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**MARKETING FOREST-BASED ECOTOURISM IN SRI LANKA:
PREDICTING THE ECOTOURISM BEHAVIOR AND DEFINING THE MARKET
SEGMENT THROUGH A BEHAVIORAL APPROACH**

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

In

The School of Renewable Natural Resources

by

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May 2011

DEDICATION

This dissertation is dedicated to my loving parents for their unconditional support with my studies, and all the sacrifices they made to make my life better.

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This work would not have been possible without the support and encouragement of my Major Professor and mentor Dr. Richard P. Vlosky, under whose supervision I chose this topic and began the dissertation. I greatly appreciate his continuous encouragement and guidance throughout the duration of research project, especially for his constructive criticisms and meticulous corrections of manuscripts.

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ABSTRACT

Tourism industry is one of the main drivers of the global economy and plays a key role in regional development. As negative environmental and socio-cultural impacts of mass tourism became apparent, the appeal of alternative forms of tourism, especially ecotourism, continued to gain a broad recognition. As a result, ecotourism became one of the fastest growing sectors in global tourism during the past decade. Being a fast-developing country with ample natural resources, Sri Lanka can benefit from adopting and promoting ecotourism. At present, Sri Lanka's ecotourism resources remain largely under-utilized.

With rising demand, ecotourism operators are under pressure to meet expectations of diverse consumers of their products. In this background, the need to define and distinguish ecotourists from other types of tourists has become important. The importance of using a behavioral approach to distinguish true ecotourists from other types of tourists is widely emphasized by tourism scholars. This study developed distinct motivational and behavioral profiles of visitors to forest-based attractions in Sri Lanka. Furthermore, understanding and predicting ecotourist behavior is important for ecotourism operators to better cater their target markets. Many authors have attempted to explain the recreational behavior through various behavioral theories. Based on Ajzen's (1991) Theory of Planned Behavior, this study proposed an ecotourism behavioral model of forest-based recreational areas in Sri Lanka, and incorporated knowledge and satisfaction in predicting ecotourism behavior. The role of previous visits in predicting future behavioral intentions in an ecotourism setting was modeled separately.

The results identified four different types of tourists based on their behavioral and motivational characteristics i.e. ecotourists, picnickers, egoistic tourists, and adventure tourists. A typical ecotourist in Sri Lanka represents a relatively young recent high-school or university

graduate, or a university student. The segment identified as “egoistic tourists” seems to be the most lucrative market segment to target from both environmental sustainability and business perspectives. The proposed ecotourism model suggests that knowledge and satisfaction are important determinants of ecotourism behavior. In addition, previous experiences of participating in ecotourism proved to be an important precursor of future behavioral intentions. Broad implications of visitor profiling and behavior modeling are also discussed.

CHAPTER 1: INTRODUCTION

Leisure scientists and tourism scholars attribute the emergence of alternative tourism models such as nature-based tourism, sustainable tourism, cultural tourism, adventure tourism, and ecotourism to significant negative impacts of mass tourism on the environment, economy, and socio-cultural elements of the society (Valentine, 1993; Goodwin, 1996; Fennell, 2003). Of these alternative tourism models, ecotourism has generated a special interest among tourism professionals because of its potential as a sustainable alternative to mass tourism, or other forms of economic developments involving natural resources (Sirakaya & McLellan, 1998).

Ecotourism is an exciting niche market that combines the pleasure of discovering and understanding spectacular fauna, flora and cultural sites; a holiday in the educational periphery combined with conservation and wellbeing of the local community in contrast to the pleasure periphery based on consumerism offered by mass tourism. The concept has wide implications, particularly for biodiversity rich developing countries in the tropics.

