

Tourism Activities and Its Impact on Environmental Sustainability in Coastal Areas

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Abstract. In Malaysia, the statistics in 2009 showed tourists' arrivals was over 23.6 million people in which their presence contributes to the economy. However, this sector generates both positive and negative impacts. This study was conducted to identify factors that encourage visitors to return and visitors' perception of the impact of tourism on environmental sustainability of coastal areas. The study was conducted at Pantai Cahaya Bulan (PCB) in Kota Bharu, Kelantan, Malaysia. A total of 40 visitors were selected as respondents in the survey and questionnaires were used as instruments. The results showed that tourism activities do have an impact on PCB. One the positive impact is tourism activity increases the local socio-economic whereas the negative impact, it affects on the environmental sustainability such as cleanliness of the beach.

Keywords: entrepreneurial activities, tourism activities, environmental impact, socio-economic

1. Introduction

Tourism is an activity which promises a profitable chain of economic opportunities to a country. It is the second largest sector which contributes to the Gross Domestic Product (GDP) of Malaysia. Thus, it is not surprising that tourism is the main target industry that was given importance in the Eight Malaysia Plan (8MP) to Tenth Malaysia Plan (10MP). Planning and development of tourism activities should always be sensitive to global tourism demand, while at the same time take into consideration to create opportunities for productive economic.

According to [10], tourism is defined as temporary movement of people to destination outside of the workplace and the usual place of residence, the activities that they do while staying at the destination and the facilities provided to meet their needs. Population growth and development of new recreational and tourism areas have shifted the focus of the society towards the coastal areas and its environment. Coastal areas are began to be explored and developed, for the purpose of tourism, fisheries, aquaculture and industrial. However, with these rapid developments, the coastal areas have received a direct effect, such as coastal erosion, pollution and habitat destruction.

2. Problem Statement

Development of a tourism area has created a demand for facilities and services, including water, electricity, telecommunications, accommodation, transportation, retail business, support facilities, provision of sewerage and solid waste disposal. To meet these demands a lot of land had to be sacrificed. Infrastructure development involves uncontrolled land exploration, thus causes disruption to the ecology, such as destruction of habitat for flora and fauna, water pollution, air pollution and changes in soil nutrients. Uncontrolled development can destroy areas which are rich in biodiversity [3].

Ref. [3] adds that if planning and development of tourism areas and tourism activities are not planned properly and controlled carefully, it can cause a decline in the quality of the environment, such as deterioration in the quality of water, air, noise and natural resources. A study by [1] on coastal zone

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management of Langkawi Island found that lack of organization of development of coastal areas has resulted in part of the island's coastline erosion, which is quite serious, especially in Kuala Teriang.

Due to the increase in population and the increasing number of tourist arrivals, as well rapid tourism development activities, all these have impacted the environmental sustainability, caused sea water pollution, coastal erosion and deposition, which would eventually require a lot of expenses for the collection and disposal of solid waste. Ref. [2] found that the environmental impact caused by tourism in protected areas and non-organized recreation activities, includes wildlife disturbance. Both of these elements cannot be separated because of a relationship between one another, in which, if combined, serves as a medium to offer people the opportunity to appreciate the priceless natural heritage. But human greed for exploration and manipulation in the name of tourism, indirectly threaten the harmony and tranquility of the community of nature.

3. Literature Review

According to [3], the entry of large number of tourists to nature areas could damage the natural resources in the areas. The presence of tourists in an area of tourism, create demand for infrastructure such as water, electricity, telecommunications, accommodation, and so on. To meet these demands, a lot of land have to be sacrificed. Constructions of these facilities involve uncontrolled exploration of land, resulting in ecological disruption, such as the destruction of flora and fauna habitats, water pollution and changes in soil nutrients.

