

**EVALUATION OF SNORKELLING SATISFACTION
LEVEL AT PULAU PAYAR MARINE PARK,
MALAYSIA**

NURBAIDURA BINTI SALIM

**UNIVERSITI SAINS MALAYSIA
2015**

**EVALUATION OF SNORKELLING
SATISFACTION LEVEL AT
PULAU PAYAR MARINE PARK, MALAYSIA**

by

NURBAIDURA BINTI SALIM

**Thesis submitted in fulfilment of the requirements
for the degree of
Master of Science**

SEPTEMBER 2015

ACKNOWLEDGEMENTS

With the blessings of Allah S.W.T, I finally be able to complete this research. Along the way, You have not forsaken me. Indeed, with You, all things are possible.

I would like to express my highest gratitude to my supervisor, Prof. Dr. Badaruddin Mohamed for his useful guidance and support. All your advice, assistance and fruitful suggestions were very helpful to completing this thesis. I also would like to thank my co-supervisor, Assoc. Prof. Dr. Anisah Lee Abdullah for your patience in guiding me and motivating me to complete this thesis.

Thank you to all my families for the supports and encouragement in completing the thesis. To all my friends, who shared relevant knowledge to improve this study, I thank all of you. May we become successful people in the future. Last but not least, I would like to thank the Ministry of Education, Malaysia under the Long Term Research Grant Scheme 2011 (Physical and Environmental Rural Tourism Capacity Framework) for funding the research and making this research possible. Thank you.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	ii
TABLE OF CONTENTS	iii
LIST OF TABLES	vi
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS	ix
ABSTRAK	x
ABSTRACT	xii
CHAPTER 1 INTRODUCTION	
1.1 Introduction	1
1.2 Research Background	6
1.3 Problem Statement	10
1.4 Research Objectives	13
1.5 Research Questions	13
1.6 Research Hypothesis	14
1.7 Significance of the Study	15
1.8 Scope of the Study	16
1.9 Brief Research Methodology	17
1.10 Background of the Study Area	19
1.11 Definition of Key Terms	29
1.12 Structure of the Thesis	31
1.13 Conclusion	33

CHAPTER 2 LITERATURE REVIEW

2.1	Introduction	34
2.2	Tourism Industry in Malaysia	34
2.3	Sports Tourism	38
2.4	Snorkelling as a Marine Sports Activity	45
2.5	Tourists' Satisfaction	53
2.6	Factors Influencing Snorkelling Satisfaction	56
2.7	The Influence of Socio-Demographic Characteristics on Snorkelling Satisfaction	62
2.8	Measuring Visitors' Satisfaction	67
2.9	Conclusion	79

CHAPTER 3 RESEARCH METHODOLOGY

3.1	Introduction	80
3.2	Research Process	80
3.3	Data Collection Technique	84
3.4	Research Instrument	86
3.5	Pilot Study	90
3.6	Data Validity	91
3.7	Sampling Size	92
3.8	Data Collection Procedure	94
3.9	Data Analysis	95
3.10	Conclusion	97

CHAPTER 4 RESULTS

4.1	Introduction	98
4.2	Response Rate	98
4.3	Profile of Snorkelers	100
4.4	Visitors' Satisfaction with Snorkelling Attributes	105
4.5	Comparative Analysis Between Local and Foreign Visitors	109
4.6	Influence of Socio-demographic Characteristics on Snorkelling Satisfaction	112
4.7	Post-snorkelling trip	119
4.8	Conclusion	129

CHAPTER 5 DISCUSSION & CONCLUSION

5.1	Introduction	126
5.2	Visitors' Characteristics	127
5.3	Addressing Research Questions	129
5.4	Theoretical Implications	137
5.5	Practical Implications	139
5.6	Limitations of the Study	141
5.7	Recommendations	143
5.8	Conclusion	145

REFERENCES	148
-------------------	-----

APPENDIX A	160
-------------------	-----

APPENDIX B	166
-------------------	-----

LIST OF TABLES

		Page
Table 1.1	Previous research related to Pulau Payar Marine Park	27
Table 2.1	Types of sports industry in Malaysia	41
Table 2.2	Types of marine recreational activities	43
Table 2.3	Differences between snorkelling and diving	45
Table 2.4	Number of visitor arrivals at four marine parks in Malaysia from 2010 to 2014	48
Table 2.5	Factors lead to overall satisfaction with reef experience at Great Barrier Reef, Australia	60
Table 2.6	Summary of previous research on satisfaction with marine experience	75
Table 3.1	Relation between research objectives, research questions and type of analysis to be used	82
Table 3.2	Questionnaire design	88
Table 3.3	Tourist arrivals to Pulau Payar Marine Park 2012	92
Table 3.4	Method used to locate crosshair in Importance-Satisfaction Grid Analysis (ISA)	96
Table 4.1	Profile of the respondents. N = 259	101
Table 4.2	Travelling pattern of the respondents	104
Table 4.3	Importance-Satisfaction Analysis (ISA) for snorkelling attributes	105
Table 4.4	Comparison of Importance-satisfaction analysis (ISA) for local and foreign visitors on snorkelling satisfaction attributes	109
Table 4.5	Mean satisfaction for different origin groups	112