Traditionally, Sri Lanka's tourism industry has been oriented towards "sun and beach" tourism. Although its diverse landscapes and cultural heritage offer a wide range of tourism opportunities, Sri Lanka's tourism resources still remain relatively under-exploited. Being one of the 25 biodiversity hot spots in the world, and having the highest biodiversity per 10,000 km² in Asia, Sri Lanka is an ideal destination for ecotourism with a vibrant resource base for ecotourism (Ministry of Environment and Natural Resources, 2002). With existing natural forests are being increasingly subjected to pressure to become classified as conservation forests, ecotourism can be identified as an ideal non-wood forest product to achieve conservation goals while deriving economic benefits from the resources. Unfortunately, only a handful of studies have been done on marketing and promoting ecotourism in Sri Lanka. This study attempts to investigate forest-

based ecotourist behavior through developing a consumer behavior model, and define this unique market segment in the context of ecotourism environment in Sri Lanka.

1.1 Problem Statement

The appeal of ecotourism continues to widen with growing concerns over environment and sustainability. With the rising demand, ecotourism operators offering various experiences are under pressure to meet the expectations of diverse consumers of their products, or to provide a customized service to their clients (Higham & Carr, 2002). In this background of defining the market segment, a key question that needs to be answered is "Who are ecotourists?". According to Eagles and Cascagnette (1995), ecotourists are individuals who visit a natural setting with the intention of observing, experiencing, and learning about nature. However, Wight (1993) argued that it is hard to define ecotourists by the products in which they express interest and their motivations often overlaps with those of other types of tourists. Furthermore, an individual's on-site behavior should be in accordance with the principles of ecotourism if he/she is to be called an ecotourist. Buttressing this view, several past studies emphasized the importance of using a behavioral approach to distinguish true ecotourists from other types of tourists (Eagles & Cascagnette, 1995; Kerstetter et al., 2004).

Geographically, ecotourism settings or environments show wide variations. Boyd and Butler (1993) adopts the notion that ecotourism should be viewed as dynamic, and flexible form of tourism that is prone to change with the destination setting. The ecotourist characteristics may also vary with the unique environment where ecotourism operations are carried out. Few studies so far have attempted to profile ecotourists using motivational and behavioral factors, especially in Asian region (Kerstetter et al., 2004). Scholars in this rapidly evolving field of tourism have commented on the lack of published research material available regarding the behavior and

characteristics of ecotourists. Hence, this study develops motivational and behavioral profiles of visitors to forest based recreational areas in Sri Lanka, and attempts to define ecotourists on motivational and behavioral grounds.

Predicting and influencing ecotourist behavior are key tasks of recreation managers, which require assessing the recreational participation of visitors and demand. Detailed understanding of ecotourist behavior helps ecotourism operators and recreational managers to better cater this market to optimize tour experience, revenue generation, as well as to educate customers/tourists on environment.

Many authors have attempted to explain the recreational behavior through various behavioral theories. Fishbein and Ajzen (1975) came up with the theory of reasoned action which theorizes that human behaviors and behavioral intentions are influenced by attitudes and social subjective norms. In the context of tourism behavior, it discusses the role of attitudes on acts or behaviors, how social subjective norms influence visitors, and predict behavioral outcome based on individual behavioral intentions and the behavior itself. Ajzen and Madden (1986) contested the applicability of this theory in explaining recreational behavior, arguing that recreational activities often involve integration of internal and external resources.

Ajzen (1985) proposed the theory of planned behavior which considers perceived behavioral control to identify individual perceived ease or difficulty in performing a behavior. Some experts believe attitudes are the most significant factor in understanding consumer behavior (Yuan et al., 2008). The classic three component attitude model illustrates this relationship in detail (Wilkie, 1994). In addition, external factors also affect consumer decisions. Satisfaction and knowledge have also been identified as valid predictors of consumer behavior (McNeal & McDaniel 1981; Yu & Lee, 2001; Lee, 2007). Based on this theoretical framework,

this study develops an ecotourism behavioral model of forest recreation areas, integrating satisfaction and knowledge as additional predictors.