As stated by [3], unplanned development of tourist areas contributes to degradation in environmental quality such as deterioration of water quality, air, noise and damage to natural sources. Air pollution is caused by exploration of land, motor vehicles and open burning. It consists of fumes, dust and poisonous gases, which affects the health of tourists and locals, as well as flora and fauna in the long run. Water pollution occurs from improper treatment of waste disposal directly into the drainage system. According to [11] water pollution in coastal waters are due to pollution in rivers through agricultural activities, industrial and domestic sewage from human activities. Many coastal areas in Malaysia, such as Sabak Beach, Bisikan Bayu Beach, Batu Buruk Beach Bad, Bagan Lalang Beach and Port Dickson are contaminated with the problem of domestic sewage and waste disposal. This condition causes discomfort to the visitors and the local community.

However, development of tourists areas are essential in attracting tourists, therefore, development in these areas are unavoidable. According to [8], good and systematic transportation links are factors attracting tourists to a destination, factors of time and their knowledge about places. Besides that, a study by [7], on the selection of tourist destination, they are based on beautiful beaches, easy and convenient for a picnic and a stroll, availabilities of facilities such as accommodation, food stalls, recreational activities, public toilets, shower and dressing rooms and parking. All these indicates that besides the nature itself, other supporting factors such as facilities, accommodation and transportation are essential in attracting tourists.

Thus, the issue that can be observed here is, how can the development be balanced and what is the perception of tourists about the impact of tourism towards the environment. It is essential to find these information from tourists, as they are the users of facilities and infrastructure provided in such areas, and besides that, they are also demand for the tourist destination to be remain as natural as it can be. Conflicts arise in the reasons tourists choose a tourist destination, either the availability of infrastructure and facilities or the perseverance of the nature.

4. Purpose of Study

This aim of the study is to identify factors that encourage visitors to visit PCB and visitors' perception of the impact of tourism on environmental sustainability of coastal areas. To achieve the purpose of the study, two objectives of the study was constructed;

- To identify the factors which encourages visitors to the Pantai Cahaya Bulan (PCB).
- To identify visitors' perceptions of the impact of tourism towards the environment in the coastal areas.

5. Methodology

This study is a quantitative study using survey method and questionnaire as instrument to collect data. The use of questionnaires are popular among researchers, especially when it is intended to measure understanding of behaviors such as attitudes, perceptions, perceptions, emotions, feelings, interests, beliefs, values and satisfaction.

5.1. Samples

Visitors to PCB coast varies each year and no amounts of certain number of visitors are recorded. However, for the purpose of this study, a total of 40 visitors were chosen as samples, through convenience sampling method. As to unavailability of data on the population, researcher has quoted [4] in determining the sample size, whereby the sample size of 30 and above should be encouraged due to the assumption of normal distribution that is usually met when the sample size is more than 30. Therefore 40 samples were selected as respondents, and it fits the statement given by [4].

5.2. Instrument

Instrument used in this study is questionnaire. It was adapted and modified from the research instrument of [5], [1], which is divided into three parts. Part A obtains information on respondents’ profile. Part B is to identify the factors which leads visitors to visit, which consists of these three aspects, safety and comfort, reasonable cost, and, cleanliness / facilities availability. Part C is to identify the perceptions of visitors to the current physical condition of PCB.

5.3. Data Analysis

This study uses descriptive statistics in interpreting respondents’ demographic and personal background information, as well as to identify factors which lead respondents to visit PCB. Items were constructed in the form of statements, measured by using a five point Likert scale, ranged from 1 to 5, as adapted from [6], shown in Table 1.

Table 1: Interpretation of mean score for factors leading towards tourist visiting PCB

Mean Score	Level
1.000 - 1.804	Very Low
1.805 - 2.604	Low
2.605 - 3.404	Average
3.405 - 4.204	High
4.205 - 5.000	Very High

Source: Sherri (2003)

6. Findings and Discussions

Descriptive analysis in the form of frequency and percentage were used to describe the profile of the respondents. Table 6.1 shows the number of respondents which were 40, consisting of 17 males (42.5%) and 23 females (57.5%). Of the total visitors who visited PCB, Malays were the majority (82.5%), while Indians comprised 7.5 percent and 10 percent were Chinese.

