

Experiences and satisfaction of scuba dive tourists in Cambodia:

A case study of Sihanoukville

Phirum Kunthea

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Primary supervisor: Professor Mark Orams

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Attestation of authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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Abstract

Sihanoukville is Cambodia's most popular coastal and marine tourism destination and scuba diving tourism has been gradually increasing. Although the tourism sector has been increasing, research has paid very little attention to this phenomenon. This study is the first empirical research focusing on the experiences and levels of satisfaction of scuba dive tourists in Sihanoukville. Mixed methods, using both quantitative and qualitative techniques, were employed in this study by distributing self-reply questionnaires and conducting semi-structured interviews. The results reveal a profile of scuba divers who predominantly came from Western countries with relatively high incomes, ranging from young to middle age groups and mostly travelling alone. There were more males than females. Most scuba divers to Sihanoukville were motivated to see life under the sea and several attributes contributed to their satisfactory experience: taking photos underwater, socialisation, watching marine life and seeing rare things which they had never seen before. However, results show other factors that can lead to negative diving experiences such as overfishing, dynamite fishing, and waste disposal. The findings also indicated that scuba divers wish to see future changes such as artificial reefs and wrecks and the outlawing of illegal fishing. This first study on scuba diving in Cambodia offers recommendations for key stakeholders to take into account so that the dive experience can be improved and scuba diving tourism sustained in Sihanoukville. Other implications are also proposed for future research.

Keywords: *scuba diving tourism, experience, satisfaction, Sihanoukville, Cambodia*

Chapter 1 Introduction

1.1 Background

Sihanoukville is a province in Cambodia and is located in the north-west of the country. The Cambodian coastline extends for 435 kilometres and includes the four provinces of Koh Kong, Sihanoukville (approximate 171 kilometres), Kampot, and Kep. This coastline is situated in the north-eastern Gulf of Thailand in the China Sea. Sihanoukville province is 224 kilometres away from the capital city of Phnom Penh and is about a five hour-drive or 45 minute flight. The climate in Sihanoukville is tropical monsoon which is hot and humid. The province has a minimum average temperature of 19 degrees Celsius and a maximum average temperature of 35 degrees Celsius.

Sihanoukville has potential natural resources for coastal and marine tourism development. The area has been called 'the rising star' because current development of the location is rapid. Sihanoukville province has beautiful white sandy beaches, good fresh air, attractive modern beach resorts, waterfalls, and tremendous biodiversity all of which are potential tourist attractions. In addition, Ream National Park (210 square kilometres), a protected area administered by the Ministry of Environment, is located in the province making the territory rich in marine resources. Sihanoukville province is regarded as one of the four major tourism development zones as set by the government alongside the capital city Phnom Penh, Siem Reap Angkor Wat, and the north-eastern ecotourism zone.

Furthermore, Sihanoukville is not only a beautiful part of the coastline of Cambodia, it is also a central business centre for trade and investment. It has good infrastructure such as an international airport, an international deep-seaport, telecommunications, and other supporting infrastructure. There are many tourism investment projects on the islands,

most of which are being undertaken by the private sector. Due to the rapid development of the province, the population has been noticeably increasing. In 1991, the population was 100,366 (MoE & DANIDA, 2002) and reached 155,690 and 199,902 in 1998 and 2008 respectively (NIS, 2009). The steep rise in the population is due to the general development of the area, especially the tourism industry.

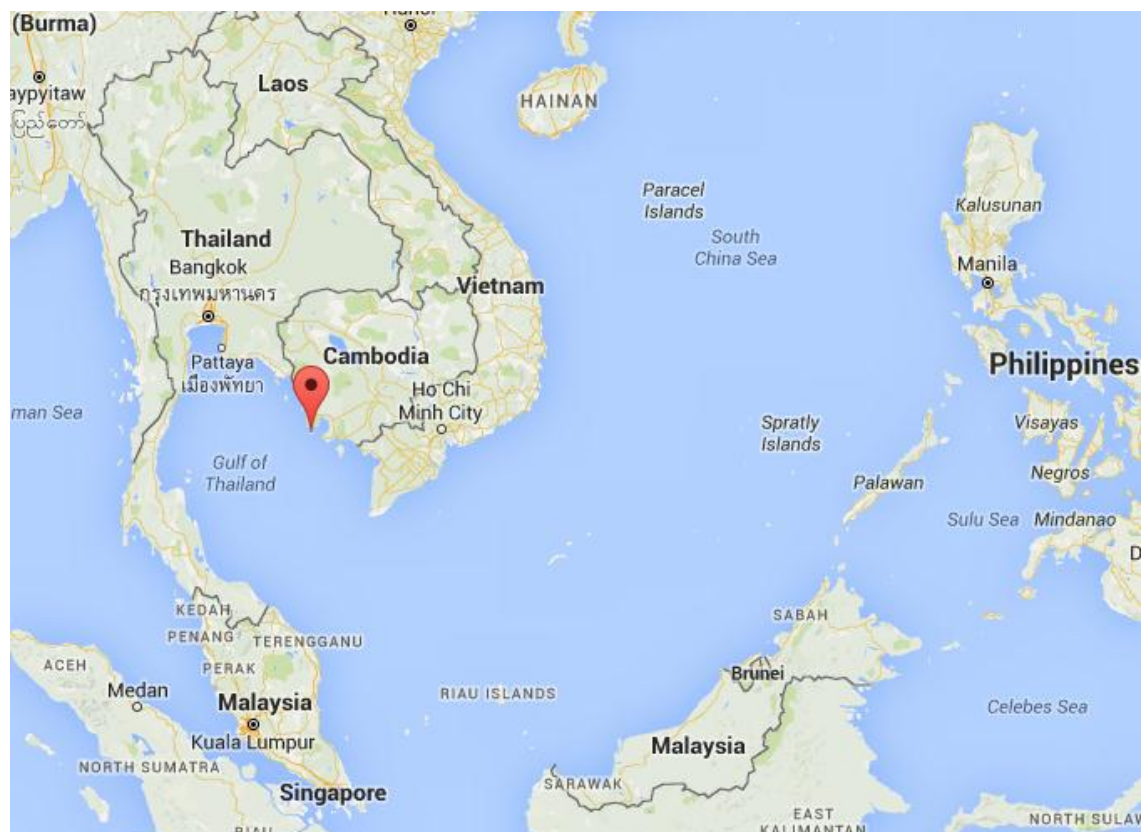


Figure 1.1: Regional map of Sihanoukville

Source: Google Maps, 2015

The coastline was largely abandoned during the civil war (1970-1980s), but it has now become a popular marine tourism destination in the country. Some of Sihanoukville's islands, such as Koh Pulavei Island and Koh Prins Island, used to be controlled by the army of the Khmer Rouge regime and no civilians lived there in the late 1970s. Yet, these islands are now becoming tourist destinations for their beautiful scenery and marine species. Snorkelling and scuba diving are popular marine activities in these islands.

It has been claimed that Sihanoukville has significant marine resources, especially coral reefs (Bochove, Ioannou, Mcvee & Raines, 2011). These marine resources include live, hard and soft coral reefs, fish species, rocks and sand (Bochove et al., 2011). These resources can be found predominantly in around Koh Rong Island and Koh Rong Samleom Island. Some attractive fish species such as butterflyfish (Chaetodontidae), parrotfish (Scaridae), snapper (Lutjanidae), groupers (Serranidae) and sweetlips (Haemulidae), have been reported along the Sihanoukville coastline (Bochove et al., 2011). Other species are also present along this coastline including sea urchins, giant clams, sea cucumbers, starfish, and lobsters.

According to a report from the provincial Department of Tourism (2015), Sihanoukville experienced considerable tourism development in 2014. It received 1,327,748 tourist arrivals, an increase of 28.41 per cent compared to 2013. The number includes 969,109 domestic tourists and 358,639 international tourists representing an increase of 31.46 per cent and 18.62 per cent over 2013 respectively. More than half of international tourists visiting this coastal area visit the islands, from which many of them go snorkelling and scuba diving. The increasing international tourist arrivals and the rising number of tourism vendors have made some of the islands of Sihanoukville more popular and they have gradually been developed.

Scuba diving in Sihanoukville began to increase in popularity in early 2000 with a few dive centres. While thousands of marine operators have been operating scuba diving services around the world, there are less than 10 dive centres in Sihanoukville, four of which are five-star dive centres authorised by the Professional Association of Dive Instructors (PADI). At present, there are four main scuba diving centres in Sihanoukville. These centres are The Dive Shop, Koh Rong Dive Centre, SCUBA Nation, and Ecosea Dive.

Investment in scuba dive tourism has been increasing and although dive tourism is very relatively new in Sihanoukville the numbers of divers are growing in the region. As a result of this growth and that of other coastal and marine tourism activities, coastal development has become an important and controversial issue. However, there has been no research to date on scuba diving tourism in Sihanoukville or in Cambodia. As a consequence, the research reported in this thesis provides the first empirical data on scuba diving tourism in the area by conducting an exploratory research study. This work focuses on the experiences and satisfaction of scuba dive tourists and compiles a demographic profile of them. The scope of this study concentrates in particular on the Sihanoukville province as a case study.

In 2011, the bay of Cambodia was selected as one of the Most Beautiful Bays in the World Club (PEMSEA, 2011). As a result of such rankings and the increasing profile, it is highly likely that Sihanoukville will attract more visitors in the coming years as the beautiful beaches and marine resources as well as the hospitality services that the place has to offer tourists become more well known. As a consequence, exploratory research such as that presented in this thesis is important because better understanding the characteristics, experiences and views of marine tourists such as scuba divers can inform decision making for tourism development and management in Sihanoukville.

Picture 1.1: A scuba dive tourist diving near Koh Rong Island



(Source: Phirum Kunthea, 2015)

Picture 1.2: Foreign tourists relaxing on one of the beaches on Koh Rong Island



(Source: Phirum Kunthea, 2015)

Picture 1.3: Local restaurants on Koh Rong Island



(Source: Phirum Kunthea, 2015)

Picture 1.4: Boats used for scuba diving in Sihanoukville



(Source: Phirum Kunthea, 2015)

The Cambodian government has raised the prospect of Sihanoukville province being designated as one of the most important development zones for Cambodia. This is because Sihanoukville has potential resources for both economic and tourism development. From a tourism perspective, Sihanoukville has natural resources that can be tourist attractions for coastal and marine tourism development. In this regard, the Cambodian government considers coastal and marine tourism as one of the highest priorities in its tourism development strategic plan. Yet, research with regards to coastal and marine tourism for Cambodia is poorly documented.

1.2 Research objectives

This exploratory research has three main aims:

- i. To understand the demographics of scuba dive tourists in Sihanoukville.
- ii. To describe experiences and the levels of satisfaction of scuba dive tourists in Sihanoukville.
- iii. To explore issues that concern scuba dive operators and tourists in Sihanoukville.

1.3 Research questions

There are six main questions in this research:

- 1) What are the demographic characteristics of scuba dive tourists in Sihanoukville?
- 2) What are the motivations of scuba dive tourists who go diving in Sihanoukville?
- 3) What are the experiences of scuba dive tourists in Sihanoukville?
- 4) What are the levels of satisfaction of scuba dive tourists in Sihanoukville?
- 5) What issues concern scuba dive tourists in Sihanoukville?
- 6) What changes do scuba dive tourists in Sihanoukville wish to see in the future?

1.4 Research benefits

There are several potential benefits of this research to the participants, the researcher, and the wider community. Firstly, the results of this research study are crucial for the further success of local marine tour operators. The information gained from the research can be utilised for a more effective marketing strategy in the future. Products and services could be developed and designed to better satisfy potential customers. The shared information will help the local tourism industry to enhance their strengths and improve their weaknesses, especially in relation to better planning. Secondly, it is beneficial for dive tourists themselves. The dive tourists who have participated in this study have had opportunities to share their thoughts about various services provided at the site as well as their levels of satisfaction and experiences. Furthermore, the potential improvements made may benefit future dive tourists in Sihanoukville.

This study is the first empirical investigation of scuba diving tourism in Sihanoukville. The information provided will be useful for both the Department of Tourism as well as the Ministry of Tourism. The Department of Tourism have more accurate information on dive tourists' such as their characteristics, motivations, and activities. The Department of Tourism will be able to cooperate with marine tour operators more effectively after evaluating the tourists' responses on particular types of products and services. This research study will be submitted to the Ministry of Tourism and once the Ministry receives the research results, this research can help to implement the recently published *Tourism Strategic Plan 2012-2020*. The Strategic Plan has claimed that coastal and marine tourism is one of the top development priorities and that supporting documentation is necessary. Therefore, having this research report on dive tourism will assist the implementation of this strategy.

Finally, from an academic perspective, this study has allowed the student to develop skills, knowledge, and experience as a researcher and of dive tourism within the broader field of coastal and marine tourism. The student will benefit from applying those skills, knowledge and experiences to the workplace on completion of his postgraduate studies and upon his return to his home country.

1.5 Research outline

This research thesis follows a traditional structure and has six chapters. Chapter one provides an introduction which gives brief background on the research location, objectives of the research, and the benefits of the research. Chapter two gives an overview of the relevant literature in which the researcher reviews previous studies pertinent to the topic, especially literature related to scuba diving tourism. Then, the research design in chapter three highlights how this research has been conducted and the analyses carried out on the data collected. After that, the researcher details the results of the research in chapter four. In this chapter, data obtained from self-reply questionnaires are presented and analysed while examples of data gained from semi-structured interviews are presented in a narrative description. Chapter five then provides a discussion of results in which the researcher examines the research findings by comparing and contrasting with previous research, as well as analysing the experiences of dive tourists in Sihanoukville and their levels of satisfaction. Finally, the conclusion in chapter six provides an overview of important results related to the research questions, describes and explains the study's limitations as well as providing suggestions for future research and recommendations to key stakeholders in scuba diving tourism in Sihanoukville.

Chapter 2 Literature Review

2.1 Coastal and marine tourism

The widespread development of coastal and marine tourism is widely reported in the literature. For example, over two decades ago Miller (1993) concluded that the rise of coastal and marine tourism had become one of the important issues in the fields of ocean and coastal management. By the turn of the century coastal and marine tourism was considered to be one of the fastest growing sectors in the world tourism industry (Hall, 2001). This growth had been building over the prior four decades (Hall, 2001; Orams, 1999). In reviewing this growth, Hall (2001) noted a transition from the traditional marine tourism of the four 's' attractions (sun, sand, surf and sex) over the previous 50 years to a more diverse range of marine tourism attractions and activities, including scuba diving, fishing, kite surfing, and cruising.

Davenport and Davenport (2006) claimed that increasing disposable incomes, especially in developed countries, led to the increased demand for more coastal and marine leisure activities. In particular, activities which are based on equipment have become more accessible as they have become more affordable. Traditional coastal recreational activities such as walking, sunbathing and swimming have extended to equipment based activities such as surfing, windsurfing, wake-boarding, off-road vehicles (ORV), self-contained underwater breathing apparatus (SCUBA), and personal watercraft (PWC), (Davenport & Davenport, 2006, p.281). Such innovations can now be seen in most popular marine tourist locations. The appeal of the sea and coast, sunshine, seafood, beaches, and scenic views are primary attractions for many significant tourist destinations.

Coastal and marine tourism is continuing to experience growth exceeding that of the wider global tourism industry (Garrod & Gössling, 2008). The increase of new emerging destinations with opportunities for more adventurous activities, and the growing trend of travellers seeking to interact with marine wildlife such as sea-birds, whales, dolphins, and corals, reveals that coastal and marine settings are continuing to attract attention from tourists. For example, according to the European Commission, at least 60 per cent of European holiday makers in 2013 preferred to travel to coastal destinations (European Commission, 2014).

The development of coastal and marine tourism contributes significantly to the economies of many nations. For example, many countries in the Caribbean depend primarily on the tourism industry for their economic revenue (Gormsen, 1997). Tourism has also been strongly promoted in the Mediterranean as well as the Caribbean and these two regions have become major coastal tourist destinations in the world (Davenport & Davenport, 2006). Finally, the development of tourism along the coast has attracted more people to live in coastal areas. Consequently, the density of people living in the coastal areas is claimed to be three times more than the density of people living in inland areas (Burke et., 2011).

2.1.1. Examples of coastal and marine tourism development around the world

To illustrate in more detail the influence of coastal and marine tourism, a brief review of locations in small states such as The Republic of Maldives, Hawaii (USA), and Costa Rica will be provided. First, The Maldives is a developing country located in the Indian Ocean. This small island country consists of 26 coral atolls that contain 1,190 very small islands, however, only 203 of those islands are inhabited by humans (Sathiendrakumar & Tisdell, 1989). The primary source of economic development for the Maldives are marine resources and, in particular, marine-based international tourism

(Sathiendrakumar & Tisdell, 1989). This is because while the total area of the country covers 90,000 square kilometres, 99.67 per cent of that area is occupied by water most of which are lagoons and inland waters (Manfred, 1985). Because the Maldives is located in a tropical climate, it has a wide range of coral reef ecosystems supporting a range of marine flora and fauna, which provide a range of underwater tourist attractions for diving and snorkelling (Manfred, 1985). Since 1972, diving and snorkelling tourism have become more popular in the Maldives making the country one of the world's top ranked tourist destinations in terms of diving and snorkelling (Manfred, 1985).

The tourism industry or so called "resort islands" play a very important role in contributing to the Maldives's economy (Manfred, 1985; Sathiendrakumar & Tisdell, 1989). In 1972, tourism was modest with only 1,096 tourist arrivals and only two resorts (Manfred, 1985). However, growth was rapid and by the early 1980s international tourism contributed 13.4% of the country's Gross Domestic Product (GDP) (Sathiendrakumar & Tisdell, 1989). By 2013, the Maldives had 110 tourist resorts (including marinas) and received 1,125,202 tourist arrivals (Ministry of Tourism, 2014). Tourism has been the country's largest earner of foreign exchange over the last three decades, and is reported as the largest earner of foreign exchange as well as the leading employment generator (Ministry of Tourism, 2014). Furthermore, the tourism industry of the Maldives has contributed significantly to the country's GDP accounting for 27 per cent in 2013 (Ministry of Tourism, 2014).

The tourism industry in the Hawaiian Islands has been dominant for many decades. The marine resources such as coral reefs, marine animals, unique topography together with warm clear waters attract over seven million tourists each year (Wiener, Needham & Wilkinson, 2009). The growth of tourism in Hawaii has been based on marine recreational activities and, in particular, the growing interest in marine species in the

state's aquatic ecosystems. More than 80 per cent of tourists visiting Hawaii, for example, take part in marine-based activities such as snorkelling, scuba diving, surfing, and kayaking (Wiener, Needham & Wilkinson, 2009). In 2014, the state of Hawaii received 8.3 million tourist arrivals with a total tourist expenditure of 14.7 billion US dollars (HTA, 2015). It has been confirmed that the tourism industry is the most significant contributor to the Hawaii state's GDP (Hu, Boehle, Cox & Pan, 2009). These key economic figures, therefore, reflect the importance of coastal and marine tourism which is shown mainly by the marine natural resource-based recreation activities (Hu et al., 2009).

Costa Rica is another example of the growing development of coastal and marine tourism. Located in the central America, Costa Rica is rich in natural resources which form key tourist attractions (Brida & Zapata, 2010). These attractions have made Costa Rica a world ranked ecotourism as well as cruise tourism destination over the past two decades (Simms, 2010). Since late 1980s, Costa Rica has been positioning itself as a sun-and-sand tourist destination with strong support from private sector resort developments (Simms, 2010). The popularity of ecotourism as well as coastal and marine tourism have resulted in a unique brand attribute for this country.

Due to the significant economic impact of tourism, the Costa Rican Board of Tourism has been putting strong effort into promoting the tourism industry (Brida & Zapata, 2010; Simms, 2010). Costa Rica received just US\$10 million from tourism revenue in 1964 and by 2008 the revenue grew to US\$2 billion (Brida & Zapata, 2010). Tourism revenue contributed to the country's GDP with a 7.2 per cent during the period 2000 to 2007 and it has become the most important source of foreign exchange (Brida & Zapata, 2010).

Costa Rica received more than 2.4 million arrivals of international tourists in 2013 while the country received 1.4 million in 2004 (Costa Rica Tourism Board, 2014). The arrival by cruise ships, in particular, has been increasing dramatically from 186 cruise ships arrivals in 2002 to 238 cruise ships arrivals in 2008 (Brida & Zapata, 2010). In addition, research has confirmed that a vast majority of the tourists (78 per cent) who visited Costa Rica were motivated by coastal and marine attractions (Simms, 2010).

The aforementioned three examples of tourist destinations indicate the potential importance of coastal and marine tourism in the development of small states and countries. It reflects the role of the tourism industry in contributing to the respective state and countries' economies.

While coastal and marine tourism has seen significant development in Western countries and in a number of tropical island destinations, there is limited research that has explored coastal tourism development in Asia, particularly Southeast Asia. Some countries in this region perceive marine-based tourism as key economic development tool and seek to utilise marine resources such as beaches, coral reefs, mangroves, and islands as tourist attractions (Wong, 1998). For example, popular beach resorts have been developed in Bali in Indonesia, Phuket, Koh Samui, Hua Hin in Thailand, Penang in Malaysia, and Cebu in the Philippines.

According to Wong (1998) there are established, emerging, and pioneering beach resorts in the Southeast Asia region. Those tourist resorts are grouped in Table 1.1 below according to their level of development.

Table 2.1: Groups of established, emerging, and pioneering beach resorts

Locations\types of	Established	Emerging	Pioneering
Indonesia	Bali	Lombok	Bintan, Nias, Bangka, Belitung, Lampung, Serib, Flores, Ujung Padang, Manado, Biak
Malaysia	Penang	Langkawi, Kuantan, Tioman, Kota Kinabulu	Pangkor
Philippines		Cebu	Samal, Palawan
Thailand	Pataya, Phuket, Koh Samui	Hua Hin, Rayong,	Krabi

Source: Adapted from Wong, 1998

The Southeast Asia region is regarded as one of the largest and most important marine areas in the world, containing large areas of coral reefs estimated to have the equivalence of one third of the earth's coral reefs (91,700 of 284,000 square kilometres) (Burke et al., 2002). Such significant marine resources can be potentially be significant tourist attractions, especially for snorkelling and scuba diving (Garrod & Gössling, 2008; Hall, 2001; Orams, 1999). Hence, it is crucial to examine those resources in sensitive area such as the Coral Triangle.

Coral reefs in the tropical coastal destination such as the Coral Triangle (CT) can be seen as significant tourism resources as well as of biodiversity significance. The CT includes six countries namely Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands, and Timor-Leste and it is regarded as the world hotspot for marine biodiversity (Cabral, Trinidad, Geronimo & Alino, 2012). It has been claimed that the significance of this marine biodiversity is exceptional (Berdej, Andrachuk & Armitage, 2015). It is important because direct benefits of coastal ecosystems in the CT can

support an approximate 100 million people in terms of food security and livelihoods (Berdej et al., 2015). Due to the importance of the CT, moreover, each member country of this region has its own systems of marine protected areas (MPAs) at both national and regional levels (White et al., 2014). Research conducted by White et al., (2014) shows some key aspects of marine protected areas in the CT:

More than 1,900 MPAs covering 200,881 km² (1.6% of the exclusive economic zone for the region) have been established within these countries over the last 40 years under legal mandates that range from village level traditional law to national legal frameworks that mandate the protection of large areas as MPAs. (p.87).

In addition, areas of coral reefs covered by the six countries of the CT are enormous (White et al., 2014). For example, Indonesia has the most archipelagos in the world, has a coastline of 95,181 km and has an area of 19,868 km² of coral reefs, accounting for 15.8 per cent of the world's coral reefs. Malaysia has a coastline of 4,675 km and has an area of 1,698 km² of coral reefs accounting for one per cent of the world's coral reefs. Papua New Guinea (PNG) has rich marine biodiversity, covers an area of 7,256 km² of coral reefs accounting for about six per cent of the world's coral reefs. PNG has more than 59 MPAs which cover about 4,558 km². The Philippines is also rich in marine biodiversity covering 33,900 km of coastline that contains an approximate 12,021 km² of coral reefs. The area of coral reefs covered by the Philippines is estimated as nine per cent of the global total. Solomon Islands, similarly, is a large archipelago that consists of 922 islands and has 2,804 km² of coral reefs. Although Timor-Leste has the smallest area, (700 km of coastline and 35 km² of coral reefs), Timor-Leste has high biodiversity and an abundance of cetaceans. In short, the Coral Triangle has tremendous marine resources, especially a very large area of coral reefs. More than a quarter of the world's coral reefs can be found in the CT region. While these resources provide countless ecosystem services for about 100 million people (Berdej et al., 2015), such large amount of coral reefs can form as core tourist attractions for scuba dive tourism (Jennings,

2007; Orams, 1999). As a result, a number of projects have been conducted to explore development opportunities with regards to the relationship between tourism and those resources (eg. Charlie, King & Pearlman, 2013; Fabinyi, 2008; Fabinyi, 2010).

2.2 SCUBA diving tourism

A large and growing body of literature has investigated scuba diving tourism (dive tourism) (Davis & Tisdell, 1995; Garrod & Gössling, 2008; Ince & Bowen, 2011; Musa, 2002; Tabata, 1992; Wongthong & Harvey, 2014). Dive tourism, has grown considerably and attracts millions of tourists who are interested in utilising the technology to personally explore under the sea (Wongthong & Harvey, 2014). Dive tourism was defined by Garrod and Gössling (2008) as “an activity of people travelling away from their primary place of residence and staying overnight with the primary purpose of participating in scuba diving activities” (p.7). It has been recorded that this type of tourism can help increase economic revenue for some countries. For example, based on a recent study, scuba dive tourism accounted for at least 15 per cent of gross domestic product (GDP) in more than 23 countries worldwide (Wongthong & Harvey, 2014).

It has also been argued that scuba diving can diversify and enrich tourism products in a particular destination (Dikou & Troumbis, 2006). Because scuba diving requires, qualifications and equipment that are relatively expensive, it tends to be undertaken by higher socio-economic groups and, as a consequence, destinations popular for scuba diving attract tourists from relatively high income classes (Dikou & Troumbis, 2006). In addition, dive tourists tend to be more focused and dedicated in their demand for their diving activity than other types of tourists (Ince & Bowen, 2011). They are different from other tourists because dive tourists take part in scuba diving activities as they have intrinsic motivation in doing so and the desire for active involvement in such activities

(Jennings, 2007). To compare with water-based tourism, sport, leisure, and recreational experiences, Jennings (2007) argues “some people may participate in scuba, snorkelling, or free diving as an occasional recreational activity, whereas others pursue ongoing and regular involvement for the purpose of sport and leisure” (p.129). Similarly, scuba dive tourists are likely to be different from other typical tourists who just enjoy the sea, sand, and sun, scuba divers are more dedicated and involved (Ince & Bowen, 2011). Ince and Bowen (2011) state:

It is best described as their preferred activity – that they engage in while on vacation – and is a very special interest with a high degree of dedication and involvement. But for other tourists, it is just an extension of sun, sand, and sea tourism. (p.1769).