How ecotourism operators present their product to the customer and the quality of experience provided by tour operators can significantly affect an ecotourism operator's customer base. Positive tourism experiences result in revisits, and recommending the destination to others by the tourist (Yuan et al., 2008). In other words, positive tour experiences lead to favorable behavioral intentions. Therefore, it is highly important to understand the relationships between previous visits and behavioral intentions in the context of ecotourism. An in depth understanding of these relationships would allow ecotourism operators to create better ecotourism experiences to their clients, and improve their marketing efforts. Hence, this study also investigates the role of previous visits in predicting future behavioral intentions to engage in ecotourism.

1.2 Study Objectives

Many definitions can be found for ecotourism in the literature. Fennell (2003) emphasized the influence of differing environmental, social, economic, and cultural contexts, as well as diverse political contexts established through national/local government policy on ecotourism definitions. Taking these views into account, present study is solely focused on “forest-based” ecotourism setting. The main objectives of the study are;

- Develop a motivational and behavioral profile of visitors to forest-based recreational attractions in Sri Lanka
- Develop an ecotourism behavioral model of natural forest recreation areas in Sri Lanka
- Investigate the role of previous ecotourism experiences or visits in predicting future behavioral intentions

CHAPTER 2: ECOTOURISM: AN OVERVIEW

Tourism industry is one of the main driving forces of the global economy, and plays a key role in regional and destination development. Successful tourism operations can generate significant foreign exchange, employment, and numerous revenue opportunities for local communities. Although tourism industry leads to much economic gains, mass tourism has its own negative impacts such as environmental and socio-cultural degradation. In search of answers to strike a balance between the positives and negatives of mass tourism, many alternative tourism models have been developed. The concept/model of ecotourism had made it possible, at least in theory, to meet the challenge of achieving economic development in destination countries while having minimal impacts on the socio-cultural and biological elements of the destination. This chapter discusses the concept of ecotourism, its evolution, and current trends in global ecotourism market.

2.1 Ecotourism and Its Evolution

The concept of ecotourism has been in the center stage of numerous research studies and articles in tourism literature since its emergence in early 1990s. The growing awareness of environmentalism together with emerging trends in international tourism intensified the need for symbiosis between environmental conservation, while maintaining tourism as an income-generating industry (Uriely et al., 2007). However, till the mid-1980s, the concept of ecotourism was largely unknown for the public, as well as for the academia.

In his analysis of the evolution of global tourism and tourism studies since the beginning of post-World War II period, Jafari (1989) in Weaver (2001) identifies four major “platforms” that tourism studies have evolved through. Jafari defines the period from 1950 to 1960 as the “advocacy platform” where mass tourism was regarded as an ideal economic opportunity for

host countries or destinations with minimum or no foreseeable negative impacts. Hence the proponents of this notion encouraged the growth and development of mass tourism.

As the negative environmental and socio-cultural impacts of mass tourism became apparent, tourism professionals began to realize that haphazard development of mass tourism would lead to variety of negative consequences at host destinations. Scholars began to view tourism destinations/areas as dynamic and prone-to-change landscapes (Butler, 1980). This notion provided the foundation for Jafari's "cautionary platform" which was the dominant ideology in early 1970s. The ideology of cautionary platform is further supported by Butler's tourist area cycle model (Figure 2.1).