Generally, PCB can be categorized as a tourist destination for middle-income group because 15 respondents (37.5%) earned less than RM 1,500, 13 (32.5%) earned between RM 1,501 to RM 2,500, six respondents (15.0%) earned between RM 2,501 to RM 5,000 and only three (7.5%) were earning more than RM 5,001. The majority of visitors, 21 respondents (52.5%) came to PCB with the intention of vacation and holiday, 14 (35.0%) came to rest, one person (2.5%) to enjoy local food known as “colek” and four (10.0%), came to attend meetings and official work.

Table 6.1 Visitors’ Profile

Description	Frequency	%	
Sex	Male	17	42.5
	Female	23	57.5
Race	Malay	33	82.5
	Chinese	4	10.0
	Indian	3	7.5

Income	Less than RM1500	15	37.5
	RM 1501 to RM 2500	13	32.5
	RM2501 to RM 5000	6	15.0
	RM 5001 and above	3	7.5
Purpose	Vacation/tourism	21	52.5
	Rest/relaxing	14	35.0
	Trying local food “Colek”	1	2.5
	Work/meeting	4	10.0

6.1. Factors which Attracts Tourists to PCB

The first objective of this study is to identify the factors which encourage visitors to visit the PCB. Table 6.2 shows the mean score and standard deviation of the respondents’ perception of the factors that has led them to PCB. Each mean score is located between 3.37 to 3.50. This study shows that overall visitors perception to all the factors are at high level with an average mean score and standard deviation of $m = 3.46$, $s.d = 0.52$. Based on this mean value, the interpretation that can be drawn here is that visitors consider all the three factors of safety and comfort factors, reasonable cost factor as well as availability of facilities, are factors that drive visitors to PCB.

The findings of the study found that factors of safety and comfort as well as cost are major factors which leads visitors choose PCB as a holiday destination, with the highest mean score of 3.50 and a standard deviation of 0.58. Majority of visitors come to the PCB for a holiday. Safety and comfort factors include a safe beach environment, which provides good accommodations and services, complete and comfortable as well as having wide selection of food and souvenirs, made of this factor as the main factor for visitors to visit PCB. The findings are in consistent with a study by [9], which had similar findings, which is major factor for tourist to visit Pangkor Island is for comfort, guaranteed security and reasonable vacation cost.

The second factor which encourages tourists to visit PCB is due to the facilities provided, such as garbage collection, public toilets, prayers room, recreation facilities and playgrounds. The findings are in consistent with findings from studies by [7] and [5], whereby their study also noted that the beauty and comfort of the beach, the facilities provided play an important role in attracting tourists to visit tourist destinations. However, it contradicts with the findings by [8] whom explained that the main factors of tourists to come to a certain tourist destination is because of good and systematic transport links, and the allocation of time as well their knowledge of the place they visit.

Table 6.2 Factors leading to tourists visits

Factors leading to visits	Mean	Standard Deviation	Rank
Safety and comfort	3.50	.580	1
Cost	3.50	.580	1
Facilities	3.37	.426	2
Overall Mean	3.46	.529	

6.2. Visitors’ Perception of the Impact of Tourism Towards Coastal Areas

The second objective of this study is to identify visitors’ perception of the impact of tourism towards the environment in the coastal areas. Table 6.3 shows the findings related to perceptions of the respondents on the impact of entrepreneurship activities to the environmental sustainability. Data obtained indicate that overall, tourism activities have a negative impact on environmental sustainability. This is evidenced by the average mean score obtained, $m = 3.48$ with standard deviation, $s.d. = 0.821$. Pollution caused by litter, rubbish or trash has the highest impact with the mean score of 4.13 and a standard deviation of 0.757, followed by water pollution, air pollution, and finally noise pollution. Studies have shown that all these attitude stems from travelers who like to throw rubbish such as plastics from food and drinks, even if rubbish bins have been provided.