2.2.1 What is SCUBA diving?

The word SCUBA is an acronym that stands for Self-Contained Underwater Breathing Apparatus (Orams, 1999). In 1943, Jacques Cousteau and Emily Gagnan invented the first and safe prototype device for deep diving (Jennings, 2007). In 1960s, due to the increasing of scuba diving recreational activities, the Professional Association of Dive Instructors (PADI) was established as an institution that provides scuba education services (Jennings, 2007). In fact, the advancement of technology may have contributed greatly to the invention of modern sport equipment supporting the rise of water-based recreational activities. The single most important invention as a result of the influence of technological development is the discovery of SCUBA and because of this invention, it does not just allow human to breath underwater, but more importantly it offers humans accessibility to the marine world (Orams, 1999).

Prior to be eligible as a scuba diver, a diver has to take a training course which has to be provided by a formal scuba dive training centre. According to PADI (2015), there are three important phases to receive a scuba certification. First, it requires knowledge

development about scuba diving. In the first phase, there are key principles of scuba diving such as aspects to be considered in planning dives, choosing the scuba gear, and key signals procedures in diving. After obtaining this knowledge, the second phase is the confined water dives. This is the phase that covers fundamental scuba skills. These skills include setting up scuba gear, using a mask, entering and exiting the water, buoyancy control, how to navigate underwater, and some other safety procedures. Lastly, it finishes off by doing in an open water dive. Scuba dive learners will apply essential skills learned from confined dive (usually in a pool) to dive in an open water environment. The last phase takes about two days or three days.

2.2.2 Demand and supply of scuba diving

There is a consensus that the number of dive-certified tourists has been increasing every year. There are almost one million newly certified divers per annum that have become active divers from 2001 (Lew, 2013). According to PADI statistics in 2015, there are more than 23 million diver certifications globally since records began in 1967. In the last 16 years, PADI has issued at least 900,000 diver certifications each year. These certifications have been issued to divers in more than 200 countries and territories around the world (Lew, 2013). Due to the increase in demand, this organisation has established its own retailers in resorts in more than 160 countries and territories around the world.

Not all regions can offer scuba diving services due to some conditions. Climate is seen as one of the major conditions. Recreational scuba diving activities are popular in tropical coastal and island nations where warm waters with high visibility and attractive biological features offer enticing diving environments (Inglis, Johnson & Ponte, 1999). Further studies in addition to Inglis and his research team, have also emphasised that

tropical weather countries have a great advantage in attracting scuba dive tourists from cold climate countries (Davenport & Davenport, 2006; Wongthong & Harvey, 2014).

Another main condition of providing scuba diving services in a territory is the presence of marine life. Coral reefs, regarded for their beauty and colourful diversity, provide significant services to local communities and dive tourists (Barker & Roberts, 2004). Studies have shown that diving to see coral reefs under the sea has become a crucial part of the global tourism market (Dimmock, 2007; & Garrod & Gössling, 2008). Hence, substantial growth of scuba diving tourism has led to an increase in popularity of holiday destinations near coral reefs (Cope, 2003).

Technology plays a very important role in scuba diving tourism. The advancement of technology has substantially influenced the development of dive tourism, inventing more efficient and safer marine equipment and transportation (Musa & Dimmock, 2013). The combination of technological developments in dive equipment and trends in natural resource preservation offer great opportunities for humans attracted to underwater seascapes (Dikou & Troumbis, 2006).

2.2.3 SCUBA dive destinations

The most popular scuba diving destinations can be seen consistently in many publications. These destinations are the Great Barrier Reef in Australia, the Red Sea, East Africa, the Mediterranean, the Caribbean, Hawaii, the Pacific Islands, Thailand, Malaysia, the Philippines, Micronesia, and the Maldives (Cope, 2003; Gormsen, 1997; Hall, 2001; Ince & Bowen, 2011; Thia-Eng, 2006; Wikinson, 1996; Wong, 1998). Although tropical climate countries provide ideal diving settings, dive tourism has only recently been explored in Southeast Asian nations, for example, in Malaysia (Daldeniz & Hampton, 2013), Thailand (Asafu-Adjaye & Tapsuwan, 2008; Wongthong & Harvey,

2014), and the Philippines (Fabinyi, 2008; Kuklok, 2012). In addition, some islands located in the Coral Triangle have been attracting many scuba divers as well as a number of research studies (Charlie, King & Pearlman, 2013; Fabinyi, 2008; Fabinyi 2010). For Cambodia, by contrast, while the country is rich in marine resources, especially coral reefs (Bochove et al., 2011) that can provide key diving attractions, research on dive tourism has been neglected. Therefore this research, to some extent, can fill this gap and add to the body of literature exploring dive tourism in tropical Southeast Asia.

Currently Cambodia offers scuba divers a limited selection of dive sites. Not to mention that the easily and quickly accessible dive sites have been damaged in the past and still today many dive sites are suffering from sedimentation and siltation causing bad visibility at times. This is also caused by large fishing trawlers that destroy and lift up the substrate that they trawl over. However, the dive sites around Koh Rong Island and Koh Rong Samleom Island have improved over the last few years. Anchor damage has been less predominant due to education and implementation of mooring buoys for scuba dive centres to use when visiting these sites.

The dive sites currently on offer, provide divers generally the same environment, but in different locations. With the same marine species generally found on all the reefs around Koh Rong and Koh Rong Samleom Island; the depth varies between five metres to 25 metres and is usually a sloping reef off an island. When divers head out a bit further south to the islands of Koh Tang and Koh Prins, they start to see an increase in visibility which makes these islands a great place to go diving in Sihanoukville. Coral reefs are healthier than other dive sites and a greater biodiversity of marine species can also be found there.

2.3 Experience and satisfaction in tourism

There is a large volume of published studies describing experience and satisfaction in tourism (Danaher, & Arweiler, 1996; Oliver, 1980; Fuchs & Weiermair, 2003; Kozak & Rimmington, 2000; Prebensen & Foss, 2010). Consumer satisfaction is the result of a comparison process between original expectations and perceived performance (Oliver, 1980). An outcome of this comparison process is called “a post consumption evaluative judgement” (Yüksel, 2001, p.1555). Due to inseparability of production and consumption of particular services, evaluation can be made during consumption or post-consumption (Ince & Bowen, 2011). Consequently, consumer satisfaction in the tourism industry can be seen as a process or a final state (Ince & Bowen, 2011). While tourist experience is evaluated as a process between production and consumption, it can be claimed that tourists are active players in the last link of the production chain (Andersson, 2007). To measure tourist satisfaction, Tribe and Snaith (1998) investigated the way tourists evaluate tourism attributes. Researchers claimed that when the evaluation of tourism attributes exceeds the tourist’s expectations, then the tourist is satisfied. The evaluation of tourists can be shown through their favourable impressions or unfavourable impressions about destination attributes.

Research into tourist experience has explored the concept of ‘flow’ where some claim that the involvement and concentration in tourists activities produce a high level of enjoyment consistent with this concept (Csikszentmihalyi, 1990). Tourists obtain flow experience once their particular skills are matched with challenges of an activity, and it can be produced as an outcome of a particular recreational or tourism activity (Jackson & Marsh, 1996). Yacht tourism for example, depends mainly on “tourism skills”, and these skills are derived from the accumulation of new experiences and sharing conversations with other fellow sailors (Andersson, 2007).

Csikszentmihalyi's (1990) flow experience is consistent with Maslow's (1965) highest hierarchy of human needs. That is, self-actualisation is the highest need that Maslow (1965) has developed and from this concept Csikszentmihalyi (1974) was interested in intrinsic motivation as well as peak experience. Then, by developing the work further of the nature of peak or self-actualisation experience, he finally developed the idea of 'flow experience' (Jennings, 2007). In the definition of the flow experience, he describes "flow refers to the holistic sensation present when we act with total involvement" (Csikszentmihalyi, 1974, p.58). With regards to the flow experience, Ryan (1995) argued that this concept can be applied in tourist activities; and thus, this concept can help researchers to understand a key factor that contributes to a satisfactory holiday experience. Orams (1999) believes the "flow experience" can be applied into marine tourism as he states:

These ideas of 'peak experience' or being 'in the flow' and having a need for feelings of competence are of interest in the marine situation, because most marine recreational activities contain an element of challenge and risk and it is obvious that this is part of the attraction for participants. (p. 33).

Another two important aspects that can lead to tourist's satisfaction are the opportunities for "learning" and "socialising" (Li, 2000; Orams, 1999; Pearce, Morrison & Rutledge, 1998; Prebensen & Foss, 2010; Winkle & Lagay, 2012). Learning while travelling and a chance to socialise with other people can be seen in some of the tourism literature. For example, Pearce, Morrison and Rutledge (1998) claim that tourists have their own motives in travelling. Some of those motives include the motive to experience the environment from which tourists are motivated to learn about the natural environment both blue (nautical) and green (landscape). Then, a motive to meet local people from which tourists want to understand local culture and the host country. Another motive is to enhance their family life. Some tourists who go on holiday are those who want to integrate and solidify the function of family (Pearce, Morrison & Rutledge, 1998).

Another similar motive is to be respected and earn social status. This refers to post-modern tourists who are looking for social value and identity. Lastly, some tourists are motivated in pursuing special interests and skills which can be seen in examples such as scuba-diving, fishing, golf and surfing. These specific skills in leisure and tourism are some of the main focuses of holiday experiences.

Furthermore, tourist satisfaction can be argued as a fulfilment of a number of personal needs. These needs can be started from the needs for pleasure to the needs for searching for meaning (Li, 2000). Li (2000) also argued that travelling can lead people to gain personal growth and development. It is important to ask why people want to gain particular experiences while travelling. According to Li (2000), traveling can lead to gaining education for an individual, bringing about a positive effect on their personal career, mind broadening through travel, satisfaction enhanced by learning, and fulfilment of personal needs.

In addition, while tourists' experience may be to learn about the natural environment or the desire to see "over the horizon", marine tourists, however, may be motivated to see "under horizon" (Orams, 1999). Such motivation to travel to marine destinations may not only develop their skills in challenging activities, but also the opportunity to satisfy curiosity through exploring the marine environment. Orams (1999) states: "The desire to see what is 'over the horizon' (or perhaps in the marine situation what is 'under the horizon') may be an important reason why individuals undertake exploration-based activities such as sea-kayaking, scuba diving, snorkelling and yacht cruising." (p.32).

It has been argued, however, that tourists' experience is not derived from a single reason, rather that tourist's experience is derived from the accumulation of various attributes. Prebensen and Foss (2010) have demonstrated that tourist experience and satisfaction sometimes does not come only through tourism attributes at the destination.

They have indicated that tourist experience and satisfaction can be achieved through coping and co-creating of the tourist themselves in various situations and with other people while travelling. The finding is consistent with findings of past studies by Mossberg (1995), Ap and Wong (2001), and Arnould, Price and Zinkhan (2002), which emphasise that tourist experience and satisfaction can be derived from participation of the tourist themselves and interpersonal interaction. They have noted that front line personnel in host destinations such as tour guides play a key role in co-creating a memorable experience atmosphere in tourism consumption. In addition, guest and guest interaction and relationships also show significance for consumer experience (Grove & Fisk, 1997; Lehtinen & Lehtinen, 1991; Ryan, 1997; Zeithaml & Bitner, 2003). The above findings have led to the conclusion drawn by Prebensen and Foss (2010, p.56) that "tourist meets and mingles with hosts and guests in various atmospheres and physical surroundings, which influence the tourist experience". In short, tourists seek pleasure and flow. They approach a variety of events and situations to match their travel motivations such as learning and socialising (Prebensen & Foss, 2010).

In review of the aforementioned body of literature, the researcher believes this research study can take aspects from theory and these concepts and explore their relevance to scuba diving the tourism experience in Cambodia.

2.4 SCUBA dive tourist experience and satisfaction

While many previous studies have concentrated on the experience of tourists few have focused on scuba dive tourists (Ince & Bowen, 2011; MacCarthy, O'Neill, & Williams, 2006; Musa, 2002). These limited number of studies are reviewed briefly below:

A study of scuba diving satisfaction was carried out by Musa (2002), who employed 29 variables in questionnaires and those variables covered main components such as the

beauty of natural environment, activities, services and facilities, most of which were similar to investigations done by Tabata (1992), and Lim and Spring (1995). Some of the key scuba diving attributes identified were; marine life, friendly/helpful staff, social interaction, visibility, easy dive access, professional and efficient dive instructors, underwater geological formations, and coral reefs (Musa, 2002). These scuba diving attributes have become interesting sub topics explored in subsequent research. Musa (2002) states that social aspects, such as meeting new people and the opportunity for making friends, can have substantial influence on diver satisfaction. MacCarthy, O'Neill and Williams (2006) also found that satisfaction of diving can be derived from sharing experiences and lifestyles with other divers. These findings are consistent with later research done by Carter (2008) who also states satisfactory dive experiences can be gained through socialisation, such as via buddy relationships, as well as from staff efficiency and friendliness.

Musa (2002) found that visibility is a significant contribution to the scuba dive tourist experience. "If visibility worsens, visitor satisfaction and probably the sustainability of the dive operations in Sipadan will be compromised" (Musa, 2002, p.203). For this reason, it has been argued that one of the key factors that can cause satisfactory or dissatisfactory experiences in scuba diving is the quality of the diving itself (MacCarthy, O'Neill & Williams, 2006). Hence, the visibility, diversity of marine life, and the presence of charismatic and/or rare species are key factors that can contribute substantially to a satisfactory scuba diving experience (MacCarthy et al., 2006; Musa, 2002).

Other research has shown a preference of dive tourists for a 'wilderness' type of experience. That is, an experience based in high quality marine ecosystems which are natural and have few detectable human influences (Davis, Banks & Davey, 1996;

Tabata, 1992). Divers prefer high water quality, an interesting marine geological environment and a high diversity of marine flora and fauna as priorities over cost, boat design, and other human factors (Tabata, 1992).

A number of studies have identified marine life as a major factor contributing to satisfactory experience. For example, O'Neill, Williams, MacCarthy, and Groves (2000) emphasised that beautiful marine life such as fish, shellfish, coral reefs, etc., are important aspects of most marine recreational experiences. They also mentioned that other factors such as clear water, safety and security, and an enjoyable environment with healthy marine habitats are all parts of an enjoyable experience. In addition to this, a satisfactory dive experience can be influenced by interest specialities (Ince & Bowen, 2011). For example, the learning of and use of underwater cameras, has become an increasing specialist interest for scuba divers whereby 'wilderness types of experience' or 'wilderness feelings' are captured via photography or videography during the dive (Davis et al., 1996; Gazy et al., 2004).

Another important factor that can determine dive tourist satisfaction and experience is the role of marine tour operators (Aiello, 1998). Aiello states provision of a wide range of activities by the tour operators is very important influence on the satisfaction of divers. Aiello (1998) identified that during a dive trip, the tour operator can have a major influence on satisfaction through the provision of activities such as giving customers opportunities to relax, snorkel, swim, learn about the marine environment through guiding, and sometimes offering slide presentations. Thus, satisfaction with a scuba diving trip may not entirely dependent on the dive experience alone.

Recent evidence suggests that tourists have various expectations to participate in recreation activities (Meisel & Cottrell, 2004). Tourists who engage in the same activities sometimes look for different outcomes. With regards to scuba dive activities

for example, divers who have less experience more often concentrate on the diving itself, while those who have more experience are more likely to focus on other benefits associated with diving, such as making new friends and sharing experiences (Meisel & Cottrell, 2004). Furthermore, many researchers have argued in their studies that female tourists are more likely to achieve overall satisfaction than male tourists (Musa, 2002; Rubenstein, 1980; Ryan, 1995).

Because scuba divers have different motivations and experience, research has been performed to distinguish between different types of divers (MacCarthy et al., 2006; Rice, 1987). These two studies categorised divers into three types: '*Hard core*' divers are those who search for challenges of diving in different destinations. '*Tourists*' are those who set scuba diving as a part of vacation. Finally, '*potential divers*' are people who want to learn or try something new. Scuba divers were also classified by Ince and Bowen (2011) who argued that there are four types. They are 'experienced', 'specialist', 'dedicated', and 'involved divers'. These categories of scuba divers are based on the skill levels that each specific scuba diver has. This is consistent with Orams' (1999) claims that marine tourists hold various skill levels to undertake various marine recreational activities such as scuba diving and snorkelling. Those tourists will match their skill levels to the levels of challenge or risk that they undertake. In comparison to the '*hard core diver*', for example, the '*potential diver*' has fewer skills and is less experienced. Likewise, the categories of scuba divers proposed by Ince and Bowen (2011), have various skill levels.

In brief, in a review of the aforementioned literature, it is crucial to look at those important findings carefully so that those findings can be applied into the current study that focuses on scuba diving experiences.

2.5 Cambodia tourism

Cambodia is located in the Southeast Asia region. It is bordered by Thailand in the west, Vietnam in the east and north, and with Laos PDR in the south. Possessing a cultural complex of Angkor Wat World Heritage Site and a wide range of nature, Cambodia is rich in cultural and natural resources, forming major tourism attractions for the country (Chen, Sok & Sok, 2008). The tourism industry in Cambodia has increasingly been playing an important role in contributing to the development of the socio-economics of the country (Kaynak & Kara, 2012). Due to rapid development of infrastructure, tourism in Cambodia has gained benefits from the general development of the country and it has been regarded as one of the major contributors to the gross domestic product (GDP) (Chen, Sok & Sok, 2008).

There are a number of research studies about tourism in Cambodia that have been carried out so far, but none of them focus on marine tourism. For instance, a study of world heritage tourism of Angkor Wat (Winter, 2006), dark tourism of the Cambodia killing fields (Hughes, 2008), Cambodia tourism competitiveness (Chen, Sok & Sok, 2008), and tourism impacts in Cambodia (Kaynak & Kara, 2012).

In 2013, Cambodia received 4,210,165 international tourist arrivals, an increase of 17.5 per cent compared to 2012, and earned 2,547 million USD in tourism receipts (Ministry of Tourism, 2013). Seeing the importance of this growing industry, the government of Cambodia has formulated the 'Tourism Development Strategic Plan 2012-2020' (Royal Government of Cambodia, 2012) and has identified coastal and marine tourism as one of the main priorities. However, coastal and marine tourism is poorly researched and documented in Cambodia. For this reason, the research presented in this thesis can contribute significantly to building an improved understanding and adding to the scant literature on marine tourism in Cambodia.

2.5.1 Cambodia coral reefs

Cambodia possesses 435 kilometres of coastline located in the west of the country. The Cambodia coastline is in the north-eastern Gulf of Thailand in the China Sea. The coastline of Cambodia covers extensive forests and a lot of bays and beaches with numerous offshore islands. This coastline comprises of four provinces, which are Kep, Kampot, Koh Kong, and Sihanoukville. Sihanoukville is the largest town along the coastline that has an international airport, an international deep seaport and it is one of the major economic centres in Cambodia.

Cambodia has 64 islands providing homes for rich marine biodiversity (ICEM, 2003). The coastline of Cambodia is rich in coral reefs, most of which are fringing reefs (Bochove et al., 2011). These fringing reefs are found to be an important shelter for various fish species and other marine life that thrive in coral reefs and surrounding ecosystems (ICEM, 2003). Research on these reefs has shown not only its biological importance but that these marine species provide socio-economic value and ecosystem services to local communities such as supporting fisheries, helping coastal protection, and offering tourism development opportunities (Kim, Chou & Tun, 2004).

Furthermore, livelihoods of local communities who have been dwelling in this coastline depend mainly on marine resources; and thus, coral reefs are regarded as a very significant asset to the welfare of the country (The World Bank, 2007; Yeang, 2009).

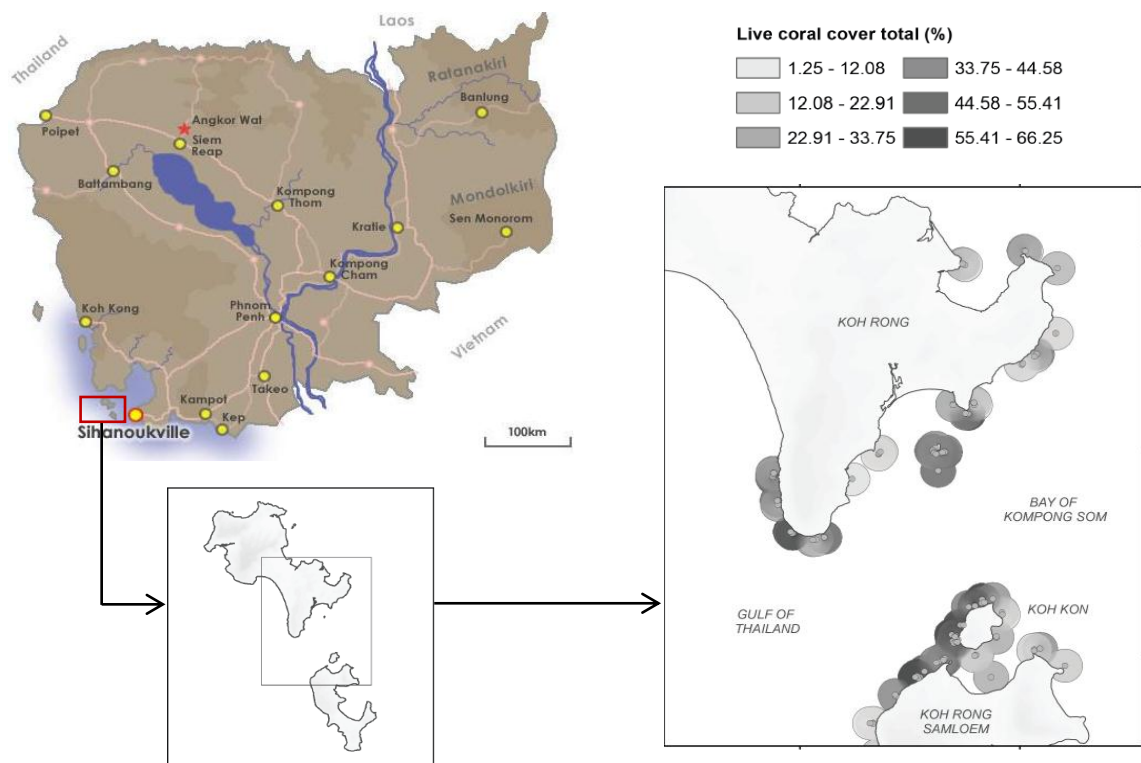


Figure 2.1: Maps of live coral covered areas in Sihanoukville

(Source: Redrawn from Bochove et al.,)

Research by Bochove et al., (2011) has investigated the status of the coral reef in Sihanoukville. The status of coral reefs in two most accessible and important locations in Koh Rong Island and Koh Rong Samloem Island were under investigation. Rock, sand, and live hard coral reefs were found as the dominant benthic substrates in this block of islands. The study has shown an approximate 40% coverage by live coral. Mean hard coral and soft coral were also found in these locations although they are lower than live hard coral type. There are a variety of fish species that were identified such as butterflyfish (Chaetodontidae), parrotfish (Scaridae), snapper (Lutjanidae), sweetlips (Haemulidae).

In addition to these types of fish, the research shows a number of other interesting marine species at the site (Bochove et al., 2011). Sea urchins were observed almost everywhere and the density of this species is relatively high. Giant clams were found in many areas and their density was also high. The area is home to few sea cucumbers (Holothuria), and also a few lobsters (Palinuridae). Crown-of-thorns starfish are relatively rare in this group of islands.

Coral reefs are very important marine resources for coastal communities, however the awareness about this ecosystem is very little because there is lack of research (Touch, n.d). Touch (n.d) states that coral reef locations in Sihanoukville are actually not completely identified. While main sites of these marine species can be found in Koh Rong and Koh Rong Samleom, coral reefs also exist elsewhere. Most of coral reefs in Sihanoukville have been growing in estuaries and around islands such as Koh Rong, Koh Rong Samleom, Koh Poh, Koh Tres, Koh Chanlus, Koh Krobei, Koh Rusei, Koh Takiav, Koh Sromauch, Koh Thah, Koh Seis, Koh Tapring, Koh Thmey, Koh Tang, Koh Puoluo Vey, and Koh Kun Dor (Touch, n.d).

2.5.2 Sihanoukville tourism

Tourism activities and facilities in Sihanoukville are centered along beaches that tourists can reach in about a five-minute drive from the city centre. The city centre is a core provincial centre comprising of banking activities, markets, travel agencies, tour operators, medical clinics, and real estate services. All beaches in Sihanoukville are located near the city centre such as Victory Beach, Independence Beach, Sokha Beach (privately owned), Serendipity Beach, Ochheuteal Beach, and Otress Beach.

In 2014, Sihanoukville received 1,327,748 tourist arrivals, a 28 per cent increase compared with 2013 (Department of Tourism, 2015). The number of tourist arrivals

included 358,639 international tourists, an increase of 19 per cent compared with 2013 and comprised of 140 nationalities. There are three types of transportation that tourists can take to reach Sihanoukville; via cruise ships (21,292 tourists from 32 ships), aircraft (25,327 tourists from 463 flights), and by land via the national highway from Phnom Penh, and some tourists travelled from Thailand by crossing the international border in Koh Kong province.

The provincial Department of Tourism (2015) reported that Sihanoukville is a tourism destination attracting more Western people. In 2014, the top ten tourist nationalities visiting this coastal area were Russian, Chinese, French, Vietnamese, English, American, Australian, Canadian, South Korean, and Italian. Among these nationalities, French, Canadian, and Italian are the top three and their growth rates are relatively high. For instance, Canadian and Italian tourists increased 27.94 per cent and 44.67 per cent respectively in 2014.

The Department of Tourism states that in 2014 there were 56 hotels (2,792 rooms) and 221 guesthouses (2,883 rooms) in Sihanoukville. The whole area had 43 tour boats, a mix of domestic and foreign-owned boats. There were 24 travel agencies and 92 restaurants. These agencies and restaurants are mostly family run; however, approximately 30 per cent of tourism businesses in Sihanoukville are foreign-owned (Ong & Smith, 2014).