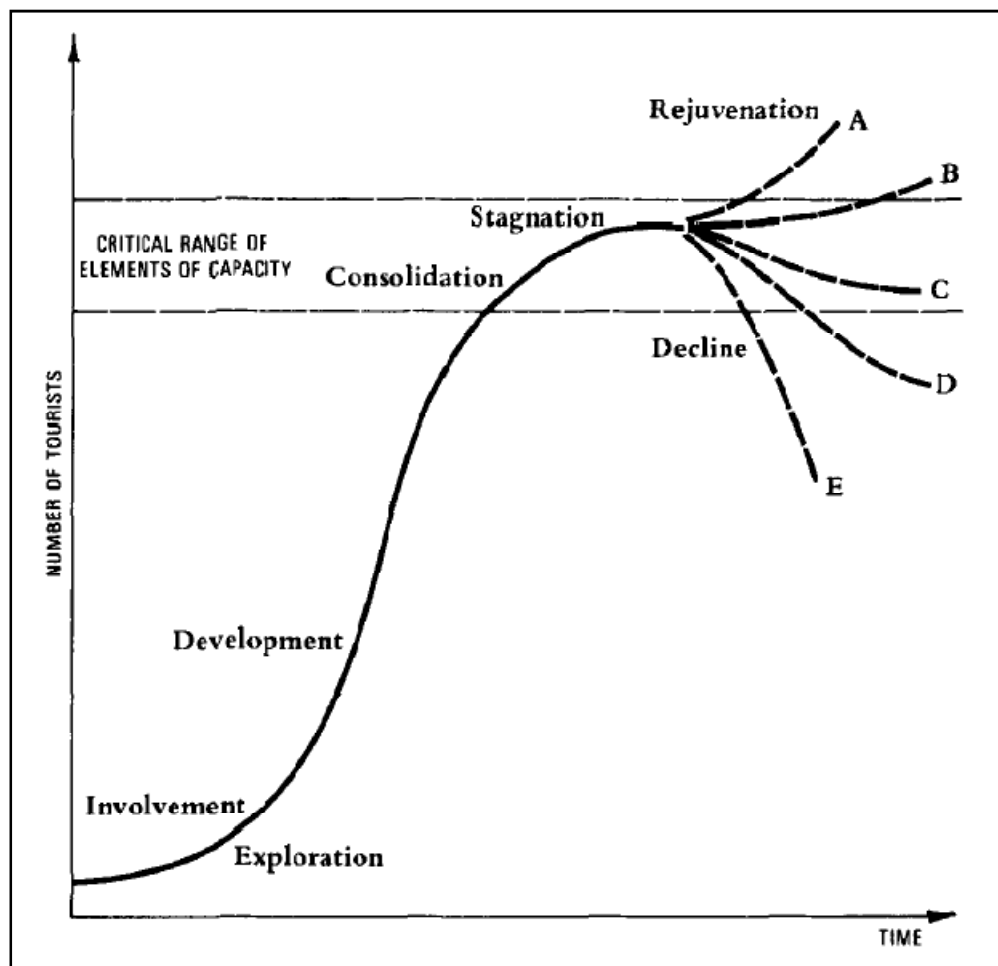


Figure 2.1: Butler's Tourist Area Cycle Model (Adopted from Butler, 1980)

Applying the product lifecycle concept to tourism setting, Butler (1980) proposed an “S-shaped” curve to describe the temporal changes that a tourism destination undergoes. The *exploration stage* describes the discovery of a new tourism destination, typically characterized by smaller number of visitors, lack of access, facilities, and local knowledge. In the *involvement stage*, as visitor numbers increase, local communities tend to realize the emerging economic opportunities, and get involve in economic activities such as providing facilities to visitors. The *development stage* describes a tourism area with rapidly increasing visitations as a result of marketing and promotion, information dissemination, and sophisticated facility provision. Eventually, the tourism area reaches a stage where the rate of increase in visitor numbers declines as the levels of carrying capacity is reached. This stage is referred to as the *consolidation stage*, and by this time, the destination has become an exclusive tourism area where the local economy is predominantly dependent on tourism related activities.

The subsequent *stagnation stage* is characterized by peak number of visitors, but with no growth in visitation rates. By this time the destination has reached or exceeded its carrying capacity in terms of environmental (e.g. land, air, and water quality), social (e.g. overcrowding, displacement of local people, changes in cultural integrity), and physical aspects (e.g. accommodation, transportation, degradation of attractions). As a result, the area will no longer be able to compete with other emerging recreational sites, and eventually enters the *decline stage*. The destination may enter in to a *rejuvenation phase* if the focus of attraction can be changed.