Table 4.6	ANOVA test for difference between different origin groups and snorkelling satisfaction	113
Table 4.7	Mean satisfaction for level of education	114
Table 4.8	ANOVA test for difference between level of education and snorkelling satisfaction	114
Table 4.9	Mean satisfaction for age group	115
Table 4.10	ANOVA test for difference between visitors of different sge groups and snorkeling satisfaction	116
Table 4.11	T-test for difference in satisfaction between gender	116
Table 4.12	Mean satisfaction for number of visit to Pulau Payar Marine Park	117
Table 4.13	ANOVA test for difference between number of visits and snorkelling satisfaction	117
Table 4.14	Mean satisfaction for level of income	118
Table 4.15	ANOVA test for difference between income group and snorkelling satisfaction	118

LIST OF FIGURES

		Page
Figure 1.1	Top dive and snorkelling sites in Malaysia	4
Figure 1.2	Map of Pulau Payar (<i>not to scale</i>).	20
Figure 1.3	Facilities available at Pulau Payar Marine Park	23
Figure 1.4	Tourist arrivals to Pulau Payar Marine Park from 2000 to 2014	24
Figure 2.1	Tourist arrivals to Malaysia from year 2003 to 2014	35
Figure 2.2	Types of sports tourism	39
Figure 2.3	Estimated number of snorkelers to the Marine Parks in Peninsular Malaysia from 2004 to 2014	49
Figure 2.4	Importance-performance grid	69
Figure 2.5	Importance-satisfaction matrix	70
Figure 2.6	Range of impacts and asymmetry of an attribute's impact on customer satisfaction	71
Figure 2.7	Proposed theoretical framework	78
Figure 3.1	Research flow	83
Figure 4.1	Importance-satisfaction grid analysis of Pulau Payar Marine Park	108
Figure 4.2	Influence of socio-demographic characteristics on snorkelling satisfaction	125

LIST OF ABBREVIATIONS

ETP	Economic Transformation Program
PEMANDU	Performance Management and Delivery Unit
NKEA	National Key Economic Areas
MTTP	Malaysia Tourism Transformation Plan 2020
NPP	National Physical Plan
VMY	Visit Malaysia Year
NGOs	non-governmental organisations
GNI	Gross National Income
IPA	Importance-Performance Analysis
ISA	Importance-Satisfaction Analysis
NRE	Ministry of Natural Resources and Environment
TEV	total economic value
UNDP	United Nation Development Program
UNWTO	World Tourism Organisation

PENILAIAN TERHADAP TAHAP KEPUASAN SNORKELING DI TAMAN LAUT PULAU PAYAR, MALAYSIA

ABSTRAK

Sejak 10 tahun yang lalu, Taman Laut Malaysia telah menerima hampir 7.4 juta pelancong dari seluruh dunia. Peningkatan bilangan pelancong dan pertumbuhan pelancongan massa telah menyebabkan jumlah pelancong yang tidak terkawal, kadangkala melebihi tahap tampungan di kawasan Taman Laut. Oleh kerana akses yang mudah untuk ke Taman Laut dan kegagalan sistem pasaran dalam menyekat penggunaan mereka, kesesakan pengunjung di kawasan Taman Laut telah menyebabkan kemerosotan alam sekitar. Situasi seperti ini bukan sahaja memusnahkan terumbu karang, malah ia juga boleh mengurangkan kualiti pengalaman dan tahap kepuasan pelancong. Memandangkan snorkeling merupakan aktiviti utama pengunjung ke Taman Laut, kajian ini menilai tahap kepuasan pengunjung terhadap aktiviti snorkeling dengan memilih Taman Laut Pulau Payar sebagai kawasan kajian. Kajian ini juga menentukan bidang pengurusan yang memerlukan penambahbaikan di kawasan kajian. Selain itu, tahap kepuasan snorkeling juga dinilai dengan menganalisa hubungannya dengan karekteristik demografi (umur, jantina, pengalaman melancong, pendapatan, negara asal dan tahap pendidikan). Persampelan konvenien telah digunakan dan responden dipilih dalam kalangan pengunjung harian yang berkunjung ke Pulau Payar. Sampel saiz sebanyak 400 responden diperolehi dari data kedatangan pengunjung ke Taman Laut itu. Data diperolehi dengan menggunakan borang soal selidik berstruktur. Daripada 400 responden, hanya 259 responden yang berjaya melengkapkan borang soal selidik dan sah digunakan untuk menganalisis data. Keputusan borang soal selidik dianalisis

dengan menggunakan Analisis Kepentingan-Kepuasan (*Importance-Performance Analysis (ISA)*) dan Analisis Jurang (*Gap Analysis*) untuk kedua-dua tahap kepentingan dan kepuasan. Dapatan kajian ini mendapati 68.4% pengunjung agak berpuas hati dengan aktiviti snorkeling di kawasan kajian tetapi masih terdapat ruang untuk penambahbaikan untuk meningkatkan tahap kepuasan pelancong. Terdapat lima atribut yang memerlukan pengurusan dan penambahbaikan daripada Jabatan Taman Laut seperti kepelbagaian spesies karang berwarna-warni, kejernihan air laut, kualiti tandas awam dan kesesakan. Berdasarkan pengaruh ciri-ciri sosio-demografi terhadap tahap kepuasan pengunjung, hanya negara asal dan tahap pendidikan sahaja yang mempengaruhi tahap kepuasan pengunjung terhadap aktiviti snorkeling di kawasan kajian. Pengunjung tempatan lebih menekankan aspek keselamatan semasa aktiviti snorkeling manakala pengunjung asing lebih mementingkan kepelbagaian jenis ikan marin yang terdapat di Taman Laut. Cadangan penambahbaikan tandas awam di kawasan Taman Laut, penyediaan air bersih serta menghadkan bilangan pengunjung ke kawasan kajian diperkenalkan kepada pihak Jabatan Taman Laut bagi membantu mengekalkan kemampanan Taman Laut Pulau Payar. Dapatan kajian ini menyumbang kepada pengetahuan kajian pelbagai disiplin bidang pelancongan dan tahap kepuasan dalam konteks kawasan Taman Laut. Kajian ini dilihat dapat membantu Jabatan Taman Laut, kerajaan negeri dan pembekal perkhidmatan supaya memahami jangkaan dan perkhidmatan yang diperlukan pelawat di Taman Laut.

