctiveness of the community, which can be potential drivers of tourism development. In contrast, the potential of these small islands is still not optimally utilized to promote the welfare of the villagers and to attract the tourist to visit. This research was conducted by collecting primary data derived from observations, in-depth interviews with tourism stakeholders, as well as tourist perceptions in Pahawang Island Village, Lampung Province, Indonesia. The result showed that the high weight value of variable tourist attraction (3,795), low prices (3,733), and tourism Image (3,730) show no direct impact on improving community welfare in Pahawang Island Village. On the contrary, the benefits of Pahawang Island tourism significantly affect the residents of other village communities in Ketapang Port, Lampung. The low variable value of Pahawang Island tourism Amenities (2,904), such as the availability of telecommunications networks, banking services, health facilities and electricity networks. Therefore, it is concluded that the improvement of tourism amenities are suggested to enhance the benefits of tourism towards the Pahawang Island villagers.

1. Introduction

Pahawang Island is one of the islands which is the leading marine tourism destination in Pesawaran District, Lampung Province. Pahawang Island tourism is also nominated as Most Popular Hidden Paradise in Anugerah Pesona Indonesia 2016. The main attraction of tourism on Pahawang Island is the underwater natural charm with the beauty of the soft coral clusters and other marine biodiversity. In addition to its natural beauty, the development of Pahawang Island's tourist attraction is also carried out by making artificial gardens under the sea and sinking various photo spot accessories to the sea floor. This combination of natural and artificial attraction aims to increase tourist visits to Pahawang Island, which has an impact on improving welfare and expanding employment opportunities of Pahawang Island villagers.

Based on Lampung Provincial Regulation No. 6 of 2012 regarding Regional Tourism Development Master Plan (RIPPDA) Lampung, the management of Pahawang Island tourism is sustainable, taking into account the environmental dimension, economic dimension and socio-cultural dimensions. The environmental dimension is part of an effort to use, protect and manage the natural environment and its ecosystem in a sustainable manner by taking into account the environmental carrying capacity for the

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benefit of the community and future generations. The economic dimension in tourism management is part of the efforts to increase competitiveness and to simultaneously increase regional income. Meanwhile, the social dimension of culture in tourism management is an approach that attempts to preserve the whole cultural values of local communities, conserve the nature, preserve the environment and foster a sense of national pride, in order to anticipate the effects of global culture against the culture of the nation.

Although it is set in the tourism management of RIPPDA Lampung province, still there are many tourism management activities that are not in accordance with the regional regulation. Tourism activity does not pay much attention the environmental dimension that threatens the sustainability for future generations, such as the increasing degradation of the diversity of marine life and extent of coral reefs and mangrove ecosystems. In addition, tourism activities do not provide optimal benefits for improving the welfare of Pahawang villagers. This indicates a mismanagement of tourism activities on Pahawang Island. Therefore, this study aims to identify the determinants of tourism management on Pahawang Island based on tourist perspectives and tourism stakeholders.

2. Material and Methods

2.1. Study area

Pahawang Island (Fig. 1) is located in Punduh Piddada Subdistrict, Pesawaran District, Lampung Province, Indonesia and is located at coordinates 5º 40 '28,560' latitude and 105º 13 '11,568' east longitude. Pahawang Island is a cluster of islands divided into two regions, namely Pahawang Besar and Pahawang Kecil. With a total area of 1,084 hectares and is inhabited by about 1,533 people, Pahawang Island is a coastal area consisting of sea, beach, swamp, land and hilly areas, and includes parts of small islands in the Lampung Bay region.



Figure 1. The location of the study area, Pahawang Island.

2.2. Data source

The type of data used in this study is primary data. Data were obtained through direct observation and in-depth interviews with Pahawang Island tourists, as well as several key informants consisting of village officials, Pokdarwis, Community Leaders, and tourism business actor. Interviews were conducted by using a questionnaire and a list of questions that had been developed previously. This research involved 100 tourists and 10 key informants as respondents.

2.3. Methods

In the tourism sector, the most decisive thing in the sustainability of tourism management is the tourists. Therefore, it is important to analyze their perceptions and satisfaction levels towards the tourist activity.