2.5.3 SCUBA diving in Sihanoukville

The coastal sea of Sihanoukville is rich in marine flora and fauna, especially in fringing coral reefs (Bochove et al., 2011). Based on Orams' (1999) and Garrod and Gössling's (2008) claims, the presence of these marine resources provide opportunities for developing scuba diving tourism. Sihanoukville province consists of Ream National

Park covering 210 square kilometres and 30 per cent of this area is a marine park (Ong & Smith, 2014). Within this marine park, an approximate 10 species of dolphins were sighted by local boat operators, but there is no any formal document from the government agency indicating the presence of dolphins in the park. Although, this marine park is located in the Sihanoukville province, it is quite far from the city centre and there is no dive operator that offers regular scuba diving services there (although they will undertake a special trip by request). However, the marine resources that exist in the wider Sihanoukville coastal zone provide a wide range of marine-based recreational activities and water sports along white sandy beaches, particularly scuba diving, snorkelling, and fishing (Ong & Smith, 2014).

As yet, no research has undertaken on scuba diving in Cambodia. It is crucial that research should be carried out in this field. While coastal tourism continues to grow in the country, management actions (or inaction) are occurring in the absence of any empirical research. As a consequence, the research presented in this thesis has been conducted to explore the experiences and satisfaction of dive tourists in the Sihanoukville province and provide the first insights into this growing aspect of the tourism industry in the area.

Chapter 3 Research Design

Research in the social sciences typically involves a study about humans (or a particular group of humans) and surrounding environments where they live and evolve (Biesta & Burbules, 2003). Research in tourism, for example, “is highly dependent upon deriving information from tourists as a specific population type, often to assess a wide range of issues, though commonly associated with attitudes to tourism, behavioural issues related to their activities and consumer-related preferences” (Orams & Page, 2000, p.137).

Social science research has become progressively more interdisciplinary, complex, and dynamic and researchers are using an increasing range of techniques to undertake their work. By utilising diverse methods, researchers may combine techniques to provide the most appropriate approach to answering certain research questions. Accordingly, moving beyond a simplistic dichotomy of quantitative versus qualitative research methods, it has been recognised that mixed methods research including combinations of both quantitative and qualitative techniques, is important and useful for research in social sciences. In the mixed methods research process, researchers may perform quantitative and qualitative data collection in one phase, then they mix or link both types of data in the analysis, interpretation, and discussion of the results (Tashakkori & Teddlie, 2003; Creswell, 2009).

In responding to the long-lasting debate over the advantages and disadvantages of quantitative versus qualitative research methodologies, mixed methods research has been introduced to research in the social sciences. In contrast to the comparison of which method is better, Feilzer (2010) claims that mixed methods research provides a combination of quantitative and qualitative research strategies. Hence, the integration of the two research methods into ‘mixed methods’ has been called a legitimate research paradigm known as pragmatism.

To explore the experiences and satisfaction of dive tourists, this study employed a pragmatic mixed methods approach using both a quantitative and qualitative research techniques. The researcher explored the demographic characteristics of dive tourists such as their nationality, age, educational background, income, and travel patterns. To obtain such data, the researcher conducted a survey by using a self-reply questionnaire aiming to gather the information about demographic characteristics of scuba divers as well as their perceptions towards scuba dive tourism in the study area. Surveying is one of the most commonly used research instruments for collecting data in tourism research. However, because the researcher also wanted to investigate the experiences and satisfaction of dive tourists and the views of key brokers in the dive tourism businesses, an additional approach, using a semi-structured interviews was also included. This approach helped the researcher obtain more in-depth data on the personal experiences of scuba divers as well as insights from other key stakeholders such as dive instructors, dive managers and boat operators.

This chapter outlines the research paradigm which guided this research and details each method that was used to collect quantitative and qualitative data. Finally, this chapter provides an overview of range of techniques that were used to analyse the data.

3.1 Research paradigm

This research study follows the philosophy of pragmatism as a research paradigm. Based on the concepts of , a pragmatic approach to social science research sidesteps the controversial issues of determining truth and reality and opens up the possibility of empirical inquiries – looking for answers to a particular question in the real world. Pragmatism provides an alternative worldview to those of positivism or post-positivism and constructivism and focuses on a question to be answered and the consequence of the research. In addition, pragmatism is one of the research paradigms which focuses on

problem solving in the social world and provides an alternative, and more flexible approach to research design and the application of research methods.

Accordingly, Johnson and Onwuegbuzie (2004) stated that pragmatism is a philosophical partner for mixed methods research. They claimed that mixed methods research should utilise a philosophy and a method in order to supplement the insights offered by quantitative and qualitative methods into a workable solution. One of the main reasons that it is the most appropriate approach for this study is because it can best answer the specific research questions. As such, a pragmatic approach used in this study has served to guide the researcher to accomplish the research. It has been argued that each quantitative and qualitative research method has strengths and weaknesses. Being aware of this, Johnson and Turner (2003) posited the fundamental principle of mixed research where they believe the understanding of quantitative and qualitative research methods' strengths and weaknesses can put researchers in a position of combining both strategies.

For this research study, the researcher aimed to investigate the experiences and levels of satisfaction of dive tourists in a setting where research participants are exposed to the open environment and related challenges. This is because the research was based in the marine environment where variables such as weather conditions, underwater visibility, tides and currents, water surface conditions (waves) and temperature (water and air) are all likely to influence dive experiences. In such scenarios a pragmatic research paradigm has been regarded as best suited because it offers flexibility. For example, claims that a pragmatic research paradigm is open to shifts and changes by being adaptable to unpredictable occurrences and events. Having said that, the researcher was very flexible in his approach to the investigation, and addressed a number of unforeseen problems

that arose in the research process. To conclude, a pragmatic approach as a research paradigm is the most appropriate for this study.

3.2 Research methods

3.2.1 Self-reply questionnaire

A common research instrument used in data collection for tourism research is self-reply questionnaires (Orams & Page, 2000). The self-reply questionnaire is one of the most popular social science research techniques in which respondents read and fill out a range of questions by themselves (Veal, 1992). Fundamental features that make self-reply questionnaires popular include the ease of administration and comparatively low cost compared to other research instruments (Veal, 1992). The administering of questionnaires is the primary source of data collection for this tourism research (Smith, 2010). This is because the use of questionnaires can solicit detailed information on a group of respondents. Thus, if the researcher uses a proper design and correct administration, self-reply questionnaires are an effective research instrument for gaining in-depth data about tourists (Orams & Page, 2000).

However, it has been argued that this technique has its limitations (Orams & Page, 2000). There are actually many researchers who agree that inaccurate results will be produced if the questionnaire is poorly designed and administered (Smith, 1990; Babbie, 1995; Ryan, 1995). For this reason, a review of relevant literature has been completed to examine issues that can occur with the use of a self-reply questionnaire and to establish best practice to guide the design and administration of the self-reply questionnaire used in this research (e.g. Babbie, 1995; Ryan, 1995; Frazer & Lawley, 2000). There are two significant aspects of the self-reply questionnaire consistently found in the literature and these are focused on first, the structure of the questionnaire

and second, the content of the questionnaire. It is suggested careful consideration be given to these issues which can potentially influence the data collection. Authors also suggest it is important to seek to minimise the bias and erroneousness that can be produced by a poorly designed research instrument.

Although some researchers prefer to develop many questions in a questionnaire to gain a great quantity of information, too long a questionnaire may consist of inappropriate or repetitious questions and these questions may produce data that cannot be used. It has been said that “a large number of questions produce a long questionnaire which reduces response rates and results in respondents making less effort when answering questions” (Orams & Page, 2000, p.131). Furthermore, a long questionnaire is frequently not answered in full (Yammarino, Skinner, & Childers, 1991). For this reason, questions in the questionnaire should be straightforward and directly relate to the research’s aims and objectives.

Respondents such as tourists, have various backgrounds and so they may respond differently to the same set of questions. Therefore, Orams and Page (2000, p.132) suggest in designing a self-reply questionnaire that the following are some important considerations:

- Questions should be relevant to respondents’ experience.
- Respondents should have the information requested.
- Respondents should have opinions, attitudes or beliefs about the issue the question asks.
- Respondents should be capable of expressing this information, or these opinions, attitudes or beliefs.

In brief, it is crucial to have well-designed and standardised questionnaires for this research instrument to have validity and reliability. The researcher should design the

questionnaire carefully to ensure the data obtained will meet the research's objectives and that respondents understand the wording and the structure of the questionnaire. It is also important to test drafts of the questionnaire assess its validity (Smith, 2010).

To conduct the research presented in this thesis, the researcher followed the above principles and designed a self-reply questionnaire that consisted of four main parts (see Appendix 1). The first was straight forward, asking dive tourists about their experiences and satisfaction with their trip. For example, the first question that divers were asked was: *"How satisfied are you with your diving trip in Sihanoukville?"* To answer this question, the respondents could choose an option from a Likert-type scale ranging from *very satisfied* to *very dissatisfied* or *don't know*. The second part of the questionnaire assessed respondents' travel patterns such as their length of stay, primary place of residence and the number of times they have dived in Sihanoukville. The third part was related to respondents' demographic characteristics such as: gender, age, income, level of education, and nationality. The final part involved open-ended questions where the researcher offered an opportunity for respondents to share or criticise anything during their visit.

In summary, the self-reply questionnaire used in this research consisted of two pages of 21 questions including closed and open-ended questions (see Appendix 1).

A randomly selected sample of dive tourists (n=200) was initially targeted to complete the self-reply questionnaire. However, there were only 147 respondents who completed the self-reply questionnaire. The lower than targeted sample size was due primarily to weather conditions, particularly rain, which reduced response rates. Due to delays in obtaining the required approvals from the AUT human Research Ethics Committee, the data collection occurred one month later than planned. This meant that data collection over-lapped with the rainy season and, as a consequence, weather influenced data

collection. During the three-month period, of data collection, the researcher stayed in the Sihanoukville province and travelled back and forth to the islands to collect data.

Koh Rong Island and Koh Rong Somleom Island were the two islands in the research location (see *Figure 1.1*).

3.2.2 Sampling approach

Before approaching respondents, the researcher met with a director of the Department of Tourism, based in Sihanoukville, and brought along two permission letters; one from the researcher's primary supervisor and one from the Cambodian Ministry of Tourism. In the meeting the researcher obtained permission to conduct the research and information regarding the current status of scuba diving tourism as well as a number of diving operators in the study area. Once the researcher had all the relevant information about potential respondents, the researcher arranged to meet those marine operators to invite them to participate in the research.

There are four main scuba dive operators in Sihanoukville, all of which are PADI affiliated. Three of them expressed their willingness to cooperate in the study, while one dive company declined to be involved in the research.

The researcher used a simple random sampling technique to recruit respondents for the survey. Based on Singleton and Straits' (2010) explanation of this technique, every dive tourist, who had completed their dive activities has an equal chance of being selected in the sample. Before deciding on the best way to get divers to complete the questionnaire, the researcher tried a number of different approaches in order to adapt the recruiting procedure to the characteristics of the dive tour. First, the researcher explored having respondents fill out questionnaires on the boat during the diving trip, however, this proved to be very inconvenient for the divers since they were wet and the movement of

the boat (all dive boats used are relatively small in Sihanoukville) meant completing the questionnaire was difficult.

The researcher then tried waiting for divers at the pier. Once dive tour boats arrived back at the pier after completing a diving trip, the researcher approached divers before they disembarked from the boats. Even though some of the divers agreed to fill in the questionnaire, some of them refused whilst others left the questionnaire incomplete. Thus, this approach was also ineffectual.

Finally, an effective technique to approach divers to fill in the questionnaire was trailed and proved more successful. The researcher waited for divers after they had disembarked the dive tour boat at the dive company offices. This proved more effective because every diver had to come to the company's office to get their diving book stamped (see more diving experiences in Chapter 4: Findings). At this time divers were dry, had more time and were in a location where completing a questionnaire was comfortable and convenient. Since a simple random sampling technique was used, the researcher approached every diver to complete a self-reply questionnaire.

For each invitation to participate in the research the researcher introduced himself and the purpose of the research. Then each potential respondent was given the Participant Information Sheet (PIS for self-reply questionnaire – see Appendix 5), however, most of them did not spend time reading it. Nevertheless, by agreeing to fill in the questionnaire, the participants showed their consent to participate in the research. While the self-reply questionnaire sample was randomly selected, the face to face semi-structured interviews were purposively sampled. The purposive sampling approach was based on researcher's observation on the clarity and completeness of filled questionnaires.

3.2.3 Sample size

The validity of a sample size of 147 is difficult to assess in this study setting. While the Department of Tourism (2015), claim there were 39,466 international tourist arrivals to the island of Sihanoukville in 2014, there are no data on the number of scuba divers in the area. As a consequence, there are no accurate data on the population of scuba divers visiting the site. Thus, it is not possible to assess the representativeness of the sample for this study. This limitation needs to be considered when interpreting the results of this research and caution needs to be applied when making inferences regarding all scuba dive tourists visiting the area.

Despite this limitation, the sample size of 147 was randomly selected and can provide some insights, in an exploratory sense, with regard to the experiences and characteristics of scuba divers in Sihanoukville. It is also worth noting that there were only two to five divers onboard each dive tour boat per trip and, as a consequence, the sample represents a total of 45 dive trips over a three months period.

3.2.4 Questionnaire testing

Previous research has confirmed the importance of pre-testing and a pilot study in collecting data, especially in relation to the use of a self-reply questionnaire (Fowler, 1992; Orams & Page, 2000). The purpose of the pre-test is to help the researcher to decrease non-response rates as well as to increase the validity of the research tool (Oppenheim). Furthermore, for research that employs a self-reply questionnaire as an instrument, it is essential to have a pre-test because the researcher then has the opportunity to check for any issues that may occur (Orams & Page, 2000). For example, respondents may need some clarification such as language used in the questionnaire, technical terms, or other unclear questions.

In this research, the researcher completed a pre-test before he carried out an official data collection. Due to the low number of scuba divers in the area the researcher tested the questionnaire with five respondents. This pre-test took two days to complete. The first day, the researcher went on an island trip (the boat consisted of more than 10 tourists but there were only three scuba divers). Subsequently, the three scuba divers were invited to participate in the pre-test once they returned from Koh Rong Island. The researcher was able to complete the pre-test of the self-reply questionnaire with two other scuba divers the next day. Thus, a total of five respondents tested the questionnaire and the researcher had the opportunity to talk to them to get some feedback about the questionnaire such as language used, clarity of the questions, and the structure of the questionnaire.

By doing this questionnaire testing, the researcher learned that the overall structure of the questionnaire was sound, the language used in the questions was easy to understand, and the length of the questionnaire was not too long (two pages). As a result, the average time to complete the questionnaire was eight minutes. However, some adjustment to the graphic layout was made in accordance with the suggestions from the respondents to the trial pre-test. For example, the font size used in the questionnaire was relatively small (Times New Roman, 11) and was too condensed. Hence, the researcher adjusted the font size to Times New Roman, 12 and kept the line spacing to single only because the researcher wanted the questionnaire to remain at only two pages.

Although it is recommended to have at least two pre-tests to gradually refine the questionnaire (Orams & Page, 2000), there was only one pre-test of the questionnaire because the researcher noted there no more components that needed to be improved and thus, the study commenced using the amended self-reply questionnaire.

In brief, it was very important and useful to have completed the questionnaire testing. This helped the researcher to see essential elements of the questionnaire, its weaknesses and where it could be improved.

3.2.5 Semi-structured interviews

In addition to using self-reply questionnaires as a research instrument, the researcher also employed semi-structured interviews as a tool to collect more in-depth data. Semi-structured interviews are commonly used in social science research (Blaikie, 2010; Singleton & Straits, 2010; Buttle, 2014). In the semi-structured interview, even though interviewers have specified objectives and pre-determined main questions, the interviewers have some freedom in modifying those objectives and questions in order to allow for interviewees to co-lead the direction of the interview discussion (Buttle, 2014).

The semi-structured interview is considered one of the most effective instruments in qualitative research methods (Blaikie, 2010), and the use of conversation as a research method has a long and honourable tradition in social sciences research (Ryan, 1995). In addition, interviewing people by using semi-structured interviews is an interesting and enjoyable way to collect data (Fylan, 2005). This research instrument can be seen as more of a conversation rather than an interview because the interviewer and the interviewee can discuss further topics that do not have to be fixed to the questions set.

Semi-structured interviews are simply conversations in which you know what you want to find out about – and so have a set of questions to ask and a good idea of what topics will be covered – but the conversation is free to vary, and is likely to change substantially between participants. (Fylan, 2005, p.65)

Research that is concerned with participants' behaviour or experiences is more often done by using a semi-structured interview technique because it provides a more

appropriate format for personal conversation between the researcher and the respondent (Fylan, 2005). Similarly, Cohen and Crabtree (2006) state that interviewers develop and use a semi-structured interview as an interview guide. Interviewers formulate a set of questions and topics to be covered in the interview process, but the dialogue can go far beyond the main questions to various related subtopics based on the respondent's thoughts.

To discover the experiences and satisfaction of dive tourists, the researcher used semi-structured interviews as a research instrument. The researcher formulated a set of questions, all of which were open-ended, and which asked divers about their satisfaction with their experiences in Sihanoukville. The questionnaire for the semi-structured interviews consisted of 12 key questions (see Appendix 2, 3, and 4). During the interview, other questions were raised; for example, the researcher asked a diver *'What do you like the most about your diving trip in Sihanoukville?'* A follow-up question addressed issues such as *'Why do you like this?'* or *'Why do you like that?'* The set of questions in the semi-structured interview was for general guidance; the interview could go far beyond the key questions.

In this research study, nine key informants were invited to participate in semi-structured interviews. These key informants included two dive-tour boat operators, four dive instructors and managers of the diving centres, and three scuba divers. The researcher established three separate key informant interview templates with questions relevant to each of these three key informant groups (Appendix 2, 3, and 4 presents three separate key informant questions). Although there were three separate key informant interview question templates, the overall aim of the interviews was to gain more in-depth data regarding tourist experiences and satisfaction from the perspective of the brokers of the dive tourism experiences.

Different locations were selected to conduct the interview. The researcher interviewed two boat operators on their respective boats on different days because the two boat operators work for two different dive centres. In each of these two interviews, through building a rapport, the boat captain preferred to conduct the interview on his boat as being the best place for him. Alternatively, four dive instructors and managers were interviewed in their company offices, while three selected scuba divers were interviewed in their respective hotel and bungalow. These locations were chosen to ensure the interview process proceeded smoothly whilst ensuring convenience for both the interviewer and interviewees.

Conducting semi-structured interviews with the nine key informants was enjoyable and used different approaches. Firstly, the researcher identified boat captains as important key informants for this research because the boat captains have various experiences with dive tourists during their expeditions. Before approaching these potential key informants for interviews, the researcher sought the consent of the dive tour operation business owners or managers (and provided supporting documents from the researcher's primary supervisor and a permission letter from the Cambodian Ministry of Tourism). The two boat operators were both Cambodians. The two interviews were conducted on their respective boats and each interview took about 40 minutes.

Secondly, the researcher determined that dive instructors were important key informants for this research. The researcher interviewed four dive instructors (two of them were also managing directors of the dive tour companies) to seek in-depth data with regard to their perceptions of dive customers in relation to their experiences and satisfaction. Before approaching these potential key informants for interviews, the researcher sought the consent of the dive tour operation business owner or manager (and gave supporting documents from the researcher's primary supervisor and a permission letter from the

Cambodian Ministry of Tourism). Each of these four key informants was selected from the main diving centres in Sihanoukville and the number of these scuba diving experts is relatively small because the number of dive centres in the province is still limited. The interviews were held in their respective offices and the duration of each interview varied from 20 minutes to 45 minutes.

Lastly, the researcher conducted semi-structured interviews with three purposefully selected scuba divers. Based on the researcher's observation of the clarity and completeness of the completed questionnaire as well as the willingness to participate in the study, the researcher invited three potential respondents to further participate in semi-structured interviews. Those three interviewees consisted of one domestic and two international scuba divers. Although the researcher could not approach any female scuba diver to take part in the interview, this study has a number of female divers who participated in completing self-reply questionnaires. The Cambodian diver was interviewed in an office of the dive company and the two international dive tourists were interviewed in their respective hotel and bungalow.

All the aforementioned semi-structured interviews had the same interviewing process from which the researcher followed the protocol approved by the Auckland University of Technology Ethics Committee (AUTEK 15/70). That was, at the start the researcher invited those potential interviewees to participate in the study by introducing himself and the purpose of the research. Then, the researcher handed out the Participant Information Sheet (PIS for interviews – see Appendix 6) and asked them to sign the consent form prior to the interview. Once the interviewees had signed the consent form and read the PIS (although not all did so), the researcher started to conduct the interview. The researcher informed all interviewees that notes would be taken and the conversation recorded. One of the interviewees declined having the conversation

recorded and this request was respected. Thus, all interviews except one were audio recorded and subsequently transcribed for analysis. In addition, the researcher's notes were also used as a source for data analysis.

3.3 Data analysis

The research study used mixed methods, merging both qualitative and quantitative approaches in a single investigation (Onwuegbuzie & Leech, 2005). Therefore, different methods were used to analyse the different types of data. Specifically, inferential statistical approaches were used to analyse quantitative data while thematic analysis was used to examine qualitative data.

3.3.1 Analysis of quantitative results

A basic analysis of quantitative data entails using summative descriptive statistics such as frequencies, means, and standard deviations (Weaver & Oppermann, 2000). Presenting descriptive statistics can be relatively simple and tables, graphs, and charts are common approaches (Mason, 2014). For example, the proportion of female and male divers, can be presented as a percentage and also as a chart. Quantitative data in this research involved mainly profiles of the demographics of tourists and an assessment of their satisfaction pertaining to aspects of their experiences. A range of approaches were used to present these data as recommended by Mason (2014); "in addition to converting actual results to percentages, there are a number of different charts, tables, graphs and figures that can be used to present your results" (p. 201).

For the quantitative data obtained from the self-reply questionnaires, the researcher used four key steps in data processing. These were; editing, coding, data entering, and cleaning (error checking) (Singleton & Straits, 2010). The four steps helped the researcher to check and make the data useful for analysis. The first process, for instance,

typically involved filtering and organising the data to eliminate invalid responses (Weaver & Oppermann, 2000). This was followed by the coding process whereby the researcher assigned specific numbers as values to each of the variables (Smith, 2010). Finally, the data were entered into the Statistical Package for the Social Sciences (SPSS) computer software (IBM SPSS Statistics 20). SPSS has been suggested as an effective tool for analysing quantitative data for tourism research (Mason, 2014). Once the data had been cleaned, the researcher undertook the analysis.

To measure dive tourists' experiences and levels of satisfaction, the researcher used a five point Likert scale as a tool. The researcher designed the questionnaire by using an interval scale involving the extent to which respondents agreed or disagreed with a number of statements in the questionnaire (see Appendix 1). For example, divers were asked to indicate their level of satisfaction with "the coral reef". So, they were required to circle number 5 if they were "very satisfied", "4=satisfied", "3=neutral", "2=dissatisfied", and "1=very dissatisfied". To investigate tourists' satisfaction in tourism research, Likert scale instrument is commonly used (Mason, 2014).

The researcher, furthermore, looked at relationships between dependent and independent variables by analysing cross-tabulations. The researcher examined the potential relationship between the gender of the dive tourist and their experiences and satisfaction. Thus, the research explored the claim of Meyer, Thapa, and Pennington-Gray (2002) that male divers are more likely to favour and undertake riskier diving activities (e.g. deep dives, night dives, wreck and cave dives) than female divers. This, and other issues, have been explored by an analysis using a bi-variable descriptive method where the researcher established the degree to which two variables have a particular relationship (Blaikie, 2010). The presentation of the quantitative results is usually associated with a comparison between two variables or a comparison of one

variable with other variables (Mason, 2014). A comparison between male and female respondents on a particular topic, for example, can produce different answers because gender stereotypes have different views (Mason, 2014).

Open-ended questions

There were four open-ended questions in the self-reply questionnaire of this study. The answers to open-ended questions are often adding to the information provided in closed questions and those answers often reflect respondents' opinion toward a particular issue (Popping, 2015). One of the open-ended questions in this study, for example, asks: "what should be done to improve diving experiences in Sihanoukville?" Answers to this questions were identified and groups into similar unites. Then they are coded manually by the researcher.

The study uses "coding" technique to analyse data derived from the open-ended questions. The coding technique is "the process whereby raw data are systematically transformed and aggregated into units which permit precise description of relevant content characteristics" (Holsti, 1969, p.94). Coding can be performed by humans from which the coder ought to accurately identify the responses, for example phrases that provided by respondents (Popping, 2015). After data are coded, the researcher uses a computer program (SPSS) to perform frequency analysis and interprets the results accordingly.

3.3.2 Analysis of qualitative results

Due to the fact that tourism research is a social phenomenon, a conversation is an effective form of data collection (Smith, 2010). The researcher used semi-structured interviews to explore key research questions and solicit information about a particular topic. Research that uses qualitative methods requires the researcher to summarise key

points answered by the respondents and to group similar answers (Mason, 2014). A common approach in analysing such qualitative data is to paraphrase those responses. By using transcriptions from recordings, the researcher can make notes, highlighting any key points. Then, when writing the results, the researcher can use *verbatim* quotes from these transcripts to illustrate those answers (Mason, 2014).

Thematic analysis

With regard to presenting the qualitative data, in this research thesis the researcher employed a thematic analysis, which is especially well suited to such exploratory research (Onwuegbuzie & Leech, 2005). Data obtained from the semi-structured interviews were transcribed and the researcher explained it in a narrative, descriptive way. Research instruments such as semi-structured interviews are usually transcribed and the coding is often called thematic analysis (Buttle, 2014; Whiting, 2008).

“Thematic analysis is a method for identifying, analysing, and reporting patterns (themes) within data” (Braun & Clarke, 2006, p. 6). It was common that the researcher read narrative descriptions from the interviews, but great attention was devoted to the emergence of common themes. In the analysis process, the researcher discovered a number of major themes and some concepts relevant to the research objectives. For example, the researcher found from the data set that “the overfishing near dive sites” was a dominant and important theme that substantially influenced the scuba diving experience. In the analysis of this study, the term “theme” refers to ‘a pattern that captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set (Braun & Clark, 2006). It is very important to identify which theme is important or dominant in the data set so that it can help the researcher to conduct the thematic analysis.