EVALUATION OF SNORKELLING SATISFACTION LEVEL AT PULAU PAYAR MARINE PARK, MALAYSIA

ABSTRACT

Marine Parks in Malaysia have received almost 7.4 million tourists from all over the world for the past ten years. Continuous growth in the number of tourists and mass tourism has resulted in an uncontrolled number of tourists, sometimes surpassing the carrying capacity of the site. Due to the open-access nature of marine parks and the failure of the market system in restricting their use, crowdedness tend to take place at the site, resulting in environmental degradation. Such a situation is not only damaging the coral environment, but may also reduce the quality of visitors' experience and satisfaction level. As snorkeling is the main activity engaged in while visiting the marine parks, this research evaluates the level of snorkelling satisfaction by examining Pulau Payar Marine Park as a case study. This study also considers areas of management which should be improved at the marine park. Also, snorkelling satisfaction was also examined by analysing its relationship with socio-demographic characteristics (age, gender, past travel experience, income, country of origin and education level). Convenience sampling was employed and respondents were selected among day-trip snorkelers visiting Pulau Payar. A sample size of 400 respondents was obtained from the data of tourist arrivals to the park. Data was collected using structured self-completion questionnaires. Of 400 respondents, only 259 respondents completed the questionnaires and valid to be used for data analysis. The results employed Importance-Satisfaction Analysis (ISA) and Gap analysis for both importance and satisfaction level. Findings of the study have revealed that 68.4% of visitors were somewhat satisfied with their snorkelling

activity in the study area but there is room for improvement to increase their satisfaction level. There are five attributes that require management and improvements from the Marine Park Department such as abundance of colourful coral species, underwater visibility, quality of toilet facilities and crowdedness. Examining the influence of socio-demographic characteristics on satisfaction, only origin and education level were found to be associated with snorkelling satisfaction in the study area. Local visitors are more concerned with safety during snorkelling activity while foreign visitors are more concerned with the variety of reef fishes at the Marine Park. Suggestions include improving public toilet facilities at the marine park, providing clean water, and limiting the number of visitors to the park are suggested to assist the Marine Park Department in sustaining Pulau Payar Marine Park. Findings of the study adds to the body of knowledge on multidisciplinary study of tourism and satisfaction level within the context of Marine Park areas. This study provides an insight to Marine Park authority, state government and service providers to understand the expectations and services needed at the Marine Park.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Like other developing countries, Malaysia is particularly rich with diverse natural attractions which become an asset to the country's tourism industry. In 2013, Malaysia was ranked as the 10th most visited country on the World Tourism Organisation (UNWTO)'s Tourism Highlights and 24th most competitive country globally (Schwab & Sala-i-Martin, 2013). Today, the business volume of tourism sector is equal to or more than that of oil exports, automobiles and food products. Prior to this, the Malaysian government established the Economic Transformation Program (ETP) as an initiative to transform Malaysia into a high income economy by 2020. Managed by Performance Management and Delivery Unit (PEMANDU), ETP is a comprehensive effort propelling Malaysia towards a high-income developed nation status. Under Malaysia's Economic Transformation Program (ETP), tourism has been identified as one of the 12 National Key Economic Areas (NKEA) that contributes to the nation's economic growth (Ali Khan, 2013). Despite various challenges faced by Malaysia, namely the recent aviation tragedies and security concerns in Sabah, the country continues to register growth in the number of tourist arrivals in 2014 with 27.43 million tourist arrivals. In addition, the nation

had set a target to receive 29.4 million arrivals with RM89 billion in receipts in 2015 during the Malaysia Year of Festivals 2015 (MYFEST2015) campaign recently (MOTAC Press Release, Oct 30, 2014).

Apart from other tourism attractions in Malaysia, sports tourism is also considered a driving force in developing the tourism industry. The Government has allocated RM1.4 million to promote sports tourism as another potential attraction to the country (PEMANDU, 2013). Sports tourism in Malaysia can be divided into hard-sports tourism, which includes international sporting events, while soft-sports tourism includes diving, snorkelling, hiking, skiing and so on. The Government, together with tourism players and non-governmental organisations (NGOs) is working hard to further develop tourism industry as a whole which includes sport tourism, ecotourism, MICE tourism, family fun and also cultural diversity. In addition, local governments and non-governmental organisations (NGOs) also play a vital role to promote regional tourism by improving tourist spots and publicise regional tourism information locally and abroad. The Malaysian government, through Ministry of Youth and Sports and Ministry of Tourism is working to globally promote the country as an international sports event's organiser. For example, the Asia Tourism Alliance (ATA) recently organised a '438km Enduride 2014 Sarawak' as an effort to make the state a sports tourism destination. Through these improvements and continuous efforts for sports tourism, Malaysia is looking forward to a gain of RM 5.02 million in Gross National Income (GNI) and over 8,000 job opportunities in the sports industry by 2020.