The perception analysis of tourism in this study uses a Likert scale to have a better understanding on how the respondents respond to the questions related to Pahawang Island tourism objects. The scale for each question indicator is in the range of 1 to 5, in which 1 is strongly disagree and 5 is strongly agree. The variables measured in the research questionnaire included the attraction, amenities, accessibility, tourism image, tourism human resource, and tourism price/cost variables. Statistical data obtained from the questionnaires were processed using Microsoft Excel.

3. Results and Discussion

Overall, based on the result of tha data analysis, it is suggested that Pahawang Island tourist destinations are good, with a weighted average value of 3,476. This point includes the attractions, amenities, accessibility, image, human resources, and tourism prices (Fig. 2). Tourist attractions variables are the main pulling factors for tourist visits to Pahawang Island, which is indicated by the highest weight value from the aspect of tourist perception (3,795). Moreover, the variable price suitability (3,733) and the tourism image variable (3,730) are also the main pulling factors for tourist visits to Pahawang Island. On the other hand, the tourism amenities variable (2,904) has the lowest weight value in the perception of Pahawang Island tourists.

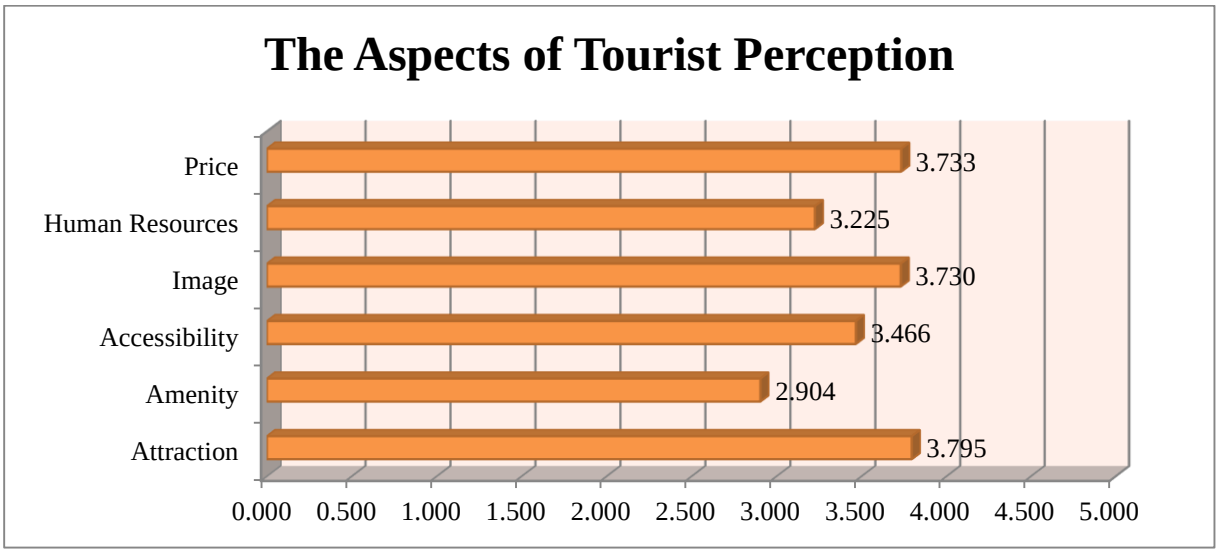


Figure 2. The Aspect of Pahawang Island Tourist Perception.

Pahawang island has a variety of tourist attractions that could attract tourists to visit. Based on the perception of tourists (Fig. 3), the quality of the natural beauty of the underwater coral reefs (4.160) which is supported by the underwater visibility (4.130) is the main attraction of Pahawang Island tourism. In addition, the qualities of the beachfront scenery with white sand (4,060), the biodiversity found on Pahawang Island (3,990), as well as the diversity of underwater photo spots (3,920) also attract tourists to come to visit Pahawang Island.