There are six important phases in a thematic analysis (Braun & Clark, 2006). These phases include:

- 1) Getting the researcher familiar with the data,
- 2) generating the initial codes,
- 3) searching for themes,
- 4) reviewing themes,
- 5) defining and naming themes,
- 6) producing the report.

Among these six phases the researcher found “searching for themes” as the most critical stage because it takes a lot of time and requires critical thinking. Thus, the researcher read transcripts many times over to search for emerging themes and other concepts that were embedded within the data.

In doing this, the researcher needed a reasonably large amount of time to transcribe interview recordings into written forms. Indeed, to present results in research that has used qualitative methods, it is recommended to use electronic devices to record conversations between the interviewer and respondents and then to transcribe the recording into written words (Mason, 2014). Even though the researcher spent much time in personally transcribing each recording (approximately four hours on average to transcribe one recording), it was important that the researcher became familiar with the responses. This familiarity is an important feature when presenting and discussing the results of the research (Mason, 2014).

In brief, this chapter has described the methods used in this investigation and it has demonstrated the ways the researcher analysed data. In the next chapter, the author will

present the key findings of this research thesis on the experiences and satisfaction of scuba divers in Sihanoukville, Cambodia.

3.4. Research ethics

The application of principles for ethical research is usually expected in social sciences research because research may have implications for the people involved with or affected by the study. In relation to research in tourism, obtaining an independent review of the proposed research with regard to good ethical practice prior to conducting the research is important (Ryan, 2005). Ethics can be referred to as morality that involves codes of behaviour and a consideration of the potential effects of the research on people. As a consequence, good ethical practice in research on human participants typically requires approaches such as the assurance of confidentiality and anonymity, that the people being researched give their explicit consent to their involvement in the research and that the research does not place participants at risk of harm (Rose, 1994). As an ethical researcher, it is worthwhile keeping in mind the advice from Ryan (2005) which states “an ethical researcher is a reflective researcher, continuously mindful of sets of competing and complementary responsibilities to respondents, other researchers, those who commission the research, to readers and to those who may wish to follow by building upon the findings and research methods” (2005, p.18).

Prior to conducting this research, the researcher sought research ethics approval from the Auckland University of Technology Ethics Committee (AUTEC). After the researcher submitted an ethics application, it was reviewed and approved by AUTEC (6 May 2015, number 15/70). In addition to the above principles, the AUTEC approval sought to ensure that the research design and practice encouraged mutual respect and benefit as well as participant autonomy and ownership. It also was used to refine the research plan and instruments so that the participants and the researcher acted

honourably and with good faith towards each other. In addition, the research ethics approval made sure that the information and knowledge provided by the participants was properly acknowledged.

The research ethics ensured that the research design and practice implemented the principle of protection in the interaction between the researcher and other participants. Since the research did not deal with the privacy of participants, there was no potential harm to them. Participants' detailed information was not collected and thus, participants are anonymous. Before participating in the research, potential participants were advised of their rights to agree to participate or not. Also, the collected data was confidential and has been used in this study only. The participants had a chance to read the participant information sheet prior to their participation. Participants for the survey were not known to the study because participants' detailed information was not collected. Even though participants for interviews were known to the researcher, their privacy and confidentiality were well protected as interview participants were given a numeric code. All documentation relating to the participants referred to the code and not participants' names. The consent form containing the participants' name and code have been stored separately from all other data.

The research ethics also ensured participants were not likely to experience discomfort or embarrassment. The researcher ensured that levels of discomfort or embarrassment were minimised. This was achieved because the questionnaire was anonymous and participants shared only their thoughts and experiences about the diving trip while participants' detailed information was not collected. The researcher introduced the research purpose and made sure participants felt comfortable about participating in the study. Furthermore, another purpose of the research ethics was to guarantee that participants were not at any kind of risk in the research. There was no physical or emotional harm to participants since data collection took place in a safe public environment and participants had the right to agree to participate in the study or not.

Chapter 4 Findings

The purpose of this chapter is to present the important findings from the data collected. Since the researcher employed mixed methods for data collection, the results of this study are presented as an integration of both quantitative and qualitative data. The author will further interpret these results in chapter 5 where both the quantitative and qualitative results will be discussed by comparing and contrasting with relevant literature.

These findings are reported in an attempt to answer the six research questions posed in chapter 1. These questions are:

- 1) What are the demographic characteristics of dive tourists in Sihanoukville?
- 2) What are the motivations of dive tourists who go diving in Sihanoukville?
- 3) What are the experiences of dive tourists in Sihanoukville?
- 4) What are the levels of satisfaction of dive tourists in Sihanoukville?
- 5) What issues concern dive tourists in Sihanoukville?
- 6) What changes do dive tourists in Sihanoukville wish to see in the future?

The researcher developed specific questions in the self-reply questionnaire and the semi-structured interview, in order to generate data that could be helpful in addressing the above main research questions. The results presented in this chapter are therefore directed at the general research questions which are derived from the overall research objectives of exploring dive tourists' experiences and satisfaction in Sihanoukville.

In this chapter demographic characteristics of respondents are presented first, then important results pertaining to experiences and satisfaction in scuba diving are

presented second, finally results related to issues of concern and future changes are presented.

4.1 Demographic characteristics of respondents

What are the demographic characteristics of dive tourists in Sihanoukville?

The researcher approached 158 dive tourists to participate in the self-reply questionnaires. After cleaning the data, there were some unusable questionnaires, making 147 the total usable sample size for the study. Thus, the completion rate for the self-reply questionnaires was 93 per cent. Important demographic characteristics such as: gender, age, countries of origin, income status, and levels of education are presented below.

4.1.1 Gender

Of the 147 participating scuba divers, 65 per cent were male and 35 per cent were female.

4.1.2 Age

The participating scuba divers were required to select their respective age group from among four options. A descriptive analysis of the age of the respondents illustrates that the majority (63 per cent) were in the age group of 18-30 years old and 25 per cent were between the ages of 31-40 years old. Less than 10 per cent were in the age group of 41-50, while the lowest numbers of scuba divers were aged between 51-60 year olds (Table 4.1) (note there were no respondents over 60 years of age).

Table 4.1: Age of respondents (n=147)

Age group	Frequency	Percentage
18-30	92	62.6
31-40	36	24.5
41-50	12	8.2
51-60	7	4.8
Total	147	100.0

4.1.3 Countries of origin of respondents

There were 32 countries of origin among the 147 scuba divers who participated in the survey. The results, shown in Figure 1 below, are percentages for the respondents' countries of origin. The greatest percentage of respondents resided in Europe (57 per cent), most of which were from Germany, England, France, Italy, the Netherlands, and Austria. The second largest number of respondents was from the United States of America and Canada (23 per cent).

The results also show 8 per cent were ASEAN people (most of them were from Malaysia, Singapore, The Philippines, and Thailand) and 5 per cent were from Australia and New Zealand. The study found there were very few local scuba divers with only two per cent of the total participants stating they were from Cambodia. Other responses to this question included South Korea, Israel, China, and Africa (see Figure 4.1).

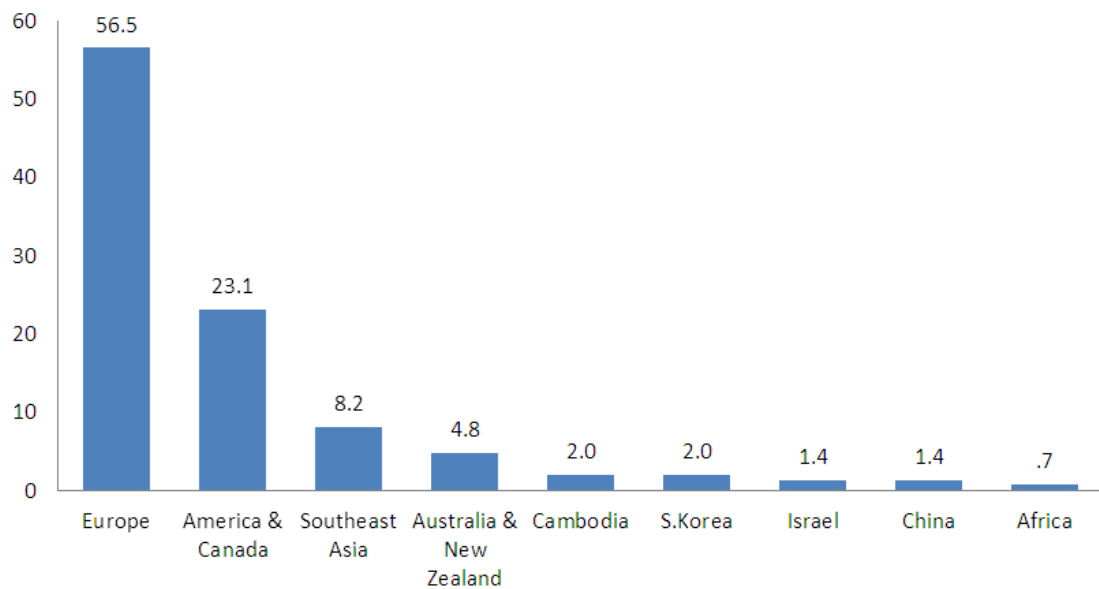


Figure 4.1: Respondents' country of origin (%)

4.1.4 Income

Data on income are presented as annual personal income in the United States dollar (USD) currency. Table 4.2 below, shows that one third of the respondents had an income between US\$10,001 to US\$50,000 per year, while those who earned US\$5,001 to US\$10,000 per year was only three per cent. Approximately 12 per cent of them had the lowest income (US\$0 to US\$5,000), and 14 per cent of them had the highest income category (more than US\$50,000). Note that 37 per cent of the total respondents chose not to reveal their income.

Table 4.2: Respondents' annual income in USD (n=147)

Income range	Frequency	Percentage
0-5,000	17	11.6
5,001-10,000	5	3.4
10,001-50,000	49	33.3
more than 50,000	21	14.3
N/A	55	37.4
Total	147	100.0

4.1.5 Levels of education

Table 4.3 below details the highest level of educational attainment of respondents. The majority (61 per cent), have an undergraduate degree and those who hold postgraduate degrees accounted for 28 per cent. Furthermore, almost 11 per cent had high school certificates while there was only one person whose highest educational attainment was finishing primary school. Table 4.3 below details the highest level of educational attainment of respondents.

Table 4.3: Educational levels of respondents (n=147)

Educational levels	Frequency	Percentage
postgraduate	41	27.9
undergraduate	89	60.5
high school	16	10.9
primary school	1	0.7
Total	147	100.0

4.1.6 Respondents' travel patterns

The results presented in this section demonstrate respondents' travel patterns including travel companions, sources of information about scuba diving in Sihanoukville, the number of their visits to the location, and their length of stay in Sihanoukville.

First, when asked whether they went diving in Sihanoukville alone, with friends and relatives, in a couple, or in a tour group, almost half of the respondents (48 per cent) reported that they had travelled alone, 28 per cent of them had travelled in a couple, and the remaining 25 per cent had travelled with friends and relatives. No respondent had gone diving as part of a package tour.

Secondly, respondents were asked about the information they received about scuba diving in Sihanoukville and the results are varied. The results show over half (56 per

cent) of those surveyed reported that they were aware of scuba diving in Sihanoukville through searching for information on the internet. Each marine tour operator in Sihanoukville has their own website and marketing activities are promoted on the webpage of the Ministry of Tourism of Cambodia. Moreover, 17 per cent of the participating dive tourists were aware of scuba diving in Sihanoukville through reading guidebooks and 16 per cent by word of mouth. Other responses to this question included travel agencies (6 per cent) and a few of respondents were “returning divers” who have dived here before (4 per cent).

Participating scuba divers were asked how frequently they go diving in Sihanoukville. The majority of respondents (89 per cent), reported that this was their first visit, nine scuba divers answered that this was their second visit while only seven divers answered that they had visited more than two times previously.

Lastly, the results also provided data on the length of stay of the scuba divers. Based on the wide range of answers provided as shown in Table 4, the most common length of stay of the surveyed scuba divers in Sihanoukville was two nights (33 per cent). Many of the respondents (29 per cent) spent three nights on their trip and some divers (14 per cent) spent only one night. 19 per cent spent up to four days or more on their scuba diving expedition. Other respondents (6 per cent) answered that they stayed in Sihanoukville for more than a week.

Table 4.4: Responses on the length of stay (n=138)

Number of night stay	Frequency	Percentage
1 night	19	13.8
2 nights	45	32.6
3 nights	40	29.0
4 nights	10	7.2
5 nights	11	8.0
6 nights	2	1.4
1 week	3	2.2
more than a week	8	5.8
Total	138	100.0

4.2 Scuba divers' motivations

This section presents findings which were obtained from the self-reply questionnaires and results which have been synthesised from data collected in the nine semi-structured interviews. Emerging themes were drawn from the summary of the recording transcriptions. In this section, the researcher has attempted to present the results that are relevant to the six primary research questions posed in chapter 1, by summarising and analysing the content of the transcriptions from key informants and the notes taken during the interviews. A data analysis technique for this section was demonstrated in chapter 3.

What are the motivations of dive tourists who go diving in Sihanoukville?

The second question in the self-reply questionnaire asked respondents about their motivations to go diving in Sihanoukville. Various responses were obtained to the question “What motivates you to come diving in Sihanoukville”? Based on the data illustrated in Table 4.5 below, it can be seen that over half (52 per cent) of those surveyed, indicated they were motivated to see the *undersea world*. Other responses to the question on motivation included some respondents (18 per cent) who reported they

wanted to *try scuba diving*, while others (16 per cent) answered that it was one of their *hobbies*. A smaller number of the respondents (8 per cent) indicated they wanted to *learn about the marine environment*.

Table 4.5: SCUBA divers' motivators to go diving in Sihanoukville (n=146)

Motivators	Frequency	Percentage
see the undersea world	77	52.4
trying scuba diving	27	18.4
hobbies	24	16.3
learning about marine environment	12	8.2
follow others	1	0.7
others	5	3.4
Total	146	99.3

There were a range of intrinsic motivations behind the decision made to go scuba diving in Sihanoukville. These motivations can be grouped into those that are common across respondents and those that are unique to individuals. The most common theme was the desire to discover the unknown undersea world of the coastlines of Cambodia. The majority of the interviewees reported the main motivation was to see the natural scenery at the bottom of the sea. One key informant [KI 1] who did her/his first *try dive* in Sihanoukville stated “*Hmm just everything under the soft sea like the nature involved, isn’t it?*”

Because scuba diving of Sihanoukville’s coastline is relatively new and not well known in the international diving community, the opportunity to dive in an unknown location was an important motivation for many. Many interviewees reported that not many people knew about the local scuba diving. As an interviewee [KI 2] said:

“Well, a lot of people still don’t know about diving in Cambodia, because it is not as big as Thailand or Malaysia...it’s still unknown.”

This response is similar to another interviewee [KI 3] who said:

“Because Cambodia is what I say on the tourist trail, so we have lots of Western people that travel to Cambodia, Thailand, Vietnam. Thailand has become too busy. So, people come to Cambodia and the diving cave is still quite unknown. So, it’s more quiet, not lots of people or boats...it’s untouched. So, when you go diving, it’s just you and your group.”

A related response provided by another dive instructor [KI 4] also mentioned some tourists wanted to discover dive sites because the dive sites in this country were not popular. She/he said *“Some of the divers try to dive in one place because, for example, they never see here, there, researching about Cambodia because Cambodia is not popular in diving. So, they are researching also may be the future of dive area”*. Her/his answer also provided indications that viewing rare species of marine animals can attract scuba divers from all over the world to Sihanoukville. She/he reported that scuba divers might see exotic whale sharks as well as the endangered sea turtles that exist along the Sihanoukville coastline.

In addition to the above motivation, the dive instructor [KI 4] also stated another important and fundamental motivation of scuba divers was simply because the individual liked diving. She/he stated:

“It doesn’t matter they don’t know yet what they will see there, but as a diver, they always having in their heart, if you go another place you want to dive there. It is like a pleasure.”

A further important motivation is that some people wanted to go diving in Sihanoukville because their home country does not offer good opportunities for scuba diving due to the local climate and related weather conditions. One key informant [KI 5] for instance, reported that the weather in some countries in Europe is very cold, creating bad conditions for scuba diving. Therefore, tourists who come from colder climates want to go diving in warmer climates such as Cambodia. This key informant, who was a dive instructor stated:

“France is cold, the weather is cold. So, it’s not good diving...It’s very bad condition and it’s not beautiful like Cambodia. So, it’s an opportunity they go here to dive. They cannot do in their country...Cambodia has good condition. So, it’s clear visibility, warm water. There is coral and beautiful fish.”

The result provided by KI 5 above, is similar to the response given by an international scuba dive tourist [KI 6] that one of the main motivations to go diving in Sihanoukville was due to the warmer water temperature. KI 6, who went scuba diving for the first time in Sihanoukville, preferred the warm water in this location because when she/he was in Greece, she/he stated: *“I was like freezing always”*.

In short, the results obtained from the self reply questionnaires and all key informants that were pertinent to motivations involved two main aspects. The first motivation, which was consistent from most responses, was to experience the unknown undersea world of the Sihanoukville coastline. The second main motivation was to try scuba diving in different weather conditions. Other responses included those scuba divers who did not care what they see as they simply like diving.

4.3 Scuba divers’ experiences

What are the experiences of dive tourists in Sihanoukville?

4.3.1 Divers’ activities underwater

Taking photographs appears to be the preferred activity amongst the respondents. Male divers in particular rated this activity higher than watching marine life (59 per cent vs 31 per cent). Female divers seem to prefer watching the marine life (28 per cent) than taking photographs (20 per cent). However, the major activity among underwater activities is taking photographs which accounted for more than half of the divers (54 per cent). However, results show underwater photography was undertaken predominantly by male divers. The results in Table 8 on the gender cross tabulation on underwater

activities indicate male divers undertook underwater photography almost three times more often than their female counterparts. A Pearson's Chi Square test indicates this result is statistically significant ($n=147$, $\chi^2=10.165$, $df=4$, $p=0.038$).

Besides taking photographs, 40 per cent of the total participating scuba divers responded they watched marine life. With regard to other answers, very few responded they swam with the fish, while only one diver provided a response indicating that they touched the coral reef (Table 4.6). Except for the underwater photography variable, there were no significant differences found for gender across these other variables.

Table 4.6: Gender cross-tabulation on underwater activities (n=146)

		Gender		Total	
		male	female	frequency	percentage
Underwater activities	photographing	59	20	79	54.1
	watching marine life	31	28	59	40.4
	swimming with fish	3	3	6	4.1
	touching reef	1	0	1	0.07
	others	0	1	1	0.07
Total		94	52	146	

4.3.2 Likes and dislikes

To explore scuba divers' experiences, respondents were asked what they liked and disliked the most during their trip. The results showed various responses to this question. As illustrated in Table 4.7 below, diving *experience* is by far the most favourable aspect of scuba diving expeditions in Sihanoukville. Among a number of options provided in the questionnaire, the best experience expressed by scuba divers was the *diving experience* itself. A small proportion of respondents (15 per cent) answered that they enjoyed the *marine life* the most, while a few others (9 per cent) chose *scenery* and fewer still (3 per cent) enjoyed eating local *food*.

Table 4.7: Responses to the question "what do you like the most?" (n=146)

Attributes	Frequency	Percentage
diving experience	100	68.5
marine life	22	15.1
scenery	13	8.9
food	5	3.4
locals	2	1.4
beach	1	0.7
weather	1	0.7
boat tour	1	0.7
others	1	0.7
Total	146	100.0

The next question asked respondents about their dislikes. A majority (85 per cent) of respondents (n=125) provided answers to this question.

While the results provided by scuba divers on what they like the most concentrated on almost a single variable which is the *diving experience* itself, the study received a variety of responses to the question "what don't you like the most?" Of the 125 respondent scuba divers, almost half (48 per cent) answered that they disliked the *weather* the most. As shown in Table 4.8 below, the weather is the outstanding dislike item among the other variables. The second most disliked aspect given was the *beach*, provided by 20 per cent of the total respondents. There are a number of beaches located along the coastline of Sihanoukville where scuba divers spend their time. The beach was determined as one of the most important factors that can greatly influence a satisfactory experience. Rubbish, pricing, and food were also disliked items provided by the respondents, and these three items accounted for nearly 30 per cent. In short, the results tell us the various disliked aspects that affect scuba divers' satisfaction. The author will later elaborate in detail on these aspects which can influence divers' satisfaction.

Table 4.8: Responses to the question "what don't you like the most?" (n=125)

Attributes	Frequency	Percentage
weather	60	48.0
beach	25	20.0
rubbish	10	8.0
pricing	9	7.2
food	9	7.2
boat tour	7	5.6
accommodation	2	1.6
diving experience	1	0.8
locals	1	0.8
marine life	1	0.8
Total	125	100.0

This section has presented an overview of data focused on the experiences of scuba divers as revealed by the self-reply questionnaires. In addition, the below description presents data on experiences of scuba divers derived from the interviews.

Significant results from the interviews indicate different personal experiences of scuba divers. These results are provided individually rather than collectively as they are more personal reflections.

The first result was provided by an international scuba diver [KI 1]. Her/his response when asked to describe her/his experience and what she/he liked the most about the diving trip, was simply the diving. What she/he liked the most was the diving itself; *"It's just the diving"*. In order to explore various scuba diving experiences, the researcher in fact, interviewed one inexperienced scuba diver [KI 1] and one experienced scuba diver [KI 6]. KI 1, in particular, was a tourist who had never dived before and it was her/his first time diving in Sihanoukville. When asked this question, she/he described her/his diving experience in a way that although the weather was not good at the time of diving, her/his first dive gave her/him a memorable diving experience. Besides seeing the various types of marine species, this diver described one

of her/his memorable experiences, focusing on *visibility*. Even though the visibility for this particular diver was poor, it was still viewed as a positive experience by the interviewee. KI 1 said:

“I think the visibility wasn’t great, but they said if you can dive in this condition, you can dive anywhere. So, in ways, it’s quite nice do some more difficult first. Some people come from Egypt, and where you can see a hundred meters and they come here they can see what three or four meters...and then they panic. So, where I experience that soon, so I just call out as normal.”

In spite of the fact that the diver liked ‘the diving’ the most, the result also revealed some other aspects in terms of dislikes. Litter was reported as the most serious problem that can cause a negative scuba diving experience. As KI 1 commented: *“The litter! I came out the sea and then in the harbour especially a lot”*. Similarly, the results obtained from another interviewee [KI 4] confirmed the thing that made scuba divers’ experience bad was the garbage. KI 4 said:

“The first thing they don’t like is the garbage...Most of the people in Cambodia they don’t know how to take care of garbage. This garbage when you put on the street and then when it’s raining like yesterday, it will go to the ocean.”

The garbage was, on the one hand, a negative in terms of the scuba diving experience, but on the other hand, KI 4 reflected on memorable experiences in scuba diving. As a dive instructor as well as an experienced scuba diver, KI 4 responded scuba divers usually enjoy a memorable experience whenever they see rare things under the water. What divers tend to do is seek to find something that they have never seen before. As she/he reported, a whale shark is one of the rarest things that scuba divers can see along the Sihanoukville coast and is a once in a lifetime experience. Clearly, as she/he reported: *“I know many people before they have been diving three thousand times they never see whale shark, but I know some people they just dive like five times and they can see the whale shark right away”*. The findings also revealed one scuba diver had in the

past seen an adult female whale shark (about 12 metres long) swimming in Koh Tang Island, approximately six hours by boat from the Sihanoukville mainland.

This key informant provided further detailed information that this was probably one of the reasons for diving at night time. The other reasons, as she/he pointed out, included scuba divers wanted to see something extraordinary providing an unforgettable experience for their trip. For example, there are many types of animals including corals that are secluded and not visible to scuba divers or inactive in the daytime, but when divers go at night time they can see these small creatures. The experience which scuba divers created was the way they learned something new. This key informant [KI 4] commented:

“Every scuba diver is looking something new in life. As a diver, you know, you learn everything. You learn every day. Even you’ve been diving many years, every day you dive you learn something.”

The results obtained from another interviewee [KI 6] revealed an unforgettable experience in scuba diving. It involved saving some fish from fishermen who were catching the fish nearby the dive site. This international diver reported, in an exciting way, that she/he had saved some fish and crabs from the fishermen. When asked to describe the experience and what she/he liked the most about the scuba diving trip, KI 6 commented: *‘Maybe saving the fish. It was very nice’*. Furthermore, although this diver reported that it was not her/his first time diving in Sihanoukville, she/he was quite happy with this diving trip because she/he saw new things that she/he had never seen before. KI 6 said: *“I’ve seen a few things I’ve never seen before like things that get in and out from the sand which were very nice”*. In addition, this diver brought a camera with her/him under the water and she/he took photos and videos.

Despite the fact that KI 6 had positive experiences described above, this scuba diver reported a negative experience in terms of a poor explanation from the marine operators.

She/he said she/he was not happy with the briefing provided by the marine operator. The marine operator explained only about the weather conditions, but information about the marine species such as types of fish which can be viewed, was not given. In addition, some scuba diving equipment was not checked properly, leading this diver to complain:

“Oh yes, like they haven’t checked once you got the suit on the BBC, they normally before jumping the water you should check, but they didn’t do that. Even though you are an expert diver, you should check your stuff.”

Over-fishing was reported by many of the interviewees. Despite the fact that the results showed various memorable and enjoyable experiences as detailed in the aforementioned findings, over-fishing caused upset not only for scuba divers but also dive instructors. There were consistent results received from the interviewees who reported too much fishing going on near to dive sites. That is, the results provided by a dive instructor who was also a director of a scuba diving company [KI 2], revealed that scuba divers do not want to hear about over-fishing, especially dynamite fishing. Those fishing activities were reported as the main reason for the bad experiences of many scuba divers. When KI 2 was asked to describe customers’ experiences in scuba diving in the Sihanoukville coastline, the following answer was given:

“Hmm, there is a lot of fishing going on. I mean Cambodian people of course need to fish, but there are also a lot of Thai illegal fishing boats, Vietnamese illegal fishing boats. So, there are a lot of big fish taken away by the big fishing.”

Likewise, results received from a dive instructor [KI 3], showed that the only bad experience which scuba divers may have, would probably be dynamite fishing. When KI 3 was asked the same question, she/he answered: *“The dynamite fishing”*. This result was also consistent with the answer provided by KI 5 who reported that upsetting experiences can be due to plastic rubbish, over-fishing, fishing on the reef, and lastly

and most importantly, she/he emphasised the dynamite fishing. Further detailed results about dynamite fishing are discussed in the next section.