Like any other marine parks in neighbouring countries such as the Philippines, Indonesia and Thailand, Malaysia is indeed blessed with idyllic islands that shelter various marine lives and coral reefs. Marine Park is a protected area of sea zoned one or two nautical miles from the shore at the lowest tides (Department of Marine Park Malaysia, 2014). With a total of 53 marine parks including Sabah and Sarawak, marine parks in Malaysia are currently managed by Department of Marine Park under the Ministry of Natural Resources and Environment (NRE). Out of the total, 42 marine parks are located in the Peninsular Malaysia and have been established under federal legislation. Under the Fisheries Act 1985 (amended 1991), marine parks in Malaysia have been gazetted around island clusters in Pulau Payar (Kedah), Pulau Redang (Terengganu), Pulau Tioman (Pahang), Pulau Tinggi (Johor) also Labuan. Marine parks have significant socio-economic dimensions that support a wide range of tourism and recreational activities such as snorkelling, scuba diving, recreational boating, sailing, hiking, camping, guided interpretive walks and audio-visual programme at the marine park centres. The concept of marine protected areas is not new to Malaysia as the nation has committed itself into transforming 10 % of its marine areas into marine parks by 2020 (Department of Marine Park Malaysia, 2011). In addition, marine parks in Malaysia are developed as tourist destinations to boost Malaysia's economic growth. According to Fee Act 1951, Fee Order (Marine Park Malaysia) 2003 (Department of Marine Park Malaysia, 2014), each visitor to enter Marine Park needs to pay RM 5.00 conservation fee for adults and RM 2.00 for students, school children, senior citizens and retiree. In 2012, Marine Parks collected RM2,297,784 from the conservation fees. Collection from the fees is disbursed to the Marine Park Trust Fund for the management and maintenance of the Marine Parks' facilities.



Figure 1.1 Top dive and snorkelling sites in Malaysia.
 Source: <http://mide.com.my/>

Realising that natural resources may contribute to economic potential, Malaysian government also attempted promoting marine tourism activities such as snorkelling and diving during Malaysia Domestic Tourism Fair 2009. The lucrative and profit-making business derived from snorkelling has led the activity to be highly promoted among the tourists. Pulau Perhentian, Pulau Redang, Pulau Payar and Pulau Tioman are among the top snorkelling destinations among tourists visiting Malaysia (refer to Figure 1.1).

In United States, snorkelling is ranked the eighth most popular marine recreational activities (Pendleton & Rooke, 2006). Snorkelling and dive tourism not only generate value for local businesses, but also bring in more high-yield tourists and increased tourist expenditure (Jack, 2012). Snorkelling activity usually takes part in marine settings where people may enjoy the underwater sceneries and indirectly help them to appreciate the diversity of marine lives. It is the main

activity while visiting the Marine Park, and represent a large proportion of marine recreation users (Oliveira et al., 2011; Pendleton & Rooke, 2006). At the International Dive and Snorkel Market in Queensland, Australia, 68% of its visitors participated in a snorkelling activity while only 9% participated in a diving activity (Tourism Research Australia, 2007).

In Malaysia, snorkelling packages are managed mainly by private travel agencies and the price charged per person may vary according to the travel agencies. Most of the tour operators and travel agencies have introduced various holiday packages which include snorkelling and diving package to the tourists. Compared to the diving package, snorkelling is much cheaper and affordable. Due to the cheaper pricing, this package will usually be added in the hotel holiday package. Visitors may rent the snorkelling equipment (mask, life vest and snorkel) as a price as low as RM10-RM20 per person. There are also some agencies who charged up to RM300 per person and this package will usually include lunch buffet.

Although efforts by the government in developing marine parks as a tourist destination have resulted in economic benefits for the country, tourism however has double sword effects. Large increases in tourism market have been held up by concerns about the deterioration of marine parks due to snorkelling and diving activities (Rouphael & Inglis, 2001). In Malaysia, there has been no restrictions placed by the Marine Park Department in terms of number of tourists and boats to get into the Marine Parks. Lack of control in terms of the number of tourists, many tour boat operators are seen bringing snorkelers to small snorkelling settings at the same timeframe (Mohamed & Salim, 2013). Such situation will lead to crowdedness

at the snorkelling sites. As use of the marine parks and protected areas increases, interactions with nature are threatened and result in environmental impacts. Such a situation would reduce the quality of Marine Park's ecosystem, thus affecting quality of visitors' experience and their satisfaction level (Topelko, 2007). High satisfaction levels with marine parks lead to positive words of mouth and repeat visitation, while dissatisfaction leads to negative comments and reduces destination image of the marine parks.

1.2 Research Background

The concept of satisfaction has been the focus of a number of studies in national parks and marine parks (Moscardo, 2001; Njeri, 2013; Salleh, Hanim, Othman, Jaafar, & Norghani, 2012; Tonge & Moore, 2007). Most protected areas and marine parks have dual objectives of conserving natural resources and providing opportunities for recreation and tourism activities. To fulfil the second objective, tourism managers require information about visitors' characteristics and types of experience that they are seeking for. High satisfaction is derived from high quality of services and products. In tourism marketing research, high quality of services would result in tourist satisfaction, form a positive word-of-mouth and create tourist loyalty to a destination. In the context of marine parks, understanding visitor satisfaction is essential for Marine Park managers to improve their products and services, and promote market for new and repeat visitors (Tonge & Moore, 2007; Yu & Goulden, 2006). In a global context, tourists' satisfaction is considered as a means to increase destination competitiveness. Research on overall satisfaction and

how to improve satisfaction level is crucial to ensure repeat visitation among tourists. Previous studies (Mendes, do Valle, Guerreiro, & Silva, 2010; Yoon & Uysal, 2005) have proven that repeat visitation to a certain tourism destination is related to higher satisfaction level. For instance, when tourists are satisfied with their stay or activities they involved in, it will partly motivate these people to recommend to others and come back for their next visit. As suggested by Akama and Kieti (2003), through satisfaction, the relationship between visitors and tourism destination is strengthened since high satisfaction will later influence choice of destination, product consumption and also decision to return. On the other hand, dissatisfaction is derived from unfulfilled expectations. Unfulfilled expectations lead to negative comments and consumers will then look for other options. In the context of tourist destination, tourists tend to seek other alternatives of destination that provide better services or products.