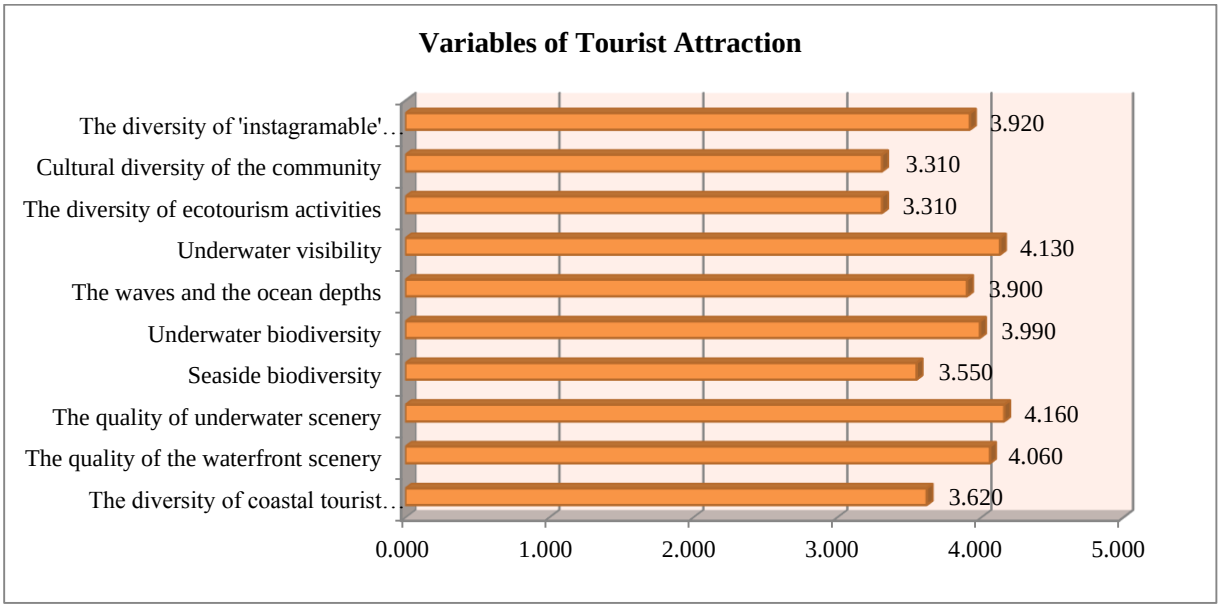


Figure 3. Variables of Tourist Attraction.

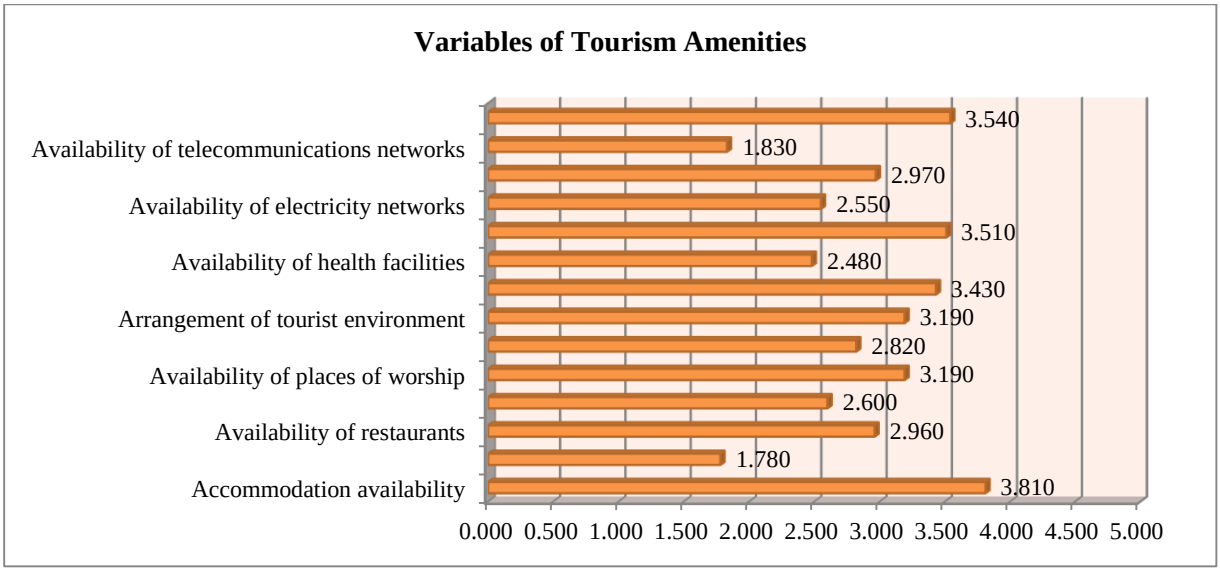


Figure 4. Variables of Tourism Amenities.