To wrap up, the findings showed various experiences of scuba dive tourists visiting Sihanoukville. Most of them enjoyed taking photographs and some of them enjoyed watching marine life. The best experience expressed by most scuba divers was the *diving experience* itself. The weather, on the other hand, was the most disliked aspect of the experience. Overfishing and dynamite fishing were revealed as the factor that can cause negative diving experience.

4.4 Levels of satisfaction of scuba divers

What are the levels of satisfaction of dive tourists in Sihanoukville?

The first straightforward question in the questionnaire was “*How satisfied are you with your diving trip in Sihanoukville?*” The answers from the respondents were varied. Table 4.9 below shows an overall satisfaction for scuba dive tourists who have dived in Sihanoukville. Among the total respondents, a vast majority of them (91 per cent) answered positively, expressing they were satisfied (65 per cent) and very satisfied (25 per cent) with their diving trip, except for the four divers (3 per cent) who were dissatisfied. There were a few of them (7 per cent) who were neutral and were neither satisfied nor dissatisfied.

Table 4.9: Overall satisfaction of respondents (n=147)

Levels of satisfaction	Frequency	Percentage
satisfied	96	65.3
very satisfied	37	25.2
neutral	10	6.8
dissatisfied	4	2.7

A Pearson’s chi-square test showed a significant relation between gender and overall satisfaction (n=147, $\chi^2=13.595$, $df=3$, $p=0.004$). The results show (Table 4.10) that only

three male divers and one female diver were dissatisfied (3 versus 1) and there were 70 male divers and 26 female divers who were satisfied (70 versus 26), except for 20 versus 17 which were in the very satisfied category.

Table 4.10: Cross tabulation between gender and overall satisfaction (n=147)

		gender		Total
		male	female	
Overall satisfaction	satisfied	70	26	96
	very satisfied	20	17	37
	dissatisfied	3	1	4
	neutral	2	8	10
Total		95	52	147

Attraction attributes' mean scores

The next question asked the respondents about their levels of satisfaction by rating eight attributes. These attributes were identified by reference to various research studies (see appendix 8) as key determinants in influencing the satisfactory experiences of scuba divers, and these attributes have been applied in this study to the case of Sihanoukville.

The eight attributes are:

- 1) Coral reefs
- 2) Fish species
- 3) Scenery
- 4) Weather
- 5) Social interaction
- 6) Tour guide
- 7) Boat design or type
- 8) Services provided.

The respondents were asked to rate to what extent they were satisfied or dissatisfied with each of the attributes. Answer categories were provided and ranged from “very

satisfied=5”, “satisfied=4”, “neutral=3”, “dissatisfied=2”, and “very dissatisfied=1”. A “don’t know” option was also given to respondents.

Table 4.11 below, shows the average mean score and the standard deviation for each indicator. Respondents are generally satisfied with the attributes and *social interaction* was rated the most satisfying attribute (\bar{x} =4.30, std σ =0.706), while the *guide (dive instructors)* received the second highest ranking (\bar{x} =4.24, std σ =1.076). The *weather*, in contrast, was rated the most unsatisfactory attribute (\bar{x} =3.22, std σ =1.076).

Table 4.11: Mean scores and standard deviation of SCUBA tourism attributes (n=147)

Attributes	Average Mean	Standard Deviation
Social interaction	4.30	0.706
Guide	4.24	1.076
Services	4.06	0.796
Scenery	3.94	0.724
Fish species	3.93	0.737
Coral reef	3.80	0.746
Boat design	3.60	0.896
Weather	3.22	1.076
Others	4.67	0.516

The overall response to the *social interaction* attribute was very positive. As presented in Table 4.12 below, almost half of the total participating scuba divers (46 per cent or n=67) were *satisfied* with the opportunity to interact with other scuba divers, while the other 63 respondents (43 per cent) answered they were *very satisfied*. Figures shown in Table 4.12 confirmed the responses for the social interaction attribute. In this table we can see that both *satisfied* and *very satisfied* are by far the highest responses.

Table 4.12: Responses to the "social interaction" attribute (n=147)

Levels of satisfaction	Frequency	Percentage
satisfied	67	45.6
very satisfied	63	42.9
neutral	15	10.2
dissatisfied	2	1.4
very dissatisfied	0	0.0
Total	147	100.0

Table 4.13: Frequency responses to the "weather" attribute (n=147)

Levels of satisfaction	Frequency	Percentage
dissatisfied	44	29.9
neutral	43	29.3
satisfied	36	24.5
very satisfied	22	15.0
very dissatisfied	2	1.4
Total	147	100.0

The overall response to the *weather* attribute, on the other hand, is negative. The information in Table 4.13 above shows there are many respondents who were not happy with the weather conditions. Those scuba divers who went diving in Sihanoukville during this period, expressed various views about the weather. For example, figures shown in this table illustrate the different responses on the weather attribute. That is 30 per cent of the total respondents (n=147) were dissatisfied and 29 per cent were neutral. Nonetheless, 25 per cent were happy with the climate on the day they went diving and 15 per cent went in clear weather.

Furthermore, in referring back to Table 4.11 earlier, *fish species* and *scenery* were rated very nearly as satisfactory attributes. They were rated almost the same average mean scores of $\bar{x}=3.93$ and $\bar{x}=3.94$ with a standard deviation of $\sigma=0.737$ and $\sigma=0.724$ respectively. Generally, one of the main attractions in going scuba diving in tropical

settings is to see coral reefs, but surprisingly, the results of the data show that the *coral reef* attribute was rated a mean score of $\bar{x}=3.80$ with a standard deviation of 0.746. This result reveals that the *coral reef* attribute was rated less than a satisfactory scale (satisfied=4). With respect to this matter, the author has attempted to explain in more detail, the relationship between the coral reef and weather conditions in the discussion section.

Nevertheless, among all the eight attributes, no attribute scored less than $\bar{x}=3$. Even with the *weather* attribute which was rated by far the lowest score, as long as divers can view the marine life, then the weather was still rated a mean score of $\bar{x}=3.22$.

Admittedly, the average mean score of the attribute “*Others*” was the highest score among other elements ($\bar{x}=4.67$); however, this result needs to be interpreted with caution because there were only six respondents out of 147 people who selected this option. Three of those six respondents who ticked “*Others*” wrote “local people”, “food”, and another was “good price”.

So far, the above results demonstrated levels of satisfaction of scuba dive tourists from which the researcher is based on the self-reply questionnaires. Key findings from responses from the interviewees strongly support these results.

Accordingly, the results from all key informants showed the overall response to the question “to what extent are you [scuba divers] satisfied with your diving trip” was very positive. The whole sample was reasonably satisfied. This satisfactory experience was derived from a number of reasons and these were provided individually by interviewees.

For example, KI 1 was satisfied due to the fact that she/he considered they were guided expertly throughout the whole trip by her/his dive instructor. While she/he was guided

to dive only to a six-metre depth, she/he saw several organisms they valued. KI 1 reported:

“I think we saw more than that actually. We saw a low really big red star fish like this about four of them, a stink ray but small one, ...purple fish, hmm what else, hundreds of sea urchins,... clown fish, large amount of coral, and lots lots of fish.”

There were similar findings obtained from another scuba diver who when asked how satisfied are you with the diving trip? KI 6 answered: *“I’m pretty satisfied. Overall is quite good”*. Moreover, this scuba diver also provided more detail about influences on her/his satisfaction, including the good weather conditions on the day she/he went diving as well as marine flora and fauna forming impressive displays that made him very happy. KI 6 said:

“Well, the condition was pretty good, could have been rained and hmm like overall hmm there’re a few spots with a nice visibility even though there were some other spots that were cloudy...I’ve seen a few things I’ve never seen before like things that get in and out from the sand which were very nice...coral reef was good, very impressed, variety of them”

From the perspective of the dive instructors, almost all scuba divers were generally satisfied with their trips. According to the results from the interviews with dive instructors, scuba dive tourists were very happy after they went diving in Sihanoukville. KI 2, for instance, reported that in addition to satisfaction with the marine natural resources the customers had seen, they were also satisfied because of the specialised services. KI 2 stated: *“We have good service, we have good equipment. We maintain, we test our air and of course people who are working here have lots of experience in the diving industry”*. Through this comment, this key informant was trying to explain the way his/her dive centre pays attention to keeping technical diving gear such as filters and compressors clean and up to date with regard to their maintenance.

Another dive instructor [KI 3] also reported that most scuba divers were satisfied with his/her dive company. When asked to what extent are your customers satisfied with their trip, KI 3 answered: *“I think most of the time they are satisfied. We have lots of customers who are happy”*. When asked what made them happy, this key informant pointed out the excellent service the company provided. She/he said: *“...just you know friendly staff members, friendly people, relaxed diving, relaxed atmosphere, nice diving, the whole day is really relaxed”*.

Another international dive instructor who was from a different dive company, also claimed a high percentage of scuba divers were reasonably satisfied after they went diving in Sihanoukville. This key informant [KI 4], reported about 90 per cent of her/his customers are usually satisfied due to the fact that the coral reefs in Sihanoukville are spectacular. KI 4 asserted that the coral reefs at their dive sites are amazing because they are alive and they are growing. For this reason, most scuba divers are generally satisfied with their trip. *“Like I say, 90 per cent of them are satisfied. So, nine out of ten are satisfied”*. However, KI 4 mentioned that the level of satisfaction with scuba diving is often dependent on visibility. She/he said:

“It depends on visibility. Even you dive in Australia, in the Great Barrier Reefs or anywhere good place to dive, if the visibility is not that good you don’t enjoy the diving at all.”

While the above results are concentrated on marine attractions and weather conditions, one informant illustrated satisfaction with scuba diving depends largely on the way the operator has organised the trip. An international dive instructor [KI 5] reported her/his company’s customers, who are usually satisfied with diving trips, more often based their evaluation on the way the trip was organised. When asked to what extent your divers are satisfied with the diving trip, she/he expressed the belief that 95 per cent of them are

generally satisfied. As this key informant put it: *“I would say 95 per cent are very satisfied. Actually it depends on how you organise the trip, it depends on your sailing”*.

The results received from one of the boat operators [KI 7], suggested that a majority of scuba divers are commonly happy with their trip because of a range of factors. First, it is a tranquil experience which attracts those who prefer a quiet and relaxed atmosphere. Second, she/he reported that the dive site offers a pristine marine environment where most scuba divers can experience time-off from work and a holiday.

In addition, she/he believed that the place offers a sunset view that can be an attractive moment for tourists who prefer a romantic evening at a peaceful place like Koh Rong Samleom Island. Finally, when asked what the most satisfactory factor was, she/he said marine life was the main factor that can lead to satisfied scuba divers. This key informant maintained that most scuba divers who came out from the water after diving, most often shared what they saw from the undersea world, such as coral reefs and fish species with their friends and other divers.

In brief, the results obtained from the self-reply questionnaires as well as the key informants that revealed levels of satisfaction show that most scuba divers were satisfied. Factors that significantly influenced satisfactory scuba diving trips were identified including the tour services and dive instructors, the marine attractions, and the weather conditions.

4.5 Sustained improvements to scuba diving

What issues concern dive tourists in Sihanoukville?

The final section of the semi-structured interview asked key informants to provide any suggestions for improvements to scuba diving in Sihanoukville. The results obtained from those key informants describe long-term improvement initiatives in creating more

enjoyable scuba diving experiences for the study area. Together with this, the study also revealed important findings from the open-ended questions, in the self-reply questionnaires, that emphasised areas for improvement to scuba dive tourism in the Sihanoukville province. These main areas to be improved included waste management, marine conservation, and actions to be taken to combat illegal fishing.

4.5.1 Waste management

Many interviewees pointed out a number of problems related to waste disposal. Both solid and liquid waste was reported to not be managed properly and this problem caused bad experiences for scuba divers. KI 1 responded to the question by answering instantly: *'Yeah, litter definitely'*. Similarly, KI 2 reported that there is lots of building work on the island [Koh Rong Island] nowadays which has been producing much waste. She/he commented: *"And now because there is so much building on the island and of course there will be also where all the waste going...I mean some companies have sewage pipe where they pump it out into the sea"*.

With regards to the waste management, KI 4 reported on the two main reasons that caused negative complaints by scuba divers. Firstly, local people as well as local tourism vendors, produced waste and the waste had not been managed properly. Koh Rong Island is very small in size, but the number of people has been increasing because local people have started doing business to serve the increasing number of tourist arrivals. KI 4 said: *"You know, Koh Rong is very small island. Now they start to develop and they don't know where to throw the garbage properly"*. Secondly, KI 4 believed that not only do local people produce the garbage, the garbage can sometimes be left by tourists as well. There have been some tourists who have behaved inappropriately in this area. When asked why that was so, KI 4 commented:

“Sometimes, the tourists when they are at their country, they are very good at following the rules, but when they go out to other country like Cambodia, and they do the same like Cambodians, that’s not good...We make them realise. They all must take care the place.”

Likewise, KI 5 commented on the same problem. KI 5 proposed a clean-up of the area where she/he usually takes her/his customers to dive. As she/he said: *“I think hmm clean up where we see coral”*. In addition to the results provided by KI 4 and KI 5, a French diver [KI 6] commented similarly when asked what can be done to improve the scuba diving experience in this area. She/he said: *“First of all, remove a few nets and plastic bags and anything was in the water...was disturbing the coral reef”*. KI 6 proposed relevant stakeholders should develop a volunteer programme in order to clean this area of the coral reef. One of the negative feelings that occurred after diving was reported by KI 6: *“There is not one lives there, but there is rubbish”*. This key informant also encouraged tourists to pass the word around to not pollute and tourists can also participate in the clean-up. She/he added: *“And if there is volunteer work, go on for it, to give your time”*.

In short, the results obtained from the interviews show important issues in terms of waste management especially around the garbage. Both locals and some tourists were reported as being those who left the area polluted.

4.5.2 Marine conservation

There was widespread concern over various negative impacts on current marine resources. Key findings from the interviewees, especially KI 2, KI 5, and KI 8 demonstrated that marine resources such as coral reefs and fish species are under threat from human activities. Such concerns, as commented on by most interviewees, can cause negative scuba diving experiences in Sihanoukville. Thus, many key informants argued that those marine resources need to be better protected.

The results from KI 2, for instance, expressed concern that sewage is being pumped into the sea and the consequent negative affects on marine life. This interviewee added, although building work was small scale, this environmental impact can negatively affect the natural ecosystem. KI 2 urged the protection of the marine life because when asked what the governmental agencies could do to improve the scuba diving experience, she/he commented: *“Protecting the marine life”*. Furthermore, when KI 5 was asked the same question as KI 2, the result was focused on marine conservation. She/he claimed that the status of coral reefs was a public concern and proposed to establish a marine park to ensure surrounding marine resources can be fully protected. She/he said: *“Easy, a marine park, marine conservation”*. Talking about this issue, KI 5 strongly recommended a related authority take marine conservation into consideration. She/he commented:

“So, the police must protect the reef, the coral. We have lots of space around the island that we need to protect, marine conservation, protect the reef around Koh Rong Samleom, make territory where for diving only, for looking at the fish. Looking at the fish, but no fishing at all. And then there may be lots of fish.”

Lastly, one key informant [KI 8], provided information about the lack of accountability in conserving marine resources. KI 8 revealed that key stakeholders, particularly the government agency, displayed a lack of willingness in protecting these resources. She/he claimed there have been no effective actions on this issue and that related non-governmental organisations that receive much funding from international donors, have not made any achievements with regards to marine protection. In short, KI 8 highlighted the serious concerns over the negative impacts on coral reefs as well as fish species, from illegal fishing boats and the use of destructive equipment and techniques in fishing, including dynamite fishing.

4.5.3 Illegal fishing

The results from all interviewees were rich in providing information that related to illegal fishing. The participants, on the whole, shared concerns about illegal fishing activities on the Sihanoukville coastline and claimed such activities have dramatically increased negative experiences for scuba divers. Answers from KI 1, for example, expressed a personal opinion about being unhappy with Vietnamese fishing boats that use dynamite to fish. Being informed by the dive instructors, KI 1 responded to the question about what can be done to improve scuba diving experiences as below:

“Talking more to the government, really, try to get, to do with fishing. They’re saying a place some of islands like Koh Tang Island the visibility is really good but because of the Vietnamese use dynamite to fish there, so there is no fish there. So, it’s about to control the fishing.”

With regards to the results provided by KI 1, KI 8 reported Koh Tang Island is very far from the Sihanoukville mainland and takes approximately six hours to reach by boat. However, despite the long distance, the area of Koh Tang Island may be more attractive than Koh Rong and Koh Rong Samleom Island because it has better visibility, more coral reefs and a rich variety of fish species. Unfortunately, as KI 8 reported, illegal fishing boats have been entering this territory generating concerns over the impact this might have on marine flora and fauna. KI 8 also reported that if there is no effective action on this problem, then there will soon be no more fish in that area, and thus, there will be no scuba divers either.

Koh Tang Island is three times farther than the distance from Sihanoukville to Koh Rong and Koh Rong Samleom Island. Due to its great distance, many tourists go diving only to Koh Rong and Koh Rong Island. The results from KI 8 report only those dive tourists who have dived in these two islands and who want to dive somewhere else, are then taken to Koh Tang Island.

While the above encroachment of illegal fishing boats was reported in locations nearby Koh Tang Island by international fishing boats, illegal fishing by domestic fishermen has been reported in some locations nearby to Koh Rong Island. According to KI 7's responses, there have been domestic fishing boats that always do their fishing very near to scuba diving sites, particularly nearby Koh Rong Island. A boat operator who has been operating his boat for scuba divers for at least five years, confirmed that the areas surrounding Koh Rong Island are protected by the authorities, but illegal fishing still exists. When asked how such illegal activities affect scuba diving, this key informant believed that most scuba divers were not happy because they like to see fish and other marine life and if there is illegal fishing, it can seriously affect the experience of scuba divers.

Moreover, as highlighted earlier from the comments provided by KI 2, there are many fishing boats nowadays. She/he reported there has been an increase in Cambodian fishing boats and that there are many illegal Vietnamese fishing boats. When asked about the status of fishing activities in the study location, KI 2 expressed a personal concern and said: *"Hmm, there is a lot of fishing going on"*. Correspondingly, the results provided by KI 3 also confirm the illegal fishing that can greatly influence the scuba diving experience. Being a dive instructor, KI 3 shared her/his harrowing experience which was caused by illegal fishing boats as she/he stated:

"One time I've would caught in fishing net from some fishing boats. I was under the water and they went round and almost brought me to the surface with my student, hmm it's not good."

Furthermore, an experienced scuba diver [KI 6] described to the researcher how fishing activities should be conducted. She/he explained that in a way, fishermen have a right to fish. However, with regards to a scuba diving zone, KI 6 emphasised that although they have a right to fish, they are doing it in the wrong places. The emphasis has been made

because the interviewee believed that a scuba diving area should not be a fishing zone.

As KI 6 commented:

“It’s just the fishing in the wrong area because fish often spend their life in the same kind area. They don’t move far away. So, if you fish in around the island, so you don’t have any fish around here.”

In short, most key informants revealed strong concerns about illegal fishing surrounding the study location. The key informants also expressed more specific concerns over destructive fishing gear such as dynamite and nets that can negatively influence scuba diving.

4.5.4 Dynamite fishing

One of the most important findings in this research study is the illegal fishing activity that uses dynamite. There were overwhelming results that reported the same concern over the use of dynamite as illegal fishing gear. KI 3 defined dynamite fishing as *“The fishing that throws dynamite, like a bomb, under the water and it kills some fish”*. Dynamite fishing was one of most frequently reported dislikes by many dive instructors. KI 3 believed that *“The dynamite fishing is a big problem here [Koh Rong Island]”*.

To investigate in more detail about the dynamite fishing being practised near the island, KI 7 was the only key informant who knew about this issue. When asked how it worked, by whom, and how it affected scuba diving in Sihanoukville, KI 7 was happy to report about the issue.

KI 7 began with dynamite users. Even though she/he was not a hundred per cent sure who the exact person was who had been practising dynamite fishing, this key informant provided two answers. Firstly, the only people who have dynamite, bombs, and other explosive devices could be marine soldiers. These soldiers were assigned to a base in Koh Rong Island. KI 7 was reluctant to report the name of those behind the dynamite

fishing and she/he preferred not to name them. Secondly, some dynamite users might not be those marine soldiers, but the dynamite users might have given money to those soldiers so that they could carry out this fishing. Although, KI 7 provided these two suspects, she/he emphasised more strongly the first suspect, because she/he sees a particular boat more often and she/he knows the owner. *"I always see there is only that particular boat whenever there is an explosion. I navigate through this water way, so I am quite sure it is"*, said the interviewee.

Then, KI 7 explained how dynamite fishing worked. As far as KI 7 was aware, before the fishermen set off the bomb, they dive into the water to see whether there are any fish. When they see there are some fish, they set the explosive device and connect it to some rocks, and then they come back to their boat. Subsequently, they detonate the bomb and finally they collect all the fish.

The results obtained from a dive instructor who had personal experience with dynamite fishing boats report that it is very difficult to deal with this issue. One of the main reasons is due to personal safety. KI 3 commented:

"No, we don't speak to them. We hear story before, if you come to them, they're very aggressive. So, it's very dangerous. We just stay away. If we find boat staffs do dynamite fishing, we've tried to report the, but it's difficult."

When asked what can be done to improve the scuba diving experience in Sihanoukville, one of the key informants heavily emphasised eliminating dynamite fishing from surrounding dive sites. She/he commented:

"Sometimes when I was on my boat while our divers were diving, there was a sound like a bomb. Suddenly, all scuba divers came out to the surface and reported there was an explosion."

That was a harrowing experience reported by the scuba divers.

Responding to the question on how dynamite fishing affects scuba diving, this key informant believed the consequence of dynamite fishing can be intensely dramatic. When the explosive device goes off, as KI 7 described, not only do the large fish die, others die too including small types of fish. Even if some other fish do not die, those alive fish swim away; and thus, there are no more fish to be viewed by scuba divers. More importantly, coral reefs are definitely broken up by the explosions and also some rocky caves under the sea are destroyed. KI 7 advised that it has a big impact because the illegal fishermen triggered off the dynamite very near to the island, only 100 to 200 metres away.

What changes do dive tourists in Sihanoukville wish to see in the future?

Artificial reefs/wrecks

Some key informants proposed having artificial reefs and wrecks. The results from some interviews, especially KI 4, KI 5, and KI 6, revealed that if Cambodia had some wrecks, the country could attract more scuba divers to visit Sihanoukville. A scuba diver [KI 6], who used to dive in Thailand, suggested Cambodia should have some more human-made coral reefs so that there would be more attractions to see under the water.

KI 6 suggested:

“Like in Thailand, they were studying a few devices like some cache or something so that coral reef can build on it or around it...which was very good. So, there were more fish around.”

Moreover, KI 5 provided some recommendations to the government in terms of creating artificial reefs. The government should sink unused airplanes, for example, to make wrecks. As she/he said: *“The airplane, you know, it’s very beautiful under the water”*. KI 5 was confident that scuba divers would go diving a lot more, if Sihanoukville had wrecks because most scuba divers like to see wrecks. Thus, when asked what the

government should do to improve the scuba diving experience in Sihanoukville, this key informant suggested:

“We need to find wrecks. You know rubbish ship and we sink it, you know the airplane, so we make hmm artificial reefs. Make it for divers. Sink it on proper dive sites.”

Finally, the results from KI 4 were very positive in providing the information pertinent to wrecks. She/he reported that a representative from her/his diving company has talked to the government and is submitting a proposal to request old ships and broken airplanes to sink in the Sihanoukville coastline. However, that proposal, as per the information provided by KI 8, seems to have been neglected by the government.

KI 4 believed that if the government agrees to offer redundant ships and airplanes to sink into the sea, scuba diving in Sihanoukville would be more popular. She/he said one of the main reasons was because most scuba divers want to see wrecks. Having had many years of scuba diving experience in the Philippines and Thailand, KI 4 wanted to apply her/his experience to make scuba diving in Sihanoukville more popular, particularly in establishing the concepts of artificial reefs and wrecks. She/he said:

“We asked the government to use all tanks and airplanes from last wars to put into the sea. We asked the government if they are not using it please give it to the sea to make diving here very good.”

One of the benefits of having those wrecks, as KI 4 commented, was the fact that the amount of coral reefs will increase and the number of fish will also increase. This interviewee commented:

“When we put the tanks in the sea, after one year it will grow to them. It will attract fishes, it will attract corals and it’s gonna be very good for divers...it’s not helping fish to find a new place to live, it’s helping corals to grow and it’s helping tourism because divers want to see wrecks.”

So far, the researcher presented key findings from the interviewees that associated with the areas for improvement in scuba diving experience. In addition to this, the researcher presents in this part of the key findings from four open-ended questions in the self-reply questionnaires. The four questions included: (a) a general view on how to improve diving experiences in Sihanoukville; (b) the role of marine tour operators in improving diving services; (c) the role of government agencies in the better management of diving; and (d) how the scuba divers themselves can contribute to improving the diving experience.

What should be done to improve diving experiences in Sihanoukville?

The results from this question were mixed. More than half (52 per cent) of respondents were concerned about the environment. Based on the data illustrated in Table 14, when asked what should be done to improve the diving experience, a majority of them responded *protection of the environment*. Moreover, over-fishing has been a widespread concern not only for the local community but also for scuba divers. Almost 20 per cent of those who commented on this question proposed to *stop fishing on reefs* to improve the dive experience. The study, furthermore, found that over-fishing of nearby dive sites is undertaken by Cambodian, Vietnamese and Thai fishing boats.

Findings with regard to over-fishing close to dive sites were also provided by key informants from the interviews and these key findings will be elaborated in more detailed in chapter 5.

Other useful comments from scuba divers on this question were the encouragement of the discovery of new dive sites (7 per cent), various food options that should be more available in the area (7 per cent), equipment upgrades (6 per cent) such as better boats, air tanks and masks, and more information should be posted on websites (3 per cent).

Table 4.14: Responses to the question "what should be done to improve diving experience in Shanoukville? (n=69)

	Frequency	Percentage
Environment protection	36	52.2
stop fishing on reef	13	18.8
Food options	5	7.2
more dive sites	5	7.2
Equipment upgrade	4	5.8
socialising	3	4.3
information on website	2	2.9
underwater museum	1	1.4
Total	69	100.0

What should marine tour operators do to improve services?

The overall response to this question was very poor. There were only 38 respondents out of 147 who answered this question. Almost half (42 per cent) of those who provided an answer, suggested the marine operators upgraded their equipment. The equipment the dive companies commonly use includes boats, most of which were the more traditional boats, masks, fins, buoyancy control devices – some of which were old and decayed, wetsuits, and some snorkels that leaked.