Satisfaction is formed by the comparison of customer's expectations before and after consumption. In simple words, if the product does not fulfil the early expectations, dissatisfaction arises. Specifically, in the tourism context, tourist satisfaction is formed by comparing tourists' pre-travel expectations and post-travel experiences (Chen & Chen, 2010). When the experiences perceived by a tourist exceed his or her early expectations and result in the feeling of gratification, satisfaction appears and vice versa. Sadeh, Asgari, Mousari and Sadeh (2012) found that tourist satisfaction is related to two different dimensions: (1) it is related to pre-expectations (before travel): and (2) it is related to tourists' justification of the service consumed based on the experience they received. This statement is also supported by Chon in Meng, et al. (2007) who found that tourist satisfaction is a

comparison between expectation of a destination (due to the previous destination image) and the actual experience they received at the destination, or what tourists see, feel and achieve in their experience of a destination.

This study explores snorkelling satisfaction in marine parks, specifically focuses on Pulau Payar Marine Park. Since most of the visitors to the Marine Park are snorkelers (Hasnan & Ibrahim, 2012), they play an important role in determining snorkelling satisfaction. Visitors are asked about their expectations (on bright colours and patterns of the reef fishes and coral, water visibility, sea temperature and so on) and compare with the experience they received after the snorkelling activity. Visitor motivation and satisfaction with marine tourism experiences are important as they provide a foundation for market segmentation. This is because when people are satisfied with their snorkelling experience, they will later return to the same destination for their next snorkelling trip. Previous research by Moscardo (2001) noted factors that have greatest impact on reef visitors satisfaction with wildlife experience, which are: (1) variety of wildlife seen, (2) amount of visitors believed that they had learnt about the wildlife, (3) how they natural thought the marine wildlife encounters were, and (4) how much visitors perceived the wildlife to be responding to their presence. Moscardo (2005) considered several factors contributing to a satisfaction with wildlife experience include naturalness of the setting, interaction with wildlife, visitor ratings of the excitement and knowledgeable staff. Another study conducted by Tonge and Moore (2007) in the Marine Park Hinterlands, Australia, revealed that condition of the river, presence of litter, and lack of wildlife were the leading factors of dissatisfaction with the park. In this study, these factors were examined in the context of Marine Parks in Malaysia.

Besides that, socio-demographic characteristics also influence the degree of visitor satisfaction. Many studies (Banyai, 2012; Perovic, Stanovic, Moric, & Pekovic, 2012) have demonstrated a significant relationship between socio-demographic characteristics and satisfaction level. As mentioned by Shahrivar (2012), age, visitor origin, education level and previous experience do influence satisfaction level among international tourists visiting Malaysia. In terms of nationality, Shahrivar revealed that Asian visitors are the most satisfied tourists during visits to Malaysia, while African tourists are the least satisfied tourists. Satisfaction level differs according to visitor origin, as each visitor has his or her own expectations while visiting a destination. For instance, tourists from Australia might have different expectations while visiting island destinations in Malaysia compared to Chinese tourists. Research by Moscardo (2001) also revealed that previous experience, visitors' expectations and nationality are positively significant with satisfaction with reef experience at the Great Barrier Reef.

Tourist satisfaction is also influenced by gender. Findings by Yeh (2008) on the snorkelling experience in Kenting, Taiwan revealed that gender influenced snorkelling experience, with female snorkelers expressing higher satisfaction level than males. Previous study by Spinks, Lawley and Richins (2005) found significant impact of three individual visitor characteristics: origin, gender and age on visitor satisfaction with built attraction in Sunshine Coast. The study made a distinction between the local visitors and international visitors where the locals show high satisfaction with the attraction than the international visitors. Although Spinks et al. rejected the assertion that previous experience influences visitor satisfaction, there

are studies that proved previous experience indeed influence visitor satisfaction (Banyai, 2012; Mendes et al., 2010; Sadeh et al., 2012).

1.3 Problem Statement

Snorkelling is the main activity while engaging with the marine parks. According to Hasnan and Ibrahim (2012), more than 79% of total visitors to Pulau Payar involved in snorkelling activity. However, in Malaysia, no regulation is enacted to restrict the number of tourists and boats to enter the marine parks. Lack of control in terms of the number of tourists, many tour operators seem to offer unlimited snorkelling trips, sometimes surpassing the carrying capacity of the site. As a result, overcrowding of snorkelers at the snorkelling areas has become a major concern. A study by Yeo (2004) reported that the high number of tourists could potentially threaten the attractions of Pulau Payar Marine Park.

Many of the corals in Pulau Payar have deteriorated due to overwhelming presence of tourists, as the travel operators allowed between 600 and 700 tourists on the island at one time (E. Kaur, n.d). Lim's research (1997) on carrying capacity assessment in Pulau Payar found that 73.9% of total respondents feel that crowdedness would affect their enjoyment and snorkelling satisfaction at the island. A recent study by Ahmad and Hanley (2009) on the same island revealed that majority of visitors feel crowded when they visited Pulau Payar. This situation is contrary to the guidelines of Marine Park in National Ecotourism Plan, as a

maximum limit on the number of visitors to the park and beach should be set to prevent deterioration of natural resources.