Although Pahawang Island has a very good tourist attraction, but the availability of infrastructure and supporting facilities Pahawang Island tourism is still very weak. It is shown on the low value of tourism amenities weighting variables (2.904) in the Pahawang Island tourist perception survey (Fig. 4). The absence of banking facilities on Pahawang Island (1,780) is strongly complained by tourists, because the closest banking services (in the form of BRIlink) are located at Ketapang Port, the port to Pahawang Island. Problems of telecommunications networks availability (1,830) on the island Pahawang is also complained by tourists. Furthermore, the problem of lack of health facilities (2,480) and the availability of electricity network (2.550) also has a very low weight, as perceived by the respondents.

The variable of accessibility of tourism to Pahawang Island (Fig. 5) obtains a fairly good weight value based on tourist perception (3,466). This is because Pahawang Island is not far from the capital of Lampung Province, Bandar Lampung. Various indicators of accessibility, both availability of transportation to tourist sites, quality of roads and docks, time and distance to tourist sites, transportation

to supporting tourist attractions, and availability of information to tourist sites, show a fairly good weighting based on tourist perception.

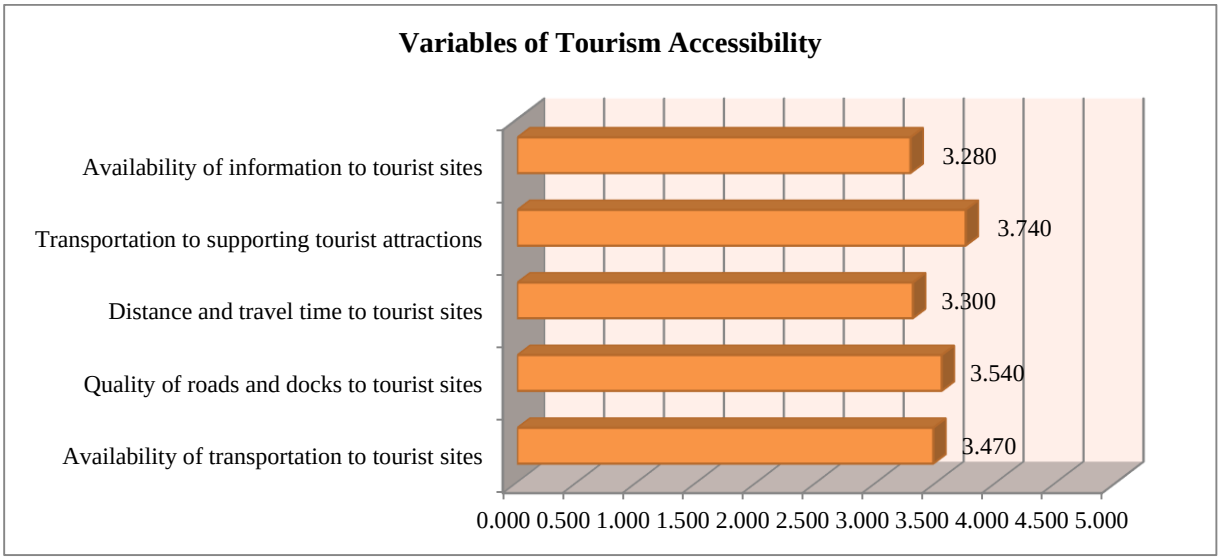


Figure 5. Variables of Tourism Accessibility.