Table 6.3 Populations’ perception on the impact of tourism activities towards the environment

Items	Mean	s.d	Rank
Rubbish/Trash Pollution	4.13	.757	1
Water Pollution	3.72	.933	2
Noise Pollution	2.98	.862	4
Air Pollution	3.07	.730	3
Overall Mean	3.48	.821	

According to [3], tourism activities and tourism development can lead to the generation of waste such as solid waste which consists of garbage and industrial, as well as liquid waste of domestic sewage and wastewater. Unmanaged waste disposal can create a dirty and foul smell, which damages the natural landscape. Ref. [9] states that Darwish Coast of the United Kingdom also experienced the same problem. Although this beach has become as a conservation for its natural resources such as flora and fauna, there are problems in coastal management such as garbage disposal that is not in order and damaged public properties. This occurs as a result of tourism activities.

As for water, air and noise pollution, they are associated with the development of tourist areas that are not well planned. According to [3], deterioration of water quality, air, noise are due to lack of control in the development of tourist centers.

7. Conclusion

Cahaya Bulan Beach (PCB) is a popular beach tourist destination in Malaysia. Visitors who visit PCB emphasized on the aspects of safety and comfort, reasonable cost and availability of facilities at the beach. In this regard, and infrastructure facilities provided there meet the needs of the visitors, but to remain consistent with the increasing number of tourists arrivals, continuous maintenance needs to be done to ensure that the facilities remain in perfect condition.

The rapid growth of tourism industry in PCB has contributed to economic growth through the generation of income for the population and increase employment opportunities. Residents have the opportunity to diversify their income by venturing into entrepreneur activities. However, the fast pace of the tourism industry in PCB has also contributed to environmental degradation such as erosion, sedimentation, pollution, garbage waste pollution, water pollution, noise and air pollution. Thus, to remain perfect and to be able to accommodate consistent increase of tourists, all parties must cooperate to protect and conserve the environment for the interest of the present and future generations.

8. References

- [1] Muhammad Najit Sukemi & Ahmad Amiruddin Hamid. Impak pengurusan zon pesisir pantai terhadap sektor pelancongan zon pesisir pantai terhadap sektor pelancongan di Pulau Langkawi. 32-45. Pembangunan, Penggunaan Dan Penilaian Sumber Alam: Kuala Terengganu, UMT, 2008.
- [2] Newsome, D. & S. A. Moore. Natural Area Tourism: Ecology, Impacts and Management. Canada, Cromwell Press, 2004.
- [3] Johan Affendi Ibrahim & Mohamad Zaki Ahmad. Penubuhan Geotaman Langkawi: Kesan Kepada Industri Pelancongan Langkawi. 2006.
- [4] Mohd. Majid Koting. *Research Statistic Method*. Kuala Lumpur: Dewan Bahasa dan Pustaka. 1990.
- [5] Nor Hidayah Binti Che Jamin @ Abdul Hamid. Port Dickson sebagai pantai pelancongan: ke arah pelancongan mampan. Research Project. Universiti Kebangsaan Malaysia, 2004.
- [6] Sherri, L. J. *Research Methods and Statistics: A Critical Thinking Approach*. USA: Thomson, 2003.
- [7] Haslina Che Hussin, Mohmadisa Hashim, Mohamad Suhaily Yusry Che Ngah, Mohd Hairry Ibrahim & Nasir Nayan. Pencemaran Marin Di Pantai Timur Malaysia: Persepsi Pengunjung Di Kawasan Pelancongan Pantai Cahaya Bulan, Batu Buruk dan Teluk Cempedak. 2006.
- [8] Lew, A. & McKercher, B. Modelling tourist movements : A local destination analysis. *Annals of Tourism Research*. 33:403-423, 2006.
- [9] Page, S. J. Brunt, P. Busby. G. & Connell, J. *Tourism: a modern synthesis*. 2001. London: Thomson Learning

- [10] Mathieson, A. & G. Wall. *Tourism Economic, Physical and Social Impacts*. London, Longman Group UK Limited, 1982.
- [11] Mohmadisa Hashim & Mohamad Suhaily Yusri Che Ngah. *Pembangunan Alam Sekitar di Malaysia*. 2010. Tanjung Malim : UPSI, 2010.