Moreover, 24 per cent suggested the marine tour operators should provide more information about scuba diving in Sihanoukville. This information could include types of fish species and weather conditions. Other comments on this question included respect for the environment (16 per cent), be more organised on the trip (16 per cent), and provision of more food options on board (3 per cent).

What should the government agencies do for better management of diving?

This question attracted much attention from many scuba divers. Almost half of the surveyed scuba divers answered this question. When asked what should the government

agencies do for better management of diving, over half (55 per cent) of the answers were concentrated predominantly on illegal fishing. The findings, as in Table 8, show many scuba divers called for a stop to illegal fishing surrounding diving sites.

In addition, the results reveal that 25 per cent of the surveyed divers recommended that the government agencies promote marine awareness such as natural resource management and marine environmental protection. Specifically, 17 per cent suggested associated government agencies take action on cleaning up trash where plastic bags, cans, and other garbage can be seen on most beaches and even in the sea. Only 3 per cent suggested that the government provide more infrastructures.

Table 4.15: Responses on the role of government agencies for better management of scuba diving (n=65)

	Frequency	Percentage
stop illegal fishing	36	55.4
marine awareness	16	24.6
clean up trash	11	16.9
more infrastructure	2	3.1
Total	65	100.0

What should dive tourists do to contribute to the management of diving?

The overall response to this question was poor with only 42 respondents. A vast majority of those who answered mentioned that scuba dive tourists themselves should not litter (76 per cent) and that they should share their diving experiences with others (5 per cent). There were only three divers who suggested that tourists should critique any weaknesses to improve the diving experience.

Conclusion

In summary, this chapter has presented results from both research instruments and both quantitative and qualitative data. The quantitative results summarised some characteristics of scuba divers such as; gender, age, nationality, income status, and educational background. Data were also presented on the extent of scuba divers' levels of satisfaction. Qualitative data present more in-depth information related to specific diving experiences as well as a summary of the satisfaction with scuba diving in Sihanoukville. Some of the most important findings, especially the themes that have emerged from the analysis of the qualitative data were issues concerning scuba divers such as waste management, marine conservation, and illegal fishing. The desire to see artificial reefs and wrecks was also emerged. Other important findings to emerge from the study are the suggestions for improvements such as environmental protection and stop illegal fishing. The researcher will discuss these results in the next chapter, by comparing and contrasting with other studies pertinent to this topic.

Chapter 5 Discussion

5.1 Introduction

This part of the thesis discusses the findings, which emerged from the data analysis presented in the previous chapter. The first section of this chapter provides a brief summary of the study in order to emphasise the important findings that are the focus of the discussion. Subsequently, the chapter evaluates those important findings derived from the data collected through self-reply questionnaires and the interviews by considering the factors that influence a satisfactory experience, but also the factors that can cause dissatisfaction for scuba divers in Sihanoukville. Findings are compared to and contrasted with relevant research studies and this is followed by a synthesis of the study. Finally, this chapter proposes a diagram of factors influencing satisfactory experiences in scuba diving, derived from the case of Sihanoukville, by combining the key attributes found in the study which are believed to be the significant factors that can influence scuba divers' satisfactory experiences.

5.2 Demographic characteristics of scuba dive tourists

5.2.1 Gender

Of the total participating scuba divers, 65 per cent were male and 35 per cent were female. The fact that the number of male scuba divers was more than females is not surprising because marine tourists who take part in 'adventurous' activities such as scuba diving are typically dominated by males (Orams, 1999). This finding from the study is consistent with previous research which also found that males outnumber females by around two-thirds to one-third (eg. 66 per cent versus 34 per cent; (O'Neill et al., 2000) and 65 per cent versus 35 per cent; (Musa, 2002).

5.2.2 Age

The majority (63 per cent) of respondents were in the age group of 18-30 years old and 25 per cent were between the ages of 31-40 years old. Other research has also found that most scuba divers are from younger adult age groups. For example, Musa (2002) found the average age of scuba divers was 34.9 years in a study in Sipandan, Malaysia. Orams (1999) and Jennings (2007) claim that the predominance of younger adult age groups in scuba diving is due to the perception that the activity is adventurous and challenging.

5.2.3 Countries of origin

There were 32 countries of origin among the total participating scuba divers. The greatest percentage of them resided in Europe (57 per cent), most of whom were from Germany, England, France, Italy, the Netherlands, and Austria. The second largest number of respondents was from the United States of America and Canada (23 per cent). These results indicate that although Cambodia is situated in Asia, at present the main market for scuba diving in this country is not from the surrounding Asian region, but from Western countries. A possible explanation for this may be because the weather conditions in Western countries are normally cold and the cold weather is usually not conducive to scuba diving. For this reason, many residents of Western countries go diving in tropical climates such as Southeast Asian including Cambodia, particularly in the winter.

Another possible explanation is that scuba diving is a relatively high cost sport and leisure activity and therefore, as a consequence, tends to be dominated by people with relatively high incomes who are more likely to be from the Western countries. Binney (2009), for example, revealed the main international scuba diving market for the Great Barrier Reef Marine Park of Australia are those who were from developed countries

such as Japan, the United States of America, Germany, and the United Kingdom. Similarly, an investigation done by Mundet and Ribera (2001) also found that male Europeans were the predominant scuba divers at a Spanish resort and scuba divers in Phuket, Thailand, were also from developed countries such as the United Kingdom, Netherlands, and Japan (MacCarthy et al., 2006).

5.2.4 Income of scuba divers

The results of this study indicate that one third of the respondents had an income between US\$10,001 to US\$50,000 per year and 14 per cent of them had the highest income category (more than US\$50,000). Even though 37 per cent of the total respondents chose not to reveal their income, it can be claimed that most scuba divers have relatively high incomes because only 12 per cent of them indicated that they had the lowest income (US\$0 to US\$5,000). The relatively high income of scuba divers is not surprising because Dimmock (2007) confirms that the typical scuba diver is an employed person in a middle to high-level, professional job. In addition, because scuba diving requires qualifications and equipment that are relatively expensive, it tends to be undertaken by higher socio-economic groups and, as a consequence, popular destinations for scuba diving attract tourists from relatively high income classes (Dikou & Troumbis, 2006). Thus, this study provides additional evidence to support the findings that scuba divers, in general, come from a relatively high socio-economic class.

5.2.5 Levels of education

Most participating scuba divers in this study had a university degree. The majority (61 per cent) had an undergraduate degree and those who held postgraduate degrees accounted for 28 per cent. These findings are in accord with previous studies indicating that scuba divers have a high level of education (Dimmock, 2007, Musa, 2002).

5.2.6 Travel patterns

Travel patterns such as travel companions, sources of information about scuba diving, the number of visits to the location, and the length of stay in Sihanoukville are important elements to understand in this exploratory study of scuba dive tourists.

Surprisingly, almost half of the participating scuba divers (48 per cent) travelled alone to the Sihanoukville province, 28 per cent of them travelled in a couple, and the remaining 25 per cent travelled with their friends and relatives. One interesting finding is that no respondent was part of a package tour. In general, therefore, it seems that most scuba dive tourists in Sihanoukville were independent travellers, while package tours have so far not been organised in the area.

The main source of information about scuba diving in Sihanoukville was the internet. More than half (56 per cent) of respondents were made aware of information by searching on the internet. Each scuba dive company in Sihanoukville had its own website and the marketing activities of scuba dive tourism are promoted on the webpage of the Ministry of Tourism of Cambodia. The other source of information was reported to be found in guidebooks and ‘word of mouth’ was also an effective tool in disseminating information. One interesting finding was that a few participating scuba divers (4 per cent) were ‘returning divers’ who had dived there before.

Another important finding was that a vast majority of participating scuba divers (89 per cent) were visiting Sihanoukville for the first time. This result may be explained by the fact that Sihanoukville as a scuba diving destination is very new and not many divers know about this emergent marine destination in the Southeast Asian region. Hence, most scuba diving expeditions in Sihanoukville were ‘first time visits’. It may be the case, therefore, that Sihanoukville can be listed as a ‘pioneering’ marine destination for

scuba diving in accordance with Wong's (1998) claim that marine destinations or so-called 'beach resorts' in the Southeast Asian region involved established, emerging, and pioneering destinations. However, Sihanoukville has not previously been described as being in one of the categories claimed by Wong's research from which there are only a small number of pioneering and emerging beach resorts in Indonesia, Malaysia, the Philippines, and Thailand. A possible explanation for this might be that Wong's research was conducted nearly two decades ago and Sihanoukville's popularity has been increasing in recent years.

Finally, the most common length of stay of participating scuba divers in Sihanoukville was two nights (33 per cent) and 29 per cent of other respondents spent three nights on their trip. This finding contrasts with that of Musa (2002) where the average length of stay of a scuba diver in Sipandan of Malaysia was 6.6 days (Musa, 2002). It is difficult to explain this result, but it might be related to some factors that can prolong or shorten the length of stay such as the number of dive sites, other tourism facilities or services provided at the destination, or price considerations. Another possibility is a geographical factor. For example, Sipandan is an isolated island with few alternative locations close by, whereas Sihanoukville, is on the tourist trail between Thailand and Vietnam thus providing opportunities for tourists to move on to other locations more easily.

5.3 Motivations of scuba dive tourists

The findings from both the self-reply questionnaires and the interviews were consistent in that there were four main motivations for the participating scuba dive tourists. Those four main motivations included seeing the undersea world, trying scuba diving, enjoying a hobby, and learning about the marine environment. Among these four motivations, over half (52 per cent) of the participating scuba divers revealed that their

motivation was seeing the undersea world. Similarly, the most common theme from the interviews was the desire to discover the unknown undersea world of the coastlines of Sihanoukville. These results seem to be consistent with other research which found that a crucial part of global scuba dive tourism is seeing coral reefs under the sea (Dimmock, 2007; & Garrod & Gössling, 2008). Moreover, this result is also pertinent to the desire to see what is 'under the horizon' of marine tourists that undertake exploration-based activities such as scuba diving and snorkelling (Orams, 1999).

The study also demonstrated that because scuba diving of Sihanoukville's coastline is relatively new and not well known in the international diving community, the opportunity to dive in an unknown location was an important motivation for many. For example, KI 3 in this study commented:

"The diving cave is still quite unknown. So, it's more quiet, not lots of people or boats; it's untouched. So, when you go diving, it's just you and your group."

Another motivation was that many scuba divers wanted to pursue their hobby. It could that a fundamental motivation of scuba divers was simply because the individual liked diving. In this scenario, simply being a scuba diver who enjoys diving is a basic motivation for pursuing the activity irrespective of the location or undersea setting. Given that they love and enjoy diving, a specialist activity requiring training, certification, equipment and skills, scuba diving tourists are likely to be different from general coastal and marine tourists who just enjoy the sea, sand, and sun, scuba divers are more dedicated and focused (Ince & Bowen, 2011). The results of this study have also indicated that scuba diving for some participants was not yet a hobby, but was something they wanted to try. Data obtained from the self-reply questionnaires indicated that 18 per cent of those participating scuba divers simply wanted to try out scuba diving.

It can be seen from the data that there were different types of scuba divers who participated in this study. While some scuba divers pursued scuba diving activities as their specialist leisure activity, other scuba divers were motivated just to try scuba diving. This is similar with the types of scuba divers of MacCarthy, O'Neill and Williams (2006), which categorised divers into three types: 'hard core divers', 'tourist divers', and 'potential divers'. The 'potential divers' are those who want to learn or try something new and this type of scuba diver is the best match with some respondents who participated in this study that wanted to 'try scuba diving'. Those who pursued scuba diving as their 'hobby' can be considered as 'hard core divers' or 'tourist divers'.

The study, moreover, found that the different climate between the scuba dive tourist's country of origin and the dive destination can be one influential motivation factor. The results of this study indicated that some tourists wanted to go diving in Sihanoukville because their home country does not offer good opportunities for scuba diving due to the local climate and related weather conditions. This claim was supported by one key informant [KI 5] who maintained that the weather in some countries in Europe is very cold, creating bad conditions for scuba diving. Therefore, tourists who come from colder climates want to go diving in warmer climates such as Cambodia.

The above findings corroborate the ideas of Davenport and Davenport (2006) and Wongthong and Harvey (2014) who stated that tropical weather countries have a great advantage in attracting scuba dive tourists from cold climate countries. It can be true that not all regions can offer scuba diving services due to some conditions and the climate is, as validated in this study, one of the major conditions. It can thus be suggested that recreational scuba diving activities are popular in a tropical coastal nation where warm waters with good visibility and attractive biological features offer enticing diving environments (Inglish, Johnson & Ponte, 1999).

In summary, this section has demonstrated and interpreted the various intrinsic motivations behind the participants' decisions to go diving in Sihanoukville. These motivations included the desire to see the undersea world, the desire to try something new, pursuing a hobby, and a desire to dive in a different climate. This section indicated the innate desire of humans to discover life underwater and observe marine flora and fauna. It also indicated that some people enjoy adventurous activities such as diving under the sea and will keep pursuing this activity as their hobby, while other people want to try scuba diving as the advancement of technology offers a great opportunity for humans to access 'under the horizon'.

5.4 Experiences of scuba dive tourists

The third question in this research was 'what are the experiences of scuba dive tourists in Sihanoukville?' The results obtained from this question were pertinent to divers' activities underwater, the likes and dislikes of scuba divers, and other individually unique experiences.

5.4.1 Divers' activities underwater

The most popular underwater activity was taking photographs, which accounted for more than half of the scuba divers (54 per cent). Male scuba divers in particular, rated this activity higher than watching marine life (59 per cent versus 31 per cent). Female divers, by contrast, preferred watching marine life (28 per cent) to taking photographs (20 per cent). According to these results, underwater photography was undertaken predominantly by male divers. This finding is consistent with those of Ince and Bowen (2011) who found that over half of the participating divers took pictures underwater. Ince and Bowen (2011) suggested that taking photographs underwater by scuba divers is a sub-interest speciality of the dive consumption experience. The learning about, and

use of underwater cameras has become an increasing specialist interest for scuba divers whereby 'wilderness types of experience' or 'wilderness feelings' are captured via photography or videography during the dive (Davis, Banks & Davey, 1996; Gazy, Jiddawi & Cesar, 2004).

Photographs taken during a trip can remind tourists of many aspects of their travel experience. In the case of scuba diving in particular, it is highly likely that it is different from typical tourism because photographs taken underwater reveal the marine life living in a deep, undersea world. It is, therefore, likely that such connections that exist between scuba divers' photos of their diving and the feeling of them in real life can turn their diving trip into a particularly memorable experience. The role of photographs in the tourist experience has been well studied long time ago. For example, over three decades ago, Chalfen (1979) explored the important role that photography plays in tourism. Chalfen (1979) found 'taking photographs' is one of the most popular tourists' activities. More recently, Gillet, Schmitz and Mitas (2013) argue that "people who take more pictures on holiday and rate photographing to be important experience more positive emotions and a higher life satisfaction, respectively" (p.37).

The relationship between photography and tourism is important and can contribute to enriching tourists' experiences. For this reason, photographs and, increasingly, the sharing of them via social media is a way that people are able to share experiences, to boast, to remember and to derive 'kudos' as others view their images and are complimentary and/or envious of the experiences. A study done by Lo et al., (2010), for instance, shows that 89 per cent of leisure tourists take photographs and 41 per cent of those tourists posted their photographs online through social media network sites.

Results presented in the previous chapter indicated that 40 per cent of scuba divers watched marine life. These results reflect the fact that marine life was one of the main

attractions in scuba diving. There is a consensus among prior studies that scuba divers, in general, dive to see marine life (MacCarthy et al., 2006; Musa, 2002; O'Neill et al., 2000; Tabata, 1992). The diversity of marine life, especially the presence of unusual or rare species, has been found to be a key factor that contributes substantially to a satisfactory scuba diving experience (Musa, 2002).

5.4.2 Likes and dislikes

One of the main questions in this study sought to explore scuba divers' experiences by asking what they liked the most and what they disliked the most. The most obvious finding to emerge from the analysis was that a majority of scuba divers (69 per cent) liked the 'diving experience' the most. This indicated that the best experience as expressed by scuba divers is the 'diving experience' itself. An international scuba diver [KI 1] for instance, expressed the most memorable experience of the trip, which was: *"It's just the diving"*. This study supports the argument that one of the key factors that cause satisfactory or dissatisfactory experiences in scuba diving is the diving itself (MacCarthy et al., 2006). This is similar to Kler and Moskwa (2013) findings that scuba divers seek underwater experiences by engaging in activities that involve adventure seeking, challenging skills, but they have a desire to gain feelings of excitement and freedom from the diving. This is consistent with one of the findings in this study that the best experience rated by most of the respondents was simply the 'diving experience'.

In addition, Table 7 in chapter four showed that marine life (15 per cent) and the scenery of the dive sites (nine per cent) were rated in the top three most-liked attributes. Although previous studies did not examine the elements that divers liked or disliked the most, factors such as the visibility, diversity of marine life, and the marine environment (scenery) have been determined as key factors that can contribute substantially to a satisfactory scuba diving experience (MacCarthy et al., 2006; Musa, 2002).

With regard to dislikes, almost half (48 per cent) of the participating scuba divers disliked the *weather* the most. This result may be explained by the fact that bad weather conditions such as rain and cloud can cause unwanted distractions for scuba diving. KI 1, for instance, commented: *“I think the visibility wasn’t great”*. This is because scuba divers, in general, expect good visibility underwater so that they can see marine life clearly within an appropriate distance. Bad weather such as rain accompanied by wind can also cause abnormal sea currents, which can lead to difficulty in buoyancy control, thereby causing inconvenience in diving. The current study could not make any comparison with previous studies in terms of what factors scuba divers disliked the most. However, we can infer from some studies such as Ince and Bowen (2011) and Musa (2002) that similar factors, although not specifically considered as dislikes, can lead to ‘dissatisfaction’ in scuba diving. Therefore, bad weather such as rain or cloud could be one of the major factors causing poor visibility and when scuba divers experience poor visibility, it consequently leads to a disappointing experience.

The data revealed that 20 per cent of the participating scuba divers disliked dumped rubbish along the beach and eight per cent disliked rubbish in the water. One of the dive instructors [KI 4] reported: *“The first think they don’t like is the garbage”*. Overfishing, furthermore, was one of the main reasons making scuba dive tourists feeling upset. KI 3, for instance, commented: *“the overfishing and dynamite fishing are a big problem here. So, it is a thing that I would like poeole to be aware of is to try to stop the dynamite fishing”*.

It can thus be suggested that for some scuba divers, this aspect was an important influence on satisfaction with the dive experience.

5.4.3 Other unique experiences

The data analysis provided different responses from the interviews with regard to the individually unique experiences of scuba divers. Scuba divers usually enjoy a memorable experience whenever they see rare things under the water (MacCarthy et al., 2006; Musa, 2002). A whale shark is one of the rarest things that scuba divers can see along the Sihanoukville coast and is a special experience. KI 4 commented that many people have been diving lots of times and yet have never seen a whale shark, but some people who have dived only five times manage to see the whale shark. In this study, one of the scuba divers [KI 4] encountered a whale shark, about 12 metres long, swimming in waters off Koh Tang Island approximately six hours by boat from the Sihanoukville mainland. Prior studies that have noted the importance of marine life have emphasised that the presence of rare species is a significant factor that can contribute greatly to high levels of satisfaction in scuba diving experiences (Musa, 2002).

Additionally, even a tiny creature that a scuba diver has never seen before can also create a unique diving experience. KI 6 in this study commented: *“I’ve seen a few things I’ve never seen before, like things that get in and out from the sand which were very nice”*. This indicates that each individual scuba diving experience is unique. The scuba diving experience is distinct in terms of the attractions seen, the feelings they evoke, and the particular situation the scuba diver faced. For some scuba divers, a positive experience is when they see giant fish, but for others their personally unique experience is when they just see a very tiny creature that they have never seen before.

Emotive responses to experiences are influential for tourists. Jarratt (2015) claimed emotional connections and reactions to destinations are related to tourist’s ‘sense of place’. It has been found that the sea and seascape have an important role to facilitate a distinctive experience showing an enjoyable, beneficial and a part of travellers’ identity

(Jarratt, 2015). In this study, there were a number of expressions revealed by key informants, for example KI 2 commented: *“our divers are very happy”*, KI 6 commented: *“Night dive is very enjoyable”* and KI 7 said: *“...it’s a quiet and relaxed atmosphere...the sunset view was a romantic evening on a peaceful place like Koh Rong Samleom Island”*.

Another common scuba diving experience revealed in this study was some differences expressed by an inexperienced scuba diver [KI 1] and an experienced scuba diver [KI 6]. The data revealed that the inexperienced scuba diver concentrated mainly on the technical elements of scuba diving. That is, as they did not have much experience in using the equipment and being confident in the water, these aspects were seen as the main focus. Even though the visibility was relatively poor, it was still viewed as a positive experience by the diver who commented:

“I think the visibility wasn’t great, but they said if you can dive in this condition, you can dive anywhere. So, in some ways, it’s quite nice to do something more difficult first. Some people come from Egypt where you can see a hundred meters and they come here and they can see what three or four meters...and then they panic. So, where I experience that soon, so I just call out as normal.”

On the other hand, the experienced scuba diver was paying attention to new fish species, coral reefs, and taking photographs. In addition to this, while the inexperienced scuba diver [KI 1] was focusing on the diving equipment and the visibility, the experienced scuba diver [KI 6] was communicating with another scuba diver by sharing what they were seeing underwater.

These aspects are not uncommon in scuba diving tourism because scuba divers have different motivations and experience; and thus, different types of divers have been distinguished (Rice, 1987). The experienced scuba divers have been put into a ‘hard core’ category while the inexperienced scuba divers have been categorised as ‘tourists’

or ‘potential divers’ (Rice, 1987). Therefore, according to these findings, we can see that with regard to the differences in scuba divers’ experiences and activities, divers who have less experience more often concentrate on the diving itself, while those who have more experience are more likely to focus on other benefits associated with diving such as taking photographs, enjoying the marine life, and sharing experiences with other fellow divers (Meisel & Cottrell, 2004).

Lastly, the study revealed another personal scuba diving experience, which related to diving as *learning*. Gaining new knowledge, new skills, and encountering new situations derived from the scuba diving trip were experienced by some scuba divers. These were also associated with some of the motivations for the participating scuba divers in this study who wanted to try scuba diving during their holiday by undertaking a ‘fun dive’ or ‘try dive’. In addition to these, one of the key informants supported the claim that some scuba divers like to go diving during the day time whilst other scuba divers prefer to go diving at night. A possible explanation for this is that some people want to experience something different; some people want to learn about the marine life including corals that are secluded and are not visible or are inactive in the daytime, but these creatures show up at night time. Such an experience is how scuba divers learn something new. A key informant [KI 4] in this study commented:

“Every scuba diver is looking for something new in life. As a diver, you know, you learn everything. You learn every day. Even if you’ve been diving many years, every day you dive, you learn something.”

5.5 Levels of satisfaction of scuba dive tourists

The first question in this study sought to determine the levels of satisfaction of scuba dive tourists in the research location. The most obvious finding to emerge from the analysis was that a vast majority of the participating scuba divers answered positively,

expressing that they were very satisfied (25 per cent) and satisfied (65 per cent), making a total of 91 per cent of the whole sample having had a satisfactory experience. Together with the results from the self-reply questionnaire, the whole sample from the interviews was also reasonably satisfied. It is interesting to note from the self-reply questionnaire findings that in the total respondents, 70 male divers and 26 female divers were satisfied (70 versus 26) and 20 versus 17 of male and female divers were very satisfied, respectively. These results indicated that male divers seem to be more satisfied than female divers.

In contrast to earlier findings, however, no evidence of the claim that female scuba divers are more satisfied than male scuba divers was detected. A study conducted by Musa (2002), in particular, found that “females are likely to achieve higher overall satisfaction than males” (p.201). This does not appear to be the case in this study.

These results, therefore, need to be interpreted with caution. In this study, although the gender distribution of those participating scuba divers has shown that the number of male divers was more than female divers (65 per cent versus 35 per cent), by contrast with Musa’s (2002) study, this study still argues that males are more likely to achieve higher overall satisfaction than females. This is because, firstly, the findings of this study have demonstrated that the overall satisfaction of scuba divers was dominated by males (70 versus 26). Secondly, the market profile of the adventurous marine sport and leisure activities such as scuba diving is dominated by men (Jennings, 2007; Orams, 1999), which means that men are more motivated to undertake scuba diving than women (Dimmock, 2007), more men want to go diving to take underwater photographs than women (Rouphael & Inglis, 1997), and this may be due to the enjoyment men obtain from diving. Such enjoyment, accordingly, reflects the way that men are more likely to be satisfied, thereby encouraging them to undertake more and more diving.

Furthermore, to measure tourist satisfaction, Tribe and Snaith (1998) suggested that it is important to look at the way tourists evaluate tourism attributes. The results of the current study showed that respondents were generally satisfied with the attributes, and *social interaction* for instance, was rated the most satisfying attribute ($\bar{x}=4.30$, std $\sigma=0.706$), while the *guide (dive instructors)* received the second highest ranking ($\bar{x}=4.24$, std $\sigma=1.076$). The *weather*, in contrast, was rated the most unsatisfactory attribute ($\bar{x}=3.22$, std $\sigma=1.076$).

We can see that many scuba divers were satisfied with the opportunity to socialise with other people. This aspect matches those observed in previous research. Musa (2002) found that social aspects, such as meeting new people and the opportunity for making friends, can have a substantial influence on diver satisfaction. MacCarthy et al., (2006) also found that satisfaction with diving can be enhanced by sharing experiences and lifestyles with other divers. Carter (2008) stated that satisfactory dive experiences can be gained through socialisation, such as via buddy relationships, as well as from staff efficiency and friendliness. The results revealed by KI 7 in this study, showed that when some scuba divers get out from the water after diving, they often discuss with their fellow divers what they have seen underwater although they may have never met before. In general, therefore, it seems that ‘social interaction’ plays a very important role in contributing to satisfying scuba diving experiences.

Scuba dive tourists, in addition, can be satisfied because of their dive instructors. This is in agreement with Aiello’s (1998) findings which showed that the role of marine tour operators is an important factor that can determine dive tourists’ satisfaction with the experience. During a diving trip, the dive instructors can have a major influence on divers’ satisfaction by the provision of activities such as giving divers opportunities to relax, dive or snorkel, swim, and learn about the marine environment through guiding.