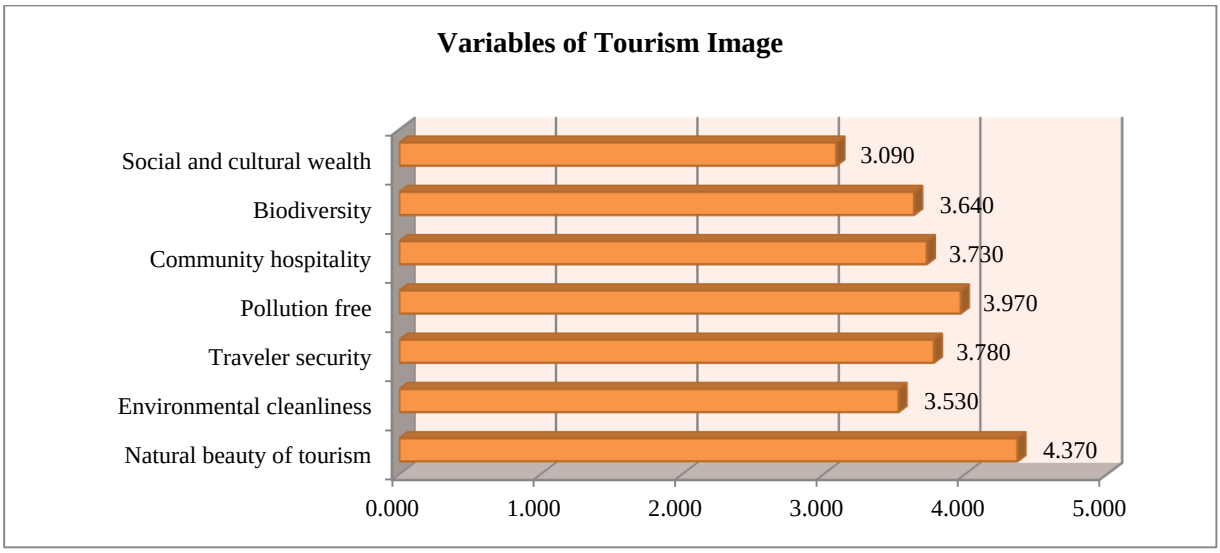


Figure 6. Variables of Tourism Image.

The image of Pahawang Island tourist attraction (Fig. 6) tends to be good according to tourist perception (3,730). The natural beauty of Pahawang Island has the highest weight value (4,370) on the Pahawang Island tourism image variable. Another image of Pahawang Island tourism that is well imaged according to tourists' perception is pollution free (3,970), tourist security (3,780), community hospitality (3,730), and biodiversity of Pahawang Island (3,640).

The human resource quality (Fig. 7) is quite good based on tourist perception (3,225). Human resource hospitality (3,440), response to tourist complaints (3,350), as well as the adequacy of human resources (3,340) are the main factors in the Pahawang Island tourism human resource variable. Meanwhile, foreign language mastery (2,730) is the weakest factor in the tourism human resource variable. It may potentially be an obstacle in providing services to foreign tourists.