The increased number of tourists at the snorkelling site not only impact the health of coral ecosystem (e.g., coral trampling and pollution), but also reduces the quality of visitors' experience (e.g., crowding and conflict) and satisfaction. As dissatisfaction sets in, it will affect their decision to return as well. In the context of this study, when a visitor feels satisfied with his or her snorkelling experience, they are most likely to visit again for their next snorkelling trip. However, if dissatisfaction occurs due to a snorkelling experience, it will lead to negative complaint (not likely to recommend to others) and not return to the same destination again. In the case of Pulau Payar, they may look for other options and visit to other snorkelling destination at neighbouring countries such as Thailand, Philippines and Indonesia. This scenario may be taken lightly by some money-minded parties, but in the long run this might affect the image of Malaysia's marine parks as a whole. As the popularity of snorkelling increases, it becomes even more important to maintain a balance between the use and conservation of marine resources.

Besides crowdedness, there is a few other variables lead to dissatisfaction with snorkelling trip. In other research on satisfaction with snorkelling trip, Topelko (2007) revealed that snorkelers were less satisfied with some aspects of natural environment including variety of fish and coral shapes, number of boats and snorkelers and also safety information provided by the staff in Koh Chang National Park, Thailand. Of the total respondents, only 23% were satisfied with the overall snorkelling trip in Koh Chang National Park. There are some similarities between

findings by Topelko and Shafer (2000) on snorkelers at the Great Barrier Reef. Respondents reported high level of satisfaction with types of fish, size of corals and abundance of colourful corals. In addition, an abundance of reef fish (Lim, 1997), quality of natural environment, and good weather (Coghlan, Fox, Prideaux, & Luck, 2009) may influence satisfaction with reef experience.

Research by Lim (1997) on carrying capacity assessment of Pulau Payar revealed most of the snorkelers dissatisfied with their snorkelling trip due to inadequate guided activity and lack of information on the marine environment. Another research by Mohd Salleh et al., (2012) on Pulau Payar found that visitors are dissatisfied with the low level of abundance of corals at the islands. Based on the previous studies, the natural conditions are very influential on visitors' evaluation of the quality of snorkelling experience, so as influencing their satisfaction.

Harriot (2002) and Ong and Musa (2012) argued that future research on snorkelling should be conducted within Malaysia context as it has a potential to pose a significant impact towards marine environment. In addition, personal interviews with K. Amri (personal interview, 31 October, 2013), a professional dive master and A.R. Mohd (personal interview, 12 November, 2013), fishing officer at Department of Marine Park Kedah confirmed that research on snorkelling satisfaction has yet to be conducted as most research regarding tourism activities in marine parks in Malaysia has focused on scuba diving. Thus, this study aims to fill the gap by exploring the variables of satisfaction with marine experience in the context of Malaysian marine parks.

1.4 Research Objectives

The objectives of this study are:

- a. To evaluate the level of snorkelling satisfaction at Pulau Payar Marine Park
- b. To determine areas of management that need to be maintained or improved at Pulau Payar Marine Park
- c. To analyse whether socio-demographic characteristics significantly influence snorkelling satisfaction at Pulau Payar

1.5 Research Questions

Research questions for the study are as follows:

- a. What is the level of satisfaction at Pulau Payar Marine Park?
- b. Which are the areas of management that need to be maintained or improved?
- c. Which socio-demographic characteristics that significantly influence satisfaction level?

1.6 Research Hypothesis

Socio-demographic characteristics are commonly used as a basis for segmenting market and developing marketing strategies. Many studies (Nowacki, 2013; Perovic et al., 2012; Spinks et al., 2005; Yu & Goulden, 2006) have proven socio-demographic characteristics such as age, gender, nationality, previous travel experience, education level and income influence visitor satisfaction in tourist destination. Although these variables seem unimportant, slight changes on the variables might affect tourist satisfaction level. To achieve one of the objectives of this study, a hypothesis is proposed to determine the relationship between socio-demographic profile and snorkelling satisfaction at Pulau Payar Marine Park as follows:

Research hypothesis: *Socio-demographic characteristics significantly influence snorkelling satisfaction at Pulau Payar Marine Park*

1.7 Significance of the Study

This study gives a new insight since snorkelling has a potential to impact the marine environment. The main purpose of this study is to evaluate snorkelling satisfaction at Pulau Payar Marine Park. It is important to evaluate the quality of the tourist experience on snorkelling trips to encourage repeat visitation, but at the same time, maintaining a good quality of snorkelling experience. Information on the level of visitor satisfaction at the marine parks helps in the long term strategic planning and provides assistance to Marine Park authority in improving the service quality. Improvements are essential to enable Pulau Payar Marine Park to compete with other marine parks in Malaysia.

Understanding visitor satisfaction and the response of their experience at the destination gives a new insight to the tourism managers of what type of expectations and services that tourists are looking for, whilst promoting to target markets for new and repeat tourists. With this study, it is hoped that it will be able to provide a better understanding of relative importance which tourists will consider when evaluating visitor satisfaction and service quality provided by tour operators. Hopefully, the findings of this study will contribute to the setting of a foundation for future studies on visitor satisfaction, which will be a benchmark for marine parks in Malaysia.