Another important aspect is the weather, which is one factor that can significantly influence scuba divers' satisfaction or dissatisfaction. Data analysis of this study showed that the weather was rated the most unsatisfactory attribute ($\bar{x}=3.22$, std $\sigma=1.076$). When all respondents were asked what they disliked the most, the answer was also the weather. This is because most respondents experienced rainy weather conditions when they were sitting on a boat or about to dive. The feeling of being in the middle of the sea with windy and cloudy weather or perhaps in the rain, would have affected a scuba diver's satisfactory experience. This result is similar to a study conducted by Ince and Bowen (2011) which found that bad weather and sea conditions significantly influenced divers' safety especially in the actual diving itself, since the conditions in the water can be affected.

It is, therefore, likely that such connections exist between the weather and underwater visibility. Admittedly that underwater visibility can be affected by a range of factors such as the presence of marine micro-organisms, algae, local run-off and discharges, but settled weather with sunny, blue skies can result in good visibility. On the other hand, weather with high winds and seas, cloud and rain can result in poor visibility for diving.

One of the key informants [KI 4] in this study, supported the fact that the level of satisfaction with scuba diving is often dependent on visibility. He/she said:

"It depends on visibility. Even if you dive in Australia, in the Great Barrier Reef or anywhere that is a good place to dive, if the visibility is not that good you don't enjoy the diving at all."

This result is consistent with results obtained in Musa (2002) that poor underwater visibility was one of the main factors causing dissatisfaction among scuba divers in Sipadan. "If visibility worsens, visitor satisfaction and probably the sustainability of the dive operations in Sipadan will be compromised" (Musa, 2002, p.203). One of the key

factors, therefore, that can cause satisfactory or dissatisfactory experiences in scuba diving is the quality of the diving itself (MacCarthy et al., 2006).

The data from this study, furthermore, showed that some scuba dive tourists in Sihanoukville were satisfied when they saw beautiful scenery ($\bar{x}=3.94$), fish species ($\bar{x}=3.93$), and coral reefs ($\bar{x}=3.80$). These tourism attributes are important factors that can determine scuba divers' satisfaction because these attributes are key attractions that the divers want to see. These findings support previous research into this area, which links marine attractions and scuba divers' satisfaction. O'Neill et al., (2000) emphasised that beautiful marine life such as fish, shellfish, coral reefs, etc., are major aspects in the satisfaction of scuba divers. To compare with other diving attributes, scuba divers prefer an interesting marine geological environment and a high diversity of marine flora and fauna as priorities over cost, boat design, and other human factors (Tabata, 1992).

Especially in this study, KI 1 was satisfied because he saw a variety of marine life. KI 1 commented:

"I think we saw more than that actually. We saw a low really big red starfish like this, about four of them, a stingray but a small one, ...purple fish, hmm what else, hundreds of sea urchins,... clown fish, large amount of coral, and lots, lots of fish."

This study achieved rich information with regard to the satisfaction of the participating scuba divers including the following examples:

"I'm pretty satisfied. Overall is quite good."[KI 1]

"I've seen a few things I've never seen before like things that get in and out from the sand which were very nice. Coral reef was good, very impressed, variety of them."[KI 6]

"Because we have good service, we have good equipment. We maintain, we test our air and of course people who are working here have lots of experience in the diving industry."[KI 2]

"I think most of the time they are satisfied. We have lots of customers who are happy."[KI 3]

"...just you know friendly staff members, friendly people, relaxed diving, relaxed atmosphere, nice diving, the whole day is really relaxed."[KI 3]

In summary, this section discussed a number of factors that can influence scuba divers' satisfaction and dissatisfaction. The results indicated that the whole study sample was satisfied. The current study argued that male scuba divers achieve higher levels of satisfaction than do their female counterparts. Social interaction, guidance from dive instructors, and the good weather are some of the main key factors that can contribute to the satisfaction of scuba divers. Nevertheless, bad weather, which can cause poor underwater visibility, is a main factor that can lead to an unsatisfactory experience for the divers. Lastly, the marine environment and marine life such as beautiful scenery, fish species, and coral reefs have been confirmed as another crucial element that contributes to overall satisfaction.

5.6 Issues concerning scuba dive tourists

The results of the study have revealed several issues concerning scuba dive tourists in Sihanoukville. These issues included poor waste management, marine conservation, and illegal fishing.

The study received many strong responses concerning a number of problems related to waste disposal. The results indicated that divers considered that both solid and liquid waste were not managed properly, particularly on Koh Rong Island, and this problem caused unpleasant experiences for scuba dive tourists. The response from an interviewee [KI 1] was *"Yeah, litter definitely"*. This answer was very quickly put forward when asked about any issues concerning scuba dive tourists. Since tourism development has been increasing, there is lots of building work on both Koh Rong and Koh Rong

Samleom Island and this development has been producing much waste. This is supported by KI 2 in this study who commented *“well, there is also lots of building on the island...and now because there is so much building on the island and of course there will be also where all the waste going”*.

There were two main reasons that have contributed to this problem. First, the increase in tourism development has led local people, as well as local tourism vendors, to increase their daily consumption, thereby producing more waste. This waste, such as sewage discharge, flows directly into the sea and solid waste, such as bottles, cans, and plastic bags, are often seen on the beach. This does not mean that the local government is not taking any action, in fact, there are signs educating local people and tourists not to litter, but the rules have not been enforced.

This problem in the Sihanoukville province is not the only such case. Musa (2002) found overdevelopment on the island of Sipandan created lots of problems that can affect scuba divers' experiences. In reality, when there is an increased number of tourists, tourism vendors may increase their production of both goods and services to serve the increasing number of tourists. This links to the second reason for the waste problem, which is that it is not only caused by the local people but is also because of the tourists themselves. The results revealed by an interviewee [KI 4] showed that Koh Rong is a very small island and as it has begun to develop, so more rubbish has been produced and people do not know how to dispose of it properly. It is not only locals, there also some tourists that have behaved inappropriately on the island. KI 4 commented:

“Sometimes, the tourists when they are at their country, they are very good at following the rules, but when they go out to another country like Cambodia, and they do the same like Cambodians, that's not good.”

With regard to marine conservation, there was widespread concern over the various negative impacts this may have on current marine resources. The results of the study have indicated that marine resources such as coral reefs and some fish species are under threat from human activities. This is one of the major issues that can also have a negative impact on scuba divers' experiences. This is closely related with the problem discussed above and specifically relates to solid waste and sewage. The results indicated that even though tourism development in both Koh Rong and Koh Rong Samleom Islands was small scale, the environmental impact can affect the natural habitat to a certain extent. "Protecting the marine life" was a common response from key informants and the study takes this comment into consideration in further recommendations for key stakeholders.

In addition to the environmental impact on natural habitats, overfishing and particularly illegal fishing can also cause problems. The concern over such issues is growing in many marine tourist destinations. In the coral triangle region, for example, Cabral, Cruz-Trinidad, Geronimo and Aliño (2012) stated overfishing exceeds the estimated maximum sustainable yield of Malaysia, Indonesia, Papua New Guinea, and the Philippines. They also stated that there are signs of overexploitation of other marine life such as coral reefs. In Indonesia, specifically, due to the overfishing, Exton (n.d) observed a number of extremely high catches of juvenile age classes in fish species and called for immediate actions to reduce overall fishing pressure. In Calamianes Islands of the Philippines, furthermore, Fabinyi (2010) revealed the intensification of fishing and the increasing of tourism on the islands has become a heated debate. In short, the problems that are occurring in the wider coral triangle region are also present in Sihanoukville.

The most striking result to emerge from the data was illegal fishing close to dive sites. The findings provided evidence that there are illegal fishing activities on the Sihanoukville coastline and those fishing activities have dramatically increased negative experiences for scuba divers. The findings indicated the presence of domestic overfishing, with Vietnamese and Thai illegal fishing boats coming to fish in Cambodian coastlines very near to dive sites. All key informants in this study such as scuba divers, dive instructors, and especially boat operators were very aware of this issue and they confirmed these illegal fishing boats have been generating public concerns over the impact they might be having on marine resources. Respondents expressed strong concerns that if there is no effective action on this problem, then there will soon be no more fish in that area; and thus, there will be no scuba divers either.

Another major and more serious issue was dynamite fishing. The data analysis provided overwhelming complaints about the illegal fishing activity that uses dynamite. KI 3 believed that: *“The dynamite fishing is a big problem here [Koh Rong Island]”* and KI 1 also commented: *“They’re saying places like Koh Tang Island the visibility is really good, but because of the Vietnamese illegal fishing boats there, so there is no fish there”*. Illegal fishing activities and especially dynamite fishing have become a controversial issue amongst concerned parties in Sihanoukville because these activities have a dramatic effect on scuba diving tourism. Thus, this study provides additional evidence to that provided by researchers such as Fabinyi (2008) and Fabinyi (2010) who identified the growing conflict between scuba diving tourism and fisheries in the coral triangle region.

5.7 Future changes to scuba diving in Sihanoukville

Some interesting comments with regard to future changes to scuba diving in Sihanoukville that scuba divers wanted to see included; artificial reefs and wrecks,

stopping illegal fishing, and the role of some key stakeholders to participate in sustaining and improving the scuba diving experience in Sihanoukville.

5.7.1 Artificial reefs and wrecks

The results of the study showed that having artificial reefs and wrecks were considered to be interesting attractions that would add to the current marine flora and fauna. Key informants such as dive instructors, in particular, proposed to have these human-made attractions by sinking old ships, tanks, or airplanes left from previous wars in Cambodia. Having these human-made attractions underwater can provide a number of benefits for scuba diving tourism. One of the main benefits would be the fact that the country may attract a lot more scuba dive tourists because of their attractiveness to divers (Musa & Dimmock, 2013). There are examples in Cambodia's neighbouring countries such as Thailand and the Philippines, where KI 4 in this study suggested that artificial reefs and wrecks can enrich the experience of scuba divers in addition to the natural marine life. Another possible reason for having wrecks may be due to the fact that wrecks can attract fish and coral can grow on and around the wrecks. All of which are believed to be very good attractions for scuba divers.

It has been suggested that artificial reefs and wrecks can play a very important role in developing marine ecosystems and habitats making them attractive for scuba divers (Edney & Howard, 2013). Edney and Howard (2013) claim artificial reefs and wrecks are attractive to dive tourists because the tourists can feel "a sense of discovery, mystery, history and beauty" (p.134). Thus, artificial reefs and wrecks can be of significant appeal to scuba divers.

5.7.2 Roles of key stakeholders

Some of the findings suggested a different role for key stakeholders, which was to be more accountable to improving the scuba diving experience in Sihanoukville. First and foremost, the study found that the government plays a vital role in improving the scuba diving experience. The government was regarded as the key stakeholder that possesses the authority to combat illegal fishing activities, because a vast majority of responses concentrated predominantly on illegal fishing. Many scuba divers called for a stop to overfishing surrounding diving sites. Furthermore, the results indicated that the government should promote marine awareness such as natural resource management and marine environmental protection. Hence, government agencies, it was suggested, should promote practical activities to clean up trash on the beach.

Next, although the results did not show any significant role for the marine tour operator, a few interesting comments were noted. These comments suggested marine tour operators should upgrade their equipment. Some equipment used during the diving trip was quite old. This included boats – most of which were the more traditional boats, masks, fins, buoyancy control devices – some of which were old and decayed, wetsuits, and some snorkels that leaked. In addition to these, the results indicated that some dive instructors provided poor explanations about marine information such as weather conditions and types of fish species that divers could expect to see. It can, therefore, be suggested that the comments pertinent to the role of marine tour operators mainly associated with the technical elements in diving. At this point, it is very important to take notice of such technical elements because they are also core aspects in affecting the scuba dive experience including safety.

Safety in scuba diving is regarded as one of the major factors that can greatly influence on a dive destination. Research done by Walker (2013) confirms the importance of the

safety in scuba diving because the diving can cause physical and mental problems if scuba divers do not participate in an appropriate training course to obtain skill and knowledge about scuba diving before dive. Walker (2013) found the top three issues in contributing to diving related fatalities are drowning, pulmonary barotrauma (PBT), and cardiovascular problems.

In this study, a few of the key informants expressed safety concerns, such as KI 1 who commented “...*hmm what happen if you lose your mask and stuff...*”, while KI 2 who was one of the dive instructors commented that scuba diving can be a dangerous water sport but he/she assured the quality of his/her diving equipment such as “*We have good equipment, we maintain, we test our air*”. These expressions show the importance of safety in scuba diving. For these reasons, Walker (2013) suggests equipment used should be in good condition because equipment such as buoyancy vest controls, wetsuits, weights, masks, tanks, and fins not only play a key role in helping scuba divers to enjoy the diving, but can have safety implications if they are not in good condition for use.

Finally, the study revealed scuba dive tourists themselves as one of the key stakeholders that can contribute to improving the dive experience in the area. The results suggested that tourists should not litter (76 per cent of the total answers). Although the results showed there was only one diver out of the total sample size that touched the coral reefs, the more dive tourists touch the reefs the more negative impacts might have on those coral reefs. This may be a starting point of an alert of the impacts might have on those coral reefs because previous studies have shown evidence that inappropriate behaviour of scuba divers such as reef touching can result in degradation.

There is a wide range of literature reporting on scuba divers’ behaviour and the impacts on coral reefs (see for example, Barker & Roberts, 2004; Roupahel & Inglis, 1997;

Rouphael & Inglis, 2001). Rouphael and Inglis (1997) provided evidence that fins of scuba divers cause most of damage to the coral reefs, followed by direct touching using hands and in some cases contacting the reef with knees and diving equipment. A further study done by Rouphael and Inglis (2001) revealed that male scuba divers, underwater photographers, and first time divers are those who cause most reef damage.

The scuba diving industry as a whole has been claimed to have great impacts on coral reefs by Hall (2001) who suggested effective management mechanisms should be in place. Hall (2001) argues, that in addition to diver behaviour, boat anchors, sewage discharge, oil spills, and construction run-off are also serious threats to marine resources. In short, we can see that reef touching by scuba divers can cause adverse effects on marine resources, especially coral reefs, however a range of other factors also place reefs at risk of damage.

This section has discussed the important points to emerge from the study's findings and included a preference for seeing wrecks, concern over illegal fishing and overfishing, and the role of key stakeholders in improving the dive experience in Sihanoukville. The study identified the government, marine tour operators, and scuba dive tourists as the three key stakeholders and these stakeholders have their different roles to play in improving the dive experience.

5.8 A diagram of satisfactory experience in scuba diving

Based on the aforementioned findings and interpretations, the study proposes a diagram (Figure 5.1) that summarises the influences on scuba diver satisfaction in Sihanoukville and depicts three major components. First, there are a number of important positive influences on satisfaction such as the opportunity that scuba divers can have to socialise with other people, guidance from dive instructors, services provided by the marine tour

operator, the diversity of fish species, the attractiveness of the coral reefs, good boat design and good weather. Second, the diagram outlines factors which negatively impacts scuba diver satisfaction in Sihanoukville. These factors include overfishing activities, illegal fishing (particularly the use of dynamite), rubbish, threats to marine life, and most importantly bad weather conditions. As a consequence, the diagram advocates for management actions such as stopping or reducing illegal fishing, environmental protection, and marine conservation as key priorities for the sustainability and success of scuba diving tourism in Sihanoukville.

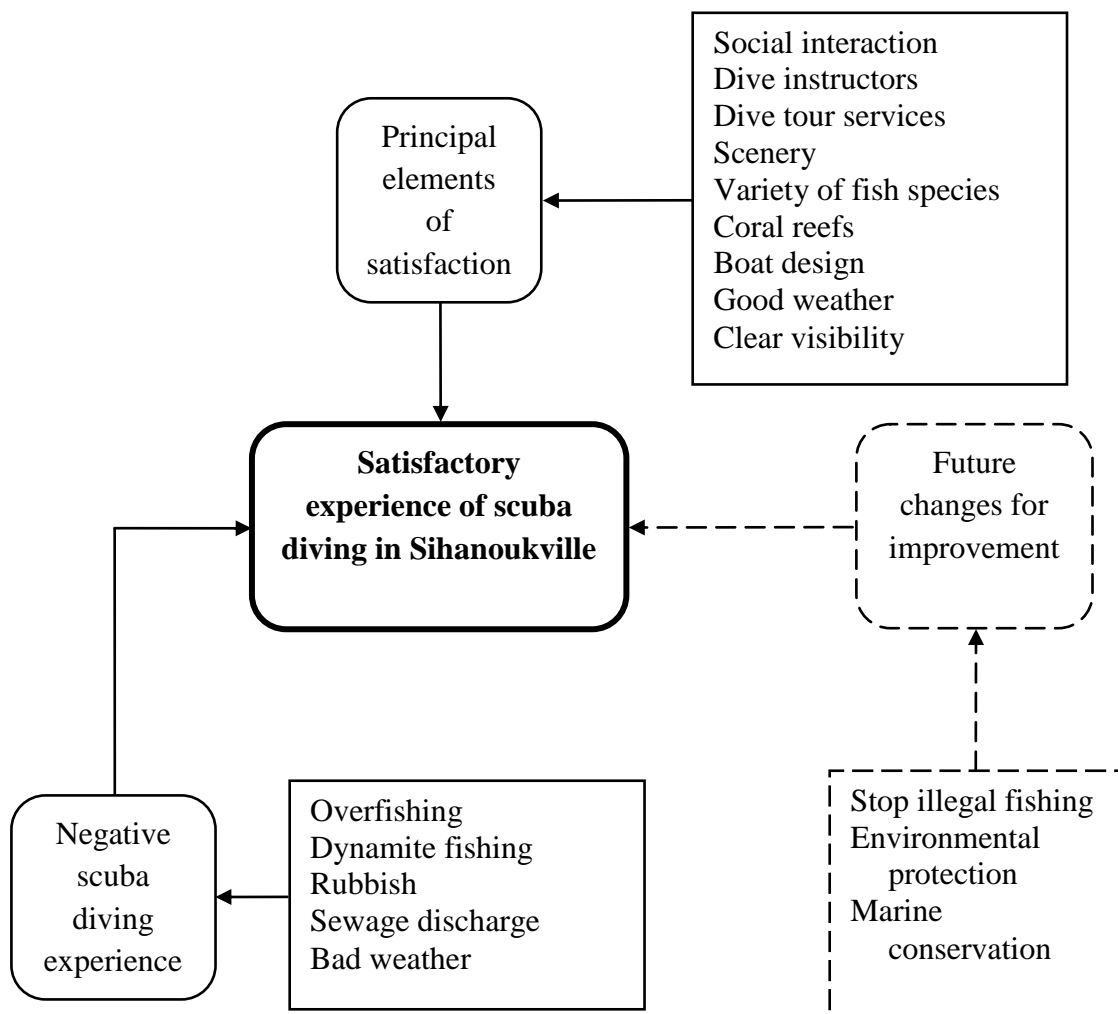


Figure 5.1: Factors influencing a satisfactory experience of scuba diving in Sihanoukville

In brief, this chapter highlighted significant findings of the study and their interpretations. This chapter clarified key demographic characteristics of scuba dive tourists and their core motivations to go diving in Sihanoukville. It also explained some unique and memorable experiences as well as the upsetting experience of scuba divers. The chapter explained some certain extent that scuba divers were satisfied of their trip through various important aspects that have caused divers to be satisfied. This chapter described some issues concerning scuba divers and clarified key changes that scuba dive tourists wish to see in the future. Finally, the chapter summarised important factors in a diagram that influence a satisfactory experience of scuba diving in Sihanoukville accompanying a brief explanation of major components of the diagram.

Chapter 6 Conclusion

This final chapter summarises important findings from the study, reflects on the fulfilment of the research objectives and research questions, acknowledges some limitations and suggests potential areas for future research. Finally, some recommendations for management are offered.

6.1 Summary of the study

This study selected the Sihanoukville province, Cambodia as a research location from which to explore two main scuba diving sites: Koh Rong Island and Koh Rong Samleom Island. The purpose of the study was to investigate the experiences and levels of satisfaction of scuba dive tourists and to create a demographic profile of scuba divers in the area. Since there is no published empirical research on scuba diving tourism in Cambodia, this study adds new information to the body of literature and thereby increases our understanding of this activity in Sihanoukville.

This research employed a pragmatic mixed methods approach using both quantitative and qualitative research techniques. The total usable sample size of the study was $n=147$ representing a completion rate for the self-reply questionnaires of 93 per cent. In addition to the self-administered questionnaires used as data gathering instruments in this study, there were nine key informants who participated in semi-structured interviews adding depth and insight to the data. Important demographic characteristics of respondents such as gender, age, country of origin, income status, and level of education were obtained along with key findings about experiences and levels of satisfaction.

6.2 Review of important findings

The main findings of this study were:

1. *Demographic profile:* Scuba divers who visited Sihanoukville were dominated by younger people between the ages of 18 to 40 years old. Males accounted for 65 per cent and 35 per cent were female. A vast majority were from Western countries and one third had an income between US\$10,001 to US\$50,000 per year. Most scuba divers (89 per cent) held a university degree. Almost half (48 per cent) had travelled alone to Sihanoukville and many of them became aware of the local scuba diving by searching for information on the internet. The most common length of stay was two nights (33 per cent) and three nights (29 per cent). One of the most significant findings to emerge from this study is that 89 per cent of the scuba divers were first-time visitors indicating that Cambodia is a new and emerging scuba diving destination.
2. *Motivations:* Over half (52 per cent) of the participating scuba divers were motivated to see the undersea world. For others, motivations included having the desire to try something new, pursuing scuba diving as a hobby, and the desire to dive in a different climate.
3. *Experiences:* More than half of scuba divers (54 per cent) took photographs underwater. While more male divers were interested in taking underwater photographs, most female divers were interested in watching marine life rather than underwater photography. A majority of scuba divers (69 per cent) liked the 'diving experience' the most, and almost half of the divers (48 per cent) disliked the 'weather' the most. Some scuba divers had the experience of seeing

something new underwater that they had never seen before. Some other scuba divers had negative experiences due to overfishing and poor waste management.

4. *Satisfaction*: Ninety-one per cent of the total scuba divers had a satisfactory experience. Male scuba divers were more satisfied than their female counterparts. All scuba divers were generally satisfied with some of the key attributes such as social interaction, the guides (dive instructors), the scenery, fish species, coral reefs, and the weather.
5. *Issues concerning scuba divers*: This study has found that generally scuba divers were concerned about poor waste management such as the littering of plastic bags, bottles and cans, and sewage discharge into the sea. This issue links to a serious concern over the negative impacts this may have on current marine resources such as coral reefs and fish species. The most striking result to emerge from the findings was the illegal fishing being undertaken close to dive sites and, in particular, dynamite fishing.
6. *Future changes for improvement*: Scuba divers wanted to see artificial reefs and wrecks in addition to the current natural marine attractions. They called for a stop to illegal fishing, particularly dynamite fishing, because those fishing activities can greatly affect the scuba diving experience.

Research question 1: What are the demographic characteristics of scuba dive tourists in Sihanoukville? This study has provided a baseline scuba divers' profile for Sihanoukville including information such as gender, age, country of origin, income status and level of education.

Research question 2: What are the motivations of scuba dive tourists who go diving in Sihanoukville? The study has provided important insights relevant to this question.

These are the desire to see the undersea world, the desire to try something new, pursuing scuba diving as a hobby, and the desire to dive in a different climate.

Research question 3: What are the experiences of scuba dive tourists in Sihanoukville?

The findings shown in chapter 4 provided evidence that important experiences for scuba divers in Sihanoukville are pleasant experiences of taking photographs underwater, the enjoyment of watching marine life, and the enjoyment of undertaking scuba diving activities in an untouched dive site of Sihanoukville. However, the study has found illegal fishing activities, poor waste management, and bad weather were those that can cause negative diving experience.

Research question 4: What are the levels of satisfaction of scuba dive tourists in Sihanoukville? Overall satisfaction with scuba diving in Sihanoukville is high, however, a number of specific issues cause dissatisfaction including the weather, pollution and illegal and destructive fishing practices.

Research question 5: What issues concern scuba dive tourists in Sihanoukville? Not surprisingly, there is a strong connection between factors influencing dissatisfaction and issues concerned scuba diving tourists. In particular major issues include poor waste management, especially sewage discharge that can be a big threat to marine life. The most striking result to emerge from the findings was the illegal fishing being undertaken close to dive sites and, in particular, dynamite fishing.

Research question 6: What changes do scuba dive tourists in Sihanoukville wish to see in the future? The study has found some major changes that scuba dive tourists in Sihanoukville would like to see in the future. These changes were related mainly to waste management, fishing control, and marine protection. These results have important implications for management of scuba diving in the area.

6.3 Limitations of the study

There were a number of limitations that should be considered when interpreting the results of this study. The limited sample size (147) and short time period over which the data were gathered means that the inferences regarding the entire population of scuba divers visiting Sihanoukville must be viewed with caution.

In addition, the study focussed primarily on diving visitors and a limited number of local dive operators. No data were collected on the views, characteristics and activities of the local community, yet these people are important stakeholders in the development of the wider tourism industry in the area. Furthermore, the collection of data via a self-administered questionnaire has limitations in that respondents were limited in terms of the time they could give and level of detail and explanation on the questionnaire. Some bias in the sample may also exist given that only those divers who returned to the dive shop after the completion of the dive voyage were asked to complete the questionnaire.

6.4 Suggestions for future research

Because this is the first empirical study about scuba diving tourism in Cambodia, many questions have been raised. Therefore, it is recommended that future research be undertaken in the following areas:

- 1) Extending the research to include all seasons and increase the sample size and engagement with other stakeholders (such as the local tourism brokers) in the diving tourism industry.
- 2) Include the local community in Koh Rong Island and Koh Rong Samleom Island to determine how they are affected by the rise of scuba diving tourism or how local people perceive the current development of scuba diving tourism.

- 3) Consider the likely economic impact from the development of scuba diving tourism. This should focus on the distribution of economic revenue to relevant involved parties such as the private sector, government agencies, and local people.
- 4) Focus on the effect of the intensification of fishing in Sihanoukville on marine tourism. The current study has focused only on the experiences and satisfaction of scuba divers, and it has not focused in detail on the intensification of fishing. This topic would be of potential interest because it can greatly influence the sustainability of scuba diving in Sihanoukville.
- 5) The potential of artificial reefs and wrecks. Since the findings of this study have suggested that scuba divers would like to see artificial reefs and wrecks, future studies may want to consider how these attractions could be made available to tourists.