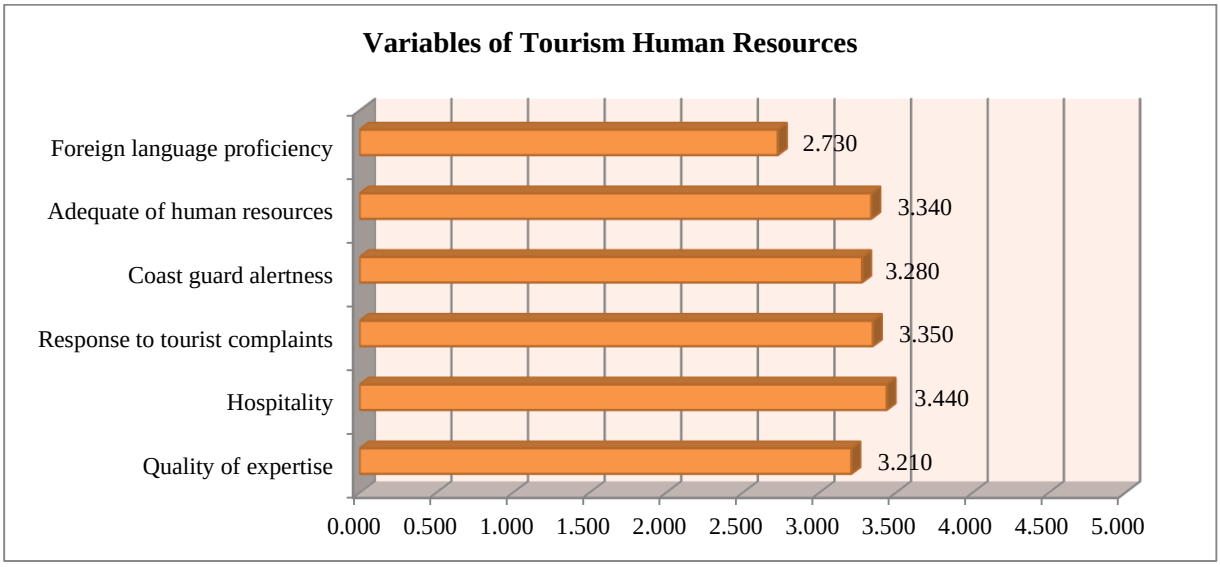


Figure 7. Variables of Tourism Human Resources.

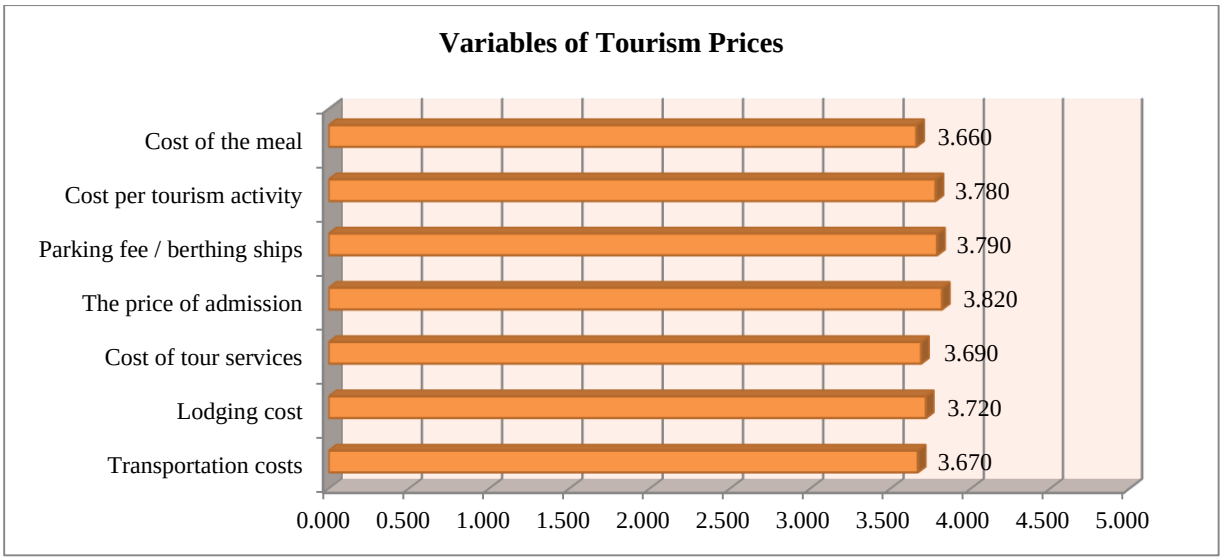


Figure 8. Variables of Tourism Prices.

The last variable in the aspect of tourist perception is the tourism price variable (Fig. 8). Based on the perception of Pahawang Island tourists, Pahawang Island tourism costs/prices is relatively cheap (3,733). This fact may lead to a competitive advantage to attract tourists to visit Pahawang Island. Overall variable price/cost of travel cost is perceived well by tourists. This includes the price of admission (3,820), the cost of parking/berthing vessels (3,790), the cost per tourist activities (3,780), accommodation expenses (3,720), and the cost of services of tour (3.690), transportation costs (3,670), and meal costs (3,660).

Based on the observation results on tourism activities on Pahawang Island, the tourism sector has become the main livelihood for the majority of Pahawang Island villagers. The economic activities carried out by Pulau Pahawang villagers include renting houses as homestays for tourists, renting out MCK facilities, selling food in food stalls and catering, renting snorkelling equipment, and managing diving spots (Fig. 9). In addition, Pahawang Island Village is also serious in preparing for supporting tourism infrastructure, such as building the road using paving blocks; build a gate and places of worship, solar cell for supplying electric energy, as well as garbage carts for environmental hygiene (Fig. 10).