1.8 Scope of the Study

The scope of the study focuses on snorkelling satisfaction on both international and local visitor to the study area. Previous studies regarding satisfaction with marine lives will be the focus of this study. As this study focuses on Pulau Payar Marine Park, several variables related to the previous studies in other marine parks in Malaysia and other countries are highlighted and discussed in this study. In addition, related methods to measure satisfaction are also discussed in the literature review. This study also highlights the areas that require management attention by the Marine Park Department and other related agencies, in hopes that the findings of the study will assist them to improve the quality of services provided at the Pulau Payar Marine Park. Besides that, previous studies indicate that socio-demographic characteristics influence satisfaction with destination. Thus, this study also discussed the influence socio-demographic characteristics on snorkelling satisfaction.

1.9 Brief Research Methodology

This study used quantitative approach and the targeted respondents were snorkelers who visited Pulau Payar Marine Park. Sampling technique of this study employed convenience sampling and sampling size are determined based on tourist arrivals to Pulau Payar. Survey questionnaire is employed in this study and distributed to the respondents (consist of domestic and international visitors) after their snorkelling trip. The questionnaires consist of close-ended and open-ended questions. Close-ended questions are divided into four main sections which are (1) tourists' demographic profile, (2) travelling pattern, (3) factors of satisfactory snorkelling experience and (4) tourist satisfaction and revisit intention. The open-ended questions consist of two questions which allow respondents to give their opinions regarding their snorkelling visit to Pulau Payar Marine Park.

Importance-Performance Analysis (IPA) has been widely used in tourism research. This approach combines measures of importance and performance in a two-dimensional grid to provide a graphic representation of the performance of the managers or operators in providing a range of services to the consumers. This approach is seen as a good measure for the service providers to identify areas of management concern. IPA has been widely adopted in a variety of research fields include evaluating environmental service quality (Salleh et al., 2012; Salleh, Hanim, Zarul, Othman, & Mohd Idris, 2014), facilities (Tonge & Moore, 2007) such as toilets, campsite and visitor centre, whale shark tourism (Ziegler, Dearden, & Rollins, 2012), and service quality (Yu-Kai, Yi-Wei, & Shi-Wei, 2009). Despite its application in various tourism research, it has seen limited application in marine parks and other protected areas, especially to evaluate natural conditions and

recreational settings (Arabatzis & Grigoroudis, 2010; Wade & Eagles, 2003). Tonge and Moore (2007) re-conceptualised the IPA approach into Importance-Satisfaction Analysis (ISA) so that it can be applied in the protected areas and Marine Park settings. Re-conceptualisation of IPA to an importance-satisfaction approach is important for protected area managers as they concerned with providing desired outcomes for visitors. Comparing importance and satisfaction provides essential information on which limited resources can be directed or saved.

1.10 Background of the Study Area

Pulau Payar is located off the coast of Kedah, between Pulau Langkawi and Penang. The Marine Park consists of four islands which are Pulau Payar, Pulau Lembu, Pulau Kaca and Pulau Segantang. Before the Pulau Payar group of islands were gazetted as a Marine Park, their surrounding water were important fishing grounds for fishermen based in Kuala Kedah. Drift netting, purse-seining, bottom traps and long-lining were among fishing activities that were carried out the islands. Pulau Payar archipelago was gazette as Marine Park in 1989 when the Establishment of Marine Parks Malaysia (Pulau Payar) Order 1989 was enacted (Lim, 1997). Since its gazette as a Marine Park, Pulau Payar has been expanding rapidly, with an increasing number of visitor over the years. Other islands around Pulau Langkawi include Pulau Singa, Pulau Dayang Bunting, and Pulau Beras Basah. However, these islands do not have coral reefs comparable to that of the Marine Park, making Pulau Payar as the first choice for snorkelling activity in Northern area. Among these islands, Pulau Payar is the largest island, with an area of 31.2 hectares and an approximate length of 1.75 km (Department of Marine Park Malaysia, 2014). Coastline of the island is about 3.35 km with very limited beach and flat land with no freshwater sources. Pulau Payar has limited strips of beach coast. There are only four sandy beaches in the island with approximately 100 to 150 metres long each. The whole island is covered with dense vegetation (refer to Figure 1.2).



Figure 1.2 Map of Pulau Payar (not to scale).
 Source: Department of Marine Park Malaysia (2014)

Pulau Payar is considered as a part of the Langkawi Island holiday package. Since its opening, the Marine Park has attracted various local and international tourists worldwide. As there is no record of how many visitors involved in snorkelling activity in Pulau Payar, it can be predicted that through tourist arrivals to the Marine Park, most of the visitors to Pulau Payar would participate in the snorkelling activity. The promotion of Pulau Payar as a tourist destination is strongly related to the tourism development in Pulau Langkawi. Promotion is carried out by Langkawi Development Authority (LADA) and Kedah State Economic Planning Unit (UPEN Kedah) to attract both foreign and domestic tourists. In addition, tourist attraction to Pulau Payar is also supported by the recognition of Langkawi as TripAdvisor's 'Travelers' Choice' in 2013. The massive promotion of Pulau Langkawi helps Pulau Payar to be recognised as the Marine Park. Apart from that, visitors are required to pay RM 5.00 (for adults) and RM 2.00 (for children) for marine conservation fee. The fees are used for conservation and maintenance work at the marine park.