6.5 Recommendations

Although, the increasing coastal and marine tourism, particularly scuba diving tourism, has drawn much attention from the local community, marine tour operators, and the government, it has been found that there is a lack of research in this field. Furthermore, problems have been found such as overfishing and poor waste management which greatly influence the experience of scuba divers. However, solutions to these issues have yet to emerge. Thus, this study formulates the following practical recommendations for some key stakeholders.

- 1) The Ministry of Tourism should work cooperatively with the Fishery Administration supported by Sihanoukville's police force to combat illegal fishing and more importantly to eliminate dynamite fishing. Unless the

government adopts and implements this suggestion, illegal fishing will not be eliminated from dive sites around Sihanoukville.

- 2) The Department of Environment, based in the Sihanoukville province, should reinforce the law with regard to waste disposal such as solid waste and sewage discharge, and fines should be imposed on offenders. This is a very important point because the findings of this study have suggested that the satisfactory experience of scuba dive tourists can be adversely affected by this issue.
- 3) To sustain the level of satisfaction of scuba dive customers, marine tour operators should carefully maintain their diving equipment because the study has found that some old equipment and other degraded diving gear can reduce the levels of satisfaction.
- 4) Since the study has found a number of threats to marine life, a key policy priority should therefore be to plan for the long-term care of marine life. The Fishery Administration, the Department of Natural Resource Management of the Ministry of Environment, and related non-government organisations that work on marine conservation should work cooperatively on this key policy priority.
- 5) An important consideration for education in the local area is that coastal and marine tourism, in general, and scuba diving tourism, in particular, should be included in study curricular. The aim would be to improve understanding of the importance of the marine resources that can be key tourist attractions for Sihanoukville.

In conclusion, as no research has previously been undertaken on scuba diving tourism in Cambodia, this exploratory research is regarded as the first empirical study in this field. While coastal and marine tourism continues to grow in the country, management actions

(or inactions) are occurring in the absence of any empirical research, which means that the research presented in this thesis, to some extent, contributes to building an improved understanding and adds to the scant literature on coastal and marine tourism in Cambodia. This study has particularly explored the experiences and satisfaction of scuba dive tourists visiting the Sihanoukville province of Cambodia. This exploratory research has provided the first insights into the country's growing coastal and marine tourism and specifically, the study has built up a demographic profile of scuba dive tourists and has revealed various diving experiences as well as levels of satisfaction with the diving trip. More importantly, the study has outlined scuba dive sites are in a competitive environment whereby tourists 'shop around' and can choose from a range of alternative locations which those such as dive sites in the Southeast Asian nations that have been discussed in this research. Thus, the conservation of the marine ecosystems in the Sihanoukville dive areas are important for the area to remain attractive and competitive in the international scuba diving market.

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Glossary of terms

Diving tourism	an activity of people travelling away from their primary place of residence and staying overnight with the primary purpose of participating in scuba diving activities
Dynamite fishing	one of the illegal fishing activities where fishers throw dynamite or other explosive devices underwater and in order to kill and harvest fish
Hobby	the type of leisure activities that involve an active outdoor recreational activity such as scuba diving
Marine life	any flora and fauna within the ocean
Sihanoukville	a province in Cambodia that is located in the north-west of the country. The place where this study was conducted.
Stakeholder	Parties or persons with an interest or concern about the issue being investigated

List of abbreviations

ASEAN	Association of South East Asian Nations
AUT	Auckland University of Technology
AUTEC	Auckland University of Technology Ethics Committee
CT	Coral Triangle
DANIDA	Danish Institute Development Agency
DoT	Department of Tourism
GDP	Gross Domestic Product
HTA	Hawaii Tourism Authority
ICEM	International Centre for Environmental Management
KI	Key Informant
MoE	Ministry of Environment
MoT	Ministry of Tourism
MPAs	Marine Protected Areas
NGO	Non-Government Organisation
NIS	National Institute of Statistics
ORV	Off-Road Vehicles
PADI	Professional Association of Dive Instructors
PIS	Participant Information Sheet
PWC	Personal Watercraft
SCUBA	Self-Contained Underwater Breathing Apparatus
SPSS	Statistical Package for the Social Sciences
USD	United States Dollars

Appendices

Appendix 1: Self-reply questionnaire



Self-reply questionnaire

“Experiences and satisfaction of dive tourists in Cambodia: A case study of Sihanoukville”

This questionnaire will take about 8 to 10 minutes. It is anonymous; please do not write your name. By completing questionnaire you are indicating your consent to participate in this research.

Thank you for your contribution to this research.

Your experience and satisfaction

1. How satisfied are you with your diving trip in Sihanoukville?

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Neutral
- ☐ Dissatisfied
- ☐ Very dissatisfied
- ☐ Don't know

2. What motivates you to dive in Sihanoukville? (You can tick more than one)

- ☐ Wanted to try scuba diving
- ☐ My hobbies
- ☐ Just want to do like others
- ☐ Wanted to see undersea world
- ☐ Learning about the marine environment
- ☐ Other (please specify).....

3. Please indicate your level of satisfaction with the following attributes (please circle):

Attributes	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied	Don't know
Coral reef	5	4	3	2	1	<input type="checkbox"/>
Fish species	5	4	3	2	1	<input type="checkbox"/>
Scenery	5	4	3	2	1	<input type="checkbox"/>
Weather	5	4	3	2	1	<input type="checkbox"/>
Social interaction	5	4	3	2	1	<input type="checkbox"/>
Tour guide	5	4	3	2	1	<input type="checkbox"/>
Boat design/type	5	4	3	2	1	<input type="checkbox"/>
Services provided	5	4	3	2	1	<input type="checkbox"/>
Others (please specified)	5	4	3	2	1	<input type="checkbox"/>

4. What do you like to do under the water? (You can tick more than one)

- ☐ Seeing marine life
- ☐ Touching reefs
- ☐ Photographing
- ☐ Others (Please specify).....
- ☐ Playing with fish

5. What do you **like most** about your diving trip? (Please tick **ONLY** one)

- ☐ Beach
- ☐ Scenery
- ☐ Weather
- ☐ Marine life
- ☐ Food
- ☐ Accommodation
- ☐ Local people
- ☐ Others.....
- ☐ Diving experience
- ☐ Pricing
- ☐ Boat tour

6. What do you **dislike most** about your diving trip? (Please tick **ONLY** one)

- ☐ Beach
- ☐ Food
- ☐ Diving experience

- | | | |
|--------------------------------------|--|------------------------------------|
| <input type="checkbox"/> Scenery | <input type="checkbox"/> Accommodation | <input type="checkbox"/> Pricing |
| <input type="checkbox"/> Weather | <input type="checkbox"/> Local people | <input type="checkbox"/> Boat tour |
| <input type="checkbox"/> Marine life | <input type="checkbox"/> Others..... | |

Travel Behaviour Characteristics

7. Are you traveling:
- | | | |
|--|---|--------------------------------------|
| <input type="checkbox"/> Alone | <input type="checkbox"/> With friends & relative | <input type="checkbox"/> With couple |
| <input type="checkbox"/> In a group tour | <input type="checkbox"/> Others (Please specify)..... | |
8. How do you know about diving in Sihanoukville?
- | | | |
|--|---|--|
| <input type="checkbox"/> Dive websites | <input type="checkbox"/> Used to dive here before | <input type="checkbox"/> Told by friends/relatives |
| <input type="checkbox"/> Travel agencies | <input type="checkbox"/> Guide books | <input type="checkbox"/> Others..... |
9. How many times have you dived in Sihanoukville?
- | | | |
|-------------------------------------|--------------------------------------|--------------------------------------|
| <input type="checkbox"/> First time | <input type="checkbox"/> Second time | <input type="checkbox"/> times |
|-------------------------------------|--------------------------------------|--------------------------------------|
10. How long are you going to stay in Sihanoukville?
- | | | |
|--------------------------------------|-------------------------------------|---------------------------------------|
| <input type="checkbox"/> One night | <input type="checkbox"/> Two nights | <input type="checkbox"/> Three nights |
| <input type="checkbox"/>nights | | |
11. What activities do you do besides diving?
- | | | |
|---|--------------------------------------|---------------------------------------|
| <input type="checkbox"/> Only diving | <input type="checkbox"/> Snorkelling | <input type="checkbox"/> Swimming |
| <input type="checkbox"/> Sun bathing | <input type="checkbox"/> Fishing | <input type="checkbox"/> Sight seeing |
| <input type="checkbox"/> Others (please specify)..... | | |
12. In the future, will you come to dive in Sihanoukville again?
- | |
|--|
| <input type="checkbox"/> No, because..... |
| <input type="checkbox"/> Yes, because..... |

Demographic Characteristics

13. Your gender : ☐ Male ☐ Female
14. Your age :years
15. Nationality :
16. Please tick your income range (annually USD):
- | | | |
|---|---|--|
| <input type="checkbox"/> \$0-\$5,000 | <input type="checkbox"/> \$5,001-\$10,000 | <input type="checkbox"/> \$10,001-\$50,000 |
| <input type="checkbox"/> More than \$50,000 | <input type="checkbox"/> not applicable | |
17. What level of education have you completed?
- | |
|---|
| <input type="checkbox"/> Postgraduate |
| <input type="checkbox"/> Undergraduate |
| <input type="checkbox"/> High school |
| <input type="checkbox"/> Primary school |
| <input type="checkbox"/> No schooling |

Your comments

18. What should be done to improve diving experiences in Sihanoukville?
-
-
19. What should marine tour operators do to improve services?
-
-
20. What should government agencies do for better dive management?
-
-
21. What should dive tourists do to contribute to dive management
-
-

Thank you very much!

“Experiences and satisfaction of dive tourists in Cambodia: A case study of Sihanoukville”

1. What motivates divers to come diving in Sihanoukville?

2. To what extent are they satisfied with their diving trip? Why or why not?

3. What do they like the most about their diving trip in Sihanoukville?

4. What don't they like the most from their dive experience in Sihanoukville?

5. Are they satisfied with services provided by the tour operator? Why or why not?

6. What do they usually do under the water?

7. What else do they do in Sihanoukville besides diving?

8. Do they want to come diving again in Sihanoukville? Why or why not?

Your comments

9. What should be done to improve diving experience in Sihanoukville?

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10. What should marine tour operators do to improve services?

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11. What should government agencies do for better dive management?

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12. What should dive tourists do to contribute to the dive management?

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Thank you very much.

Semi-structured interviews

**“Experiences and satisfaction of dive tourists in Cambodia: A case study of
Sihanoukville”**

Questionnaire for dive instructors/managers

1. What motivates divers to come diving in Sihanoukville?

2. To what extent are they satisfied with their diving trip? Why or why not?

3. What do they like the most about their diving trip in Sihanoukville?

4. What don't they like the most from their dive experience in Sihanoukville?

5. Are they satisfied with services provided by the tour operator? Why or why not?

6. What do they usually do under the water?

7. What else do they do in Sihanoukville besides diving?

8. Do they want to come diving again in Sihanoukville? Why or why not?

Your comments

9. What should be done to improve diving experience in Sihanoukville?

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10. What should marine tour operators do to improve services?

.....

.....

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11. What should government agencies do for better dive management?

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12. What should dive tourists do to contribute to the dive management?

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Thank you very much.

Semi-structured interviews

**“Experiences and satisfaction of dive tourists in Cambodia: A case study of
Sihanoukville”**

Questionnaire for scuba dive tourists

1. What motivates you to come diving in Sihanoukville?

2. How satisfied are you with your diving trip today?

3. What do you like the most about your diving trip in Sihanoukville?

4. What don't you like the most from your dive experience in Sihanoukville?

5. Are you satisfied with services provided by the tour operator? Why or why not?

6. What did you do under the water?

7. What else do you do in Sihanoukville besides diving?

8. Will you recommend your friends or family to go diving in Sihanoukville? Why or why not?

Your comments

9. What should be done to improve diving experience in Sihanoukville?

.....
.....
.....

10. What should marine tour operators do to improve services?

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.....
.....

11. What should government agencies do for better dive management?

.....
.....
.....

12. What should dive tourists do to contribute to the dive management?

.....
.....
.....

Thank you very much.

Participant Information Sheet



Date Information Sheet Produced: 15/01/2015

Project Title

Experiences and satisfaction of scuba divers in Cambodia: A case study of Sihanoukville

An Invitation

Hello, my name is Phirum Kunthea. I am a postgraduate student at the Auckland University of Technology completing a Master of International Tourism Management. I would like to invite you to participate in research about experiences and satisfaction of scuba divers in Sihanoukville.

Participating in this research is voluntary and you will no way be disadvantaged should you choose not to take part. A self-reply questionnaire is attached to this information sheet. Reading this participant information sheet and completing the attached questionnaire will be taken as indicating your consent to participate.

The questionnaire will take you about eight to ten minutes. Your contribution is valuable and highly appreciated, and your answers will be kept confidential. Thank you for your kind attention considering this invitation.

Best regards,

Phirum Kunthea

What is the purpose of this research?

The purpose of this research is to discover experiences and levels of satisfaction of scuba dive tourists in Sihanoukville. This study will improve our understanding about dive tourism in Cambodia.. Results of the research may help more effectively manage dive tourism in the province.

How was I identified and why am I being invited to participate in this research?

You have been identified as a scuba diver in Sihanoukville. The study is inviting scuba divers, like you, to participate in the research by completing a self-reply questionnaire.

What will happen in this research?

This research entails self-reply questionnaires which are administered to a sample of scuba dive tourists in Sihanoukville. The study invites you to take part by completing an attached questionnaire. It focuses on your experiences and levels of your satisfaction of various marine attractions and services provided during the trip.

What are the discomforts and risks?

Participants in this study will not be exposed to any kind of discomforts or risks. Participating in the questionnaire is optional and contact details will not be required. Information provided will be kept confidential and secure.

What are the benefits?

There are various benefits of this study. Participants can benefit from this study by sharing the way they like or dislike the site or particular services provided. Future dive tourists may benefit by receiving particular improvements. Marine tour operators may become more aware of their customers' needs and wants, and be prepared to provide better products and services. The government agencies (the provincial Department of Tourism and the Ministry of Tourism) will receive a summary document from this research about dive tourism in the area to assist them in future planning..

How will my privacy be protected?

Participants' personal details will not be collected. Participants will not be known to the researcher because the questionnaire is anonymous.

What are the costs of participating in this research?

There are no costs of participating in this research except for the time spent to complete the questionnaire.

What opportunity do I have to consider this invitation?

Participants may spend about ten minutes listening to the introduction and reading the participant information sheet before accepting or declining this invitation.

How do I agree to participate in this research?

Completion of the attached questionnaire will be taken as indicating your consent to participate. Then the researcher will give them a pen, a questionnaire, and clipboard to fill in the questionnaire.

Will I receive feedback on the results of this research?

If participants are interested in the research results, the final thesis report of this research will be available online on the AUT Scholarly Commons URL <http://aut.researchgateway.ac.nz/>

What do I do if I have concerns about this research?

Concerns about this research can be notified to the project supervisor, Professor Mark Orams, e-mail: mark.orams@aut.ac.nz, and phone +64 9 921 9999 ext 6410. Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTECH, Kate O'Connor, ethics@aut.ac.nz, +64 9 921 9999 ext 6038.

Whom do I contact for further information about this research?

Researcher: Phirum Kunthea, e-mail: kuntheaphirum@yahoo.com, +855 69 69 06 69 (Cambodia) or +64 22 074 8594 (New Zealand).

Project supervisor: Professor Mark Orams, e-mail: mark.orams@aut.ac.nz, +64 9 921 9999 ext 6410.

Participant Information Sheet



Date Information Sheet Produced: 03/04/2015

Project Title

Experiences and satisfaction of scuba dive tourists in Cambodia: A case study of Sihanoukville

An Invitation

Hello, my name is Phirum Kunthea. I am a postgraduate student at the Auckland University of Technology completing a Master of International Tourism Management. I would like to invite you to participate in research about experiences and satisfaction of scuba divers in Sihanoukville.

You are invited to participate in an interview about your experience as scuba diver or dive operator in Sihanoukville. Participating in this research is voluntary. The interview will take about an hour.

Your contribution is valuable and highly appreciated, and your answers will be kept confidential. Thank you for your kind attention considering this invitation.

Best regards,

Phirum Kunthea

What is the purpose of this research?

The purpose of this research is to discover experiences and levels of satisfaction of scuba dive tourists in Sihanoukville. This study will improve our understanding about dive tourism in Cambodia.. Results of the research may help more effectively manage dive tourism in the province.

How was I identified and why am I being invited to participate in this research?

You have been identified as a scuba diver in Sihanoukville. The study is inviting scuba divers and dive operators, like you, to participate in the research by completing a self-reply questionnaire. Your clarity in filling the questionnaire and your willingness to answer all the questions has been noticed and appreciated. You are invited to further participate in an interview.

What will happen in this research?

This research entails self-reply questionnaires and interviews which are administered to a sample of scuba dive tourists in Sihanoukville. It focuses on your experiences and levels of your satisfaction of various marine attractions and services provided during the trip.

What are the discomforts and risks?

Participants in this study will not be exposed to any kind of discomforts or risks. Participating in the study is optional and contact details will not be required. Information provided will be kept confidential and secure.

What are the benefits?

There are various benefits of this study. Participants can benefit from this study by sharing the way they like or dislike the site or particular services provided. Future dive tourists may benefit by receiving particular improvements. Marine tour operators may become more aware of their customers' needs and wants, and be prepared to provide better products and services. The government agencies (the provincial Department of Tourism and the Ministry of Tourism) will receive a summary document from this research about dive tourism in the area to assist them in future planning..

How will my privacy be protected?

Each participant's privacy is respected and fully protected. Personal details will not be collected and participants will be unidentified by using a numeric code in the consent form which will be separated from the data provided by participants. The information collected as part of this research will only be used for the project described here and related publications.

What are the costs of participating in this research?

There are no costs of participating in this research except for the time spent to complete the questionnaire.

What opportunity do I have to consider this invitation?

Participants may spend about 20 minutes listening to the introduction and reading the participant information sheet before accepting or declining this invitation.

How do I agree to participate in this research?

Reading this participant information sheet and signing in a consent form will be taken as indicating your consent to participate.

Will I receive feedback on the results of this research?

If participants are interested in the research results, the final thesis report of this research will be available online on the AUT Scholarly Commons URL <http://aut.researchgateway.ac.nz/>

What do I do if I have concerns about this research?

Concerns about this research can be notified to the project supervisor, Professor Mark Orams, e-mail: mark.orams@aut.ac.nz, and phone +64 9 921 9999 ext 6410. Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEK, Kate O'Connor, ethics@aut.ac.nz, +64 9 921 9999 ext 6038.

Whom do I contact for further information about this research?

Researcher: Phirum Kunthea, e-mail: kuntheaphirum@yahoo.com, +855 69 69 06 69 (Cambodia) or +64 22 074 8594 (New Zealand).

Project supervisor: Professor Mark Orams, e-mail: mark.orams@aut.ac.nz, +64 9 921 9999 ext 6410.

Consent Form



Project title: ***Experiences and satisfaction of scuba divers in Cambodia: A case study of Sihanoukville***

Project Supervisor: ***Professor Mark Orams***

Researcher: ***Phirum Kunthea***

- ☐ I have read and understood the information provided about this research project in the Information Sheet dated 03 April 2015.
- ☐ I have had an opportunity to ask questions and to have them answered.
- ☐ I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- ☐ I understand that I may withdraw myself or any information that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.
- ☐ If I withdraw, I understand that all relevant information including tapes and transcripts, or parts thereof, will be destroyed.
- ☐ I agree to take part in this research.
- ☐ I wish to receive a copy of the report from the research (please tick one): Yes ☐ No ☐

Participant's signature:

.....

Participant's name:

.....

Participant's Contact Details (if appropriate):

.....
.....
.....

Date:

***Approved by the Auckland University of Technology Ethics Committee on 06 May 2015
AUTEK Reference number 15/70***

Note: The Participant should retain a copy of this form.

Appendix 8: Key determinants in influencing the satisfactory experience of scuba divers

scuba diving attributes	Authors
Coral reefs	Charlie, King and Pearlman (2013); Cope (2003); Dimmock (2007); Fabinyi (2008); Fabinyi (2010); Garrod and Gössling (2008); Jennings (2007); Musa (2002); O'Neill, Williams, MacCarthy and Groves (2000); Orams (1999); Tabata (1992)
variety of fish species	Musa (2002); O'Neill et al., (2000); Tabata (1992)
Scenery/seascapes	Dikou and Troumbis (2006); Inglis, Johnson and Ponte (1999); Musa (2002); Tabata (1992)
Weather conditions/visibility	Davenport and Davenport (2006); Wongthong and Harvey (2014); Tabata (1992)
Social interaction	Carter (2008); MacCarthy, O'Neill and Williams (2006); Musa (2002)
Tour guide/ Dive instructors	Aiello (1998); Musa (2002)
Boat design or type	Tabata (1992)
Service provided	Aiello (1998); Musa (2002)

Appendix 9: A confirmation letter from primary supervisor to assist the researcher in collecting data



Dear Sir/Madam,

This letter is written to certify that a postgraduate student, Phirum Kunthea, who has been studying Master of International Tourism Management at the Auckland University of Technology, is currently conducting his research thesis. The thesis is a requirement for 2015 academic study. A field work for his research will be in Sihanoukville province of Cambodia. In this regards, we would like to seek your collaboration in providing any related information you may have to assist him in collecting data.


We appreciate your time and resources in this matter.

Sincerely yours,

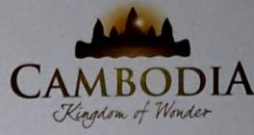
A handwritten signature in black ink, which appears to read 'Mark B. Orams'.

Professor Mark Orams
Head of School, Sport and Recreation
Faculty of Health and Environmental Sciences
AUT University
Ph+64 9 921 9999 ext 6410

Appendix 10: A confirmation letter from the Ministry of Tourism of Cambodia to assist the researcher in collecting data



ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ



ក្រសួងទេសចរណ៍

លេខ ០២៧ លេខ.អចច

រាជធានីភ្នំពេញ, ថ្ងៃទី ០៩ ខែ ឧសភា ឆ្នាំ២០១៩

ជម្រាបជូន

លោក លោកស្រី ជាតាគីពាក់ព័ន្ធក្នុងវិស័យទេសចរណ៍នៃខេត្តព្រះសីហនុ

កម្មវត្ថុ:


សំណើជួយសម្របសម្រួលការប្រមូលទិន្នន័យសម្រាប់ការស្រាវជ្រាវរបស់ លោក គន្ធា ភិរម្យ មន្ត្រីក្រុមអ្នកច្បាប់នៃក្រសួងទេសចរណ៍។

យោង:

លិខិតបញ្ជាក់ពីសកលវិទ្យាល័យ AUT នៃប្រទេស New Zealand។

តបតាមកម្មវត្ថុ និងយោងខាងលើ សូមលោក លោកស្រីដែលជាតាគីពាក់ព័ន្ធក្នុងវិស័យទេសចរណ៍នៃខេត្តព្រះសីហនុ មេត្តាជួយសម្រួលដល់ការប្រមូលទិន្នន័យសម្រាប់ការស្រាវជ្រាវរបស់លោក គន្ធា ភិរម្យ តាមលទ្ធភាព និងមុខងាររបស់លោកស្រី។ លោក គន្ធា ភិរម្យ ជាមន្ត្រីនៃក្រុមអ្នកច្បាប់ក្នុងក្របខណ្ឌក្រសួងទេសចរណ៍ ហើយរូបលោកកំពុងសិក្សាថ្នាក់អនុបណ្ឌិតផ្នែកគ្រប់គ្រងទេសចរណ៍អន្តរជាតិ (Master of International Tourism Management) នៅសកលវិទ្យាល័យ Auckland University of Technology នៃប្រទេស New Zealand។ ការស្រាវជ្រាវនេះគឺជាការសិក្សាបញ្ចប់ថ្នាក់អនុបណ្ឌិតក្រោមប្រធានបទ “បទពិសោធន៍ និងការពេញចិត្តរបស់ភ្ញៀវទេសចរមើលផ្កាថ្មក្នុងប្រទេសកម្ពុជា: ករណីសិក្សានៅខេត្តព្រះសីហនុ”។

អាស្រ័យហេតុនេះ សូមលោក លោកស្រីមេត្តាជួយសម្រួលក្នុងការប្រមូលទិន្នន័យសម្រាប់ការស្រាវជ្រាវនេះដោយអនុគ្រោះ។



លោក សាមុត

ឯកសារនេះ ជាសម្បត្តិរបស់ក្រសួងទេសចរណ៍ រាជធានីភ្នំពេញ ព្រះរាជាណាចក្រកម្ពុជា។ ទូរស័ព្ទ: + ៨៥៥ ២៣ ៨៨៤ ៩១២ ទូរសារ: + ៨៥៥ ២៣ ៨៨៤ ៩១៤ E-mail: admin@mot.gov.kh Website: www.mot.kh

Appendix 11: AUTECH research ethics approval



AUTECH
SECRETARIAT

6 May 2015

Mark Orams

Faculty of Health and Environmental Sciences

Dear Mark

Re Ethics Application: **15/70 Experiences and satisfaction of scuba divers in Cambodia: A case study of Sihanoukville.**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Subcommittee (AUTECH).

Your ethics application has been approved for three years until 5 May 2018.

As part of the ethics approval process, you are required to submit the following to AUTECH:

- A brief annual progress report using form EA2, which is available online through <http://www.aut.ac.nz/researchethics>. When necessary this form may also be used to request an extension of the approval at least one month prior to its expiry on 5 May 2018;
- A brief report on the status of the project using form EA3, which is available online through <http://www.aut.ac.nz/researchethics>. This report is to be submitted either when the approval expires on 5 May 2018 or on completion of the project.

It is a condition of approval that AUTECH is notified of any adverse events or if the research does not commence. AUTECH approval needs to be sought for any alteration to the research, including any alteration of or addition to any documents that are provided to participants. You are responsible for ensuring that research undertaken under this approval occurs within the parameters outlined in the approved application.

AUTECH grants ethical approval only. If you require management approval from an institution or organisation for your research, then you will need to obtain this. If your research is undertaken within a jurisdiction outside New Zealand, you will need to make the arrangements necessary to meet the legal and ethical requirements that apply there.

To enable us to provide you with efficient service, please use the application number and study title in all correspondence with us. If you have any enquiries about this application, or anything else, please do contact us at ethics@aut.ac.nz.



All the very best with your research,

Kate O'Connor
Executive Secretary
Auckland University of Technology Ethics Committee

Cc: Phirum Kunthea kuntheaphirum@yahoo.com

Appendix 12: A map of scuba diving sites in Sihanoukville

Legend:

-  Current active dive site
-  Future active dive site