Figure 9. Pahawang Village Economic Activity.



Figure 10. Pahawang Village Infrastructures.



Figure 11. Negative Tourist Activity.

Table 1. Tourism Management Issues of Pahawang Island.

No.	Environmental Dimensions	Economic Dimensions	Socio-Cultural Dimensions
1.	Pahawang Island tourism activities have resulted in reduced destruction of marine natural resources, both using poisons and explosives.	Increased welfare of villagers through tourism activities (homestays, food stalls, diving equipment rentals, diving spots).	Changes in people's livelihoods from fishermen to tourism.
2.	Increased public awareness of environmental hygiene and sanitation.	Not all hamlets in Pahawang village feel the benefits of tourism because of the limited access, such as the Suak Buah and Kalangan Hamlets	Increased community participation in the conservation of mangrove ecosystems and coral reefs.
3.	Increased public awareness for environmental rehabilitation, such as transplanting coral reefs and mangrove rehabilitation.	One Day Trip tourism activities does not provide benefits to the people of Pahawang Island.	Improvement of Pahawang Island Village institutions related to tourism, such as BUMDES, Pokdarwis, BPDPM.
4.	No legal regulations and intensive supervision related to tourist activities that may cause a damage towards the environment (such as feeding fish, touching coral reefs and other marine biota, dumping garbage in the sea)	Pahawang Island tourism economic activities are more dominated by people outside Pahawang Island, such as Ketapang Pier (boat rental, guide services, travel tours, souvenir shops, homestay with better facilities, food stalls, vehicle parking).	The influence of foreign cultures Pahawang Island brought by tourists, such as clothing worn skimpy travelers.
5.	There is no accurate data regarding the number of tourists to set a maximum limit for tourist visits so as not to exceed the carrying capacity of the environment.	There are typical products of Pahawang Island, such as mangrove dodol, mangrove juice, and mangrove chips. However, it cannot yet be widely marketed because of the traditional process	Pahawang Festival to preserve local culture and promote Pahawang Island tourism.
6.	Artificial tourist attractions (such as the sinking of the ATM, bicycles, motorcycles, tricycles) is potentially damaging the environment.	Infrastructure facilities in Pahawang Island, such as electricity networks and telecommunications networks, are still very limited.	Women empowerment through tourism activities (catering services, food stalls).

The observation results also found that there are some tourist activities that damage the environment and thus potentially affect the sustainability of tourism on the Pahawang Island. These activities include throwing plastic waste into the sea, feeding fish with bread or other human food, stepping on or touching the reef, using fin to snorkel in shallow sea (depth less than 3 meters), and taking marine biota from the sea floor, such as starfish (Fig. 11).

Researcher also conducted some in-depth interviews with stakeholders of tourism on Pahawang Island. The interviews concluded that there are several issues related to Pahawang Island tourism management. These issues are divided into three dimensions: the economic dimension, the dimension of the environment, as well as the socio-cultural dimension, which is outlined in Table 1.

4. Conclusion

Based on the perception of the respondents, Pahawang Island tourism has a very good tourist attraction, mainly because of its natural beauty and underwater visibility and the natural beauty of the beaches. Variable tourism prices are also considered cheap. Both of these variables may potentially be a competitive advantage for tourism on Pahawang Island. On the other hand, the variables of human resources and tourism facilities show the lowest points for tourism management on Pahawang Island. Limited electricity and telecommunications networks, as well as banking facilities are the main problems of Pahawang Island tourism based on tourist perceptions. This causes the economic activities of Pahawang Island tourism to be more dominated by people outside Pahawang Island.

Small island tourism management efforts on an ongoing basis should consider the economic, environmental, and social culture. However, based on the results of observations of activities and in-depth interviews with tourism stakeholders, there are still tourism activities that are not environmentally sound. This is due to the absence of regulations regarding snorkelling ethics and lack of supervision in tourist activities. In addition, there is no accurate data on the number of tourists to set a maximum limit for tourist visits so as not to exceed the carrying capacity of the environment. Tourism management must pay attention to the maintenance of environmental quality, because in the tourism industry the selling value in tourism products is the environment. The higher quality of the environment makes the higher selling value of the tourism product.

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