The Marine Park is recognised internationally as a supporting tourism attraction of Kedah state as well providing a diversity of visitor experiences. While other marine parks in East Peninsular Malaysia encounter monsoon season, the climate of the island is typically hot and humid throughout the year. Being the only Marine Park located in northern part of Peninsular Malaysia, Pulau Payar Marine Park has become the tourist's choice for snorkelling whenever they visit Langkawi or Penang. Instead of snorkelling, diving activity also becomes the choice of tourists visiting Langkawi. There are three main entry points to get to Pulau Payar. Ferry to the Marine Park departs on a daily basis. Visitors may depart from Kuah Jetty

(Langkawi), Swettenham Pier (Penang), or Kuala Kedah Jetty. However, most of the visitors to Pulau Payar departed from Kuah Jetty as the duration to the Marine Park only takes about one hour compared to from Penang at two hours.

1.10.1 Facilities at Pulau Payar Marine Park

Since there are no accommodation facilities in Pulau Payar, most of the visitors to the Marine Park are day trippers. Depending on the point of embarkation and time duration to the island, visitors are expected to reach at the island at 11.00 a.m and arrive at the jetty (Kuah or Swettenham Pier) at 5.00 p.m. Occasionally, camping sites are provided for visitors who would like to organise a camping activity along the beach with the Marine Park's permission. However, given the lack of fresh water supply, only a few choose to camp here. A Marine park centre is provided to facilitate visitors with useful information about the Marine Park, coral reefs, rules and regulations (do's and don'ts) and interpretation of marine life and coral reefs in the island. Visual presentation about the Marine Park is also demonstrated to help visitors to further understand about Pulau Payar Marine Park.

Toilets, changing rooms, gazebo, picnic tables and rubbish bins are provided by the Marine Park Centre to facilitate the visitors. The source of water supply in the Marine Park is sea water. Since no freshwater is provided in the toilets, it has been a major complaint from the visitors. There are also hiking and walking trails for visitors to explore the island. In addition, the Langkawi Coral Pontoon, managed by Langkawi Coral is another unique attraction in Pulau Payar, offering visitors a luxury one-stop centre for reef-related activities. Visitors may visit an underwater

observatory, located beneath the pontoon and enjoy the diversity of underwater marine fish (refer to Figure 1.3).

Figure 1.3 Facilities available at Pulau Payar Marine Park



Figure 1.3(a) Langkawi Coral Pontoon



Figure 1.3(b) Marine Park Centre



Figure 1.3 (c) Underwater observatory



Figure 1.3 (d) Toilets and changing rooms provided for the visitors

1.10.2 Issues at Pulau Payar Marine Park

According to Fisheries Act 1985, one of the objectives of Marine Parks in Malaysia is to establish zones of recreational use consistent with its carrying capacity. However, from what is seen, the implementation of Marine Parks does not fit with the objectives created. Among several issues associated with Malaysia's Marine Park, overcrowding of tourists is the main issue that occurred at most of the marine parks in Malaysia (C. R. Kaur, 2007). For instance, tourist arrivals to Pulau Payar Marine Park have dramatically increased from a mere 3,668 in 1990 to 106,780 in 2000. Since the Marine Park is open for visitors throughout the year, these figures keep on increasing at its peak which recorded a total of 139,840 in 2013 (refer to Figure 1.4).

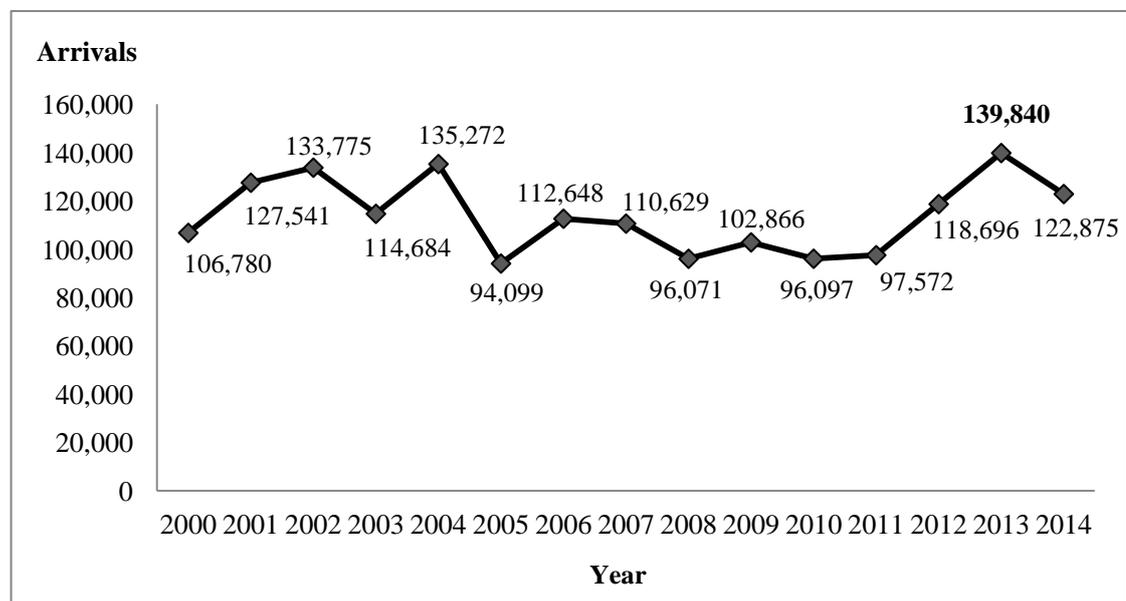


Figure 1.4 Tourist arrivals to Pulau Payar Marine Park from 2000 to 2014

Source: Department of Marine Park, Malaysia (2014).

Pulau Payar is chosen as a study area of this study due to the higher number of tourist arrivals of all Marine Parks in Malaysia. Based on the statistics of tourist