Based on the ideology of cautionary platform, Gerardo Budowski (1976) in his article of “Tourism and Environmental Conservation: Conflict, Coexistence, or Symbiosis?” discussed the concept of nature based tourism, and recognized the importance of co-existence between tourism and nature in order to be sustainable in the long run. In fact, this article is considered as one of

the earliest references to the concept of ecotourism (Weaver, 2001). As stated by Budowski (1976) “a tourist industry can expect a brilliant future, based on natural assets of the environment, provided due consideration is given to the ecological principles which must guide resource-use”.

The “adaptancy platform” emerged in 1980s is virtually an extension of the dominant ideology in cautionary platform, but went further by venturing into alternative forms of tourism that could achieve a balance between utilization and conservation of natural and cultural resources. The concept of ecotourism emerged as an alternative tourism model during this era. The term “ecotourism” was first introduced by Romeril in 1985, and the concept became popular among public after Elizabeth Boo (1990)’s publication “Ecotourism; the potentials and pitfalls”.

Jafari further suggested that driven by the ideology in adaptancy platform, 1990s would be dominated by the “knowledge-based platform” where a more scientific and objective basis for conceptualizing and managing the tourism sector would be undertaken.

2.2 Defining Ecotourism

Many definitions can be found for ecotourism in the literature. The earliest formal definition for ecotourism is found in Elizabeth Boo’s publication of “Ecotourism; the potentials and pitfalls” published in 1990. It defines ecotourism as “ tourism that consist in travelling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring, enjoying the scenery and its wild plants and animals, as well as exiting cultural manifestations (both past and present) found in these areas”; a definition first put forward by the Mexican ecologist Hector Ceballos-Lascurain. As the concept became popular, tourism researchers came up with numerous definitions for ecotourism. Some definitions proposed by key researchers in the field are listed in Table 2.1.

Table 2.1: Some Definitions of Ecotourism

Reference	Definition
Valentine (1993)	Nature-based tourism that is ecologically sustainable and is based on relatively undisturbed natural areas, is non-damaging and non-degrading, contribute directly to the continued protection and management of protected areas and subjected to adequate and appropriate management regime.
Good 1996 in Fennel (2003)	Low impact nature tourism which contributes to the maintenance of species and habitats either directly through a contribution to conservation and/or indirectly by providing revenue to the local community sufficient for local people to value, and therefore protect their wildlife heritage area as a source of income.
Weaver (2001)	Ecotourism is a form of tourism that fosters learning experiences and appreciation of the natural environment, or some component thereof, within its associated cultural context. It has the appearance (in concert with best practice) of being environmentally and socio-culturally sustainable, preferably in a way that enhances the natural and cultural resource base of the destination and promotes the viability of the operation.
Fennel (2003)	A sustainable form of natural resource based tourism that focuses primarily on experiencing and learning about nature, and which is ethically managed to be low-impact, non-consumptive, and locally oriented (control, benefits, and scale). It typically occurs in natural areas, and should contribute to the conservation or preservation of such areas.

The International Ecotourism Society based in the U.S. adopts “responsible travel that conserves natural environments and sustains the well-being of local people” as the definition for ecotourism (TIES, 2010). Based on a survey of nature tourists in North Carolina, Meric and Hunt (1998) argued that ecotourism is an activity that is defined by the ecotourist itself. Some authors view ecotourism as a dynamic, flexible, and prone to change process within the variety of destination settings (Boyd & Butler, 1993). Despite ecotourism having numerous definitions, there is a generally agreed framework of principles exists. The United Nations designated 2002 as the International Year of Ecotourism (IYE), and the Quebec Declaration on ecotourism

identified following as key components of ecotourism to distinguish it from the wider concept of sustainable tourism (UNWTO, 2002).

- Contributes actively to the conservation of natural and cultural heritage,
- Includes local and indigenous communities in its planning, development, and operation, contributing to their well-being,
- Interprets the natural and cultural heritage of the destination to visitors,
- Lends itself better to independent travelers as well as to organized tours for small size groups.

Analyzing previous literature in ecotourism, Blamey (2001) extracted three underlying core criteria where ecotourism definitions are based upon i.e. a nature based element, educational or learning component, and requirement of sustainability. In addition, Weaver (2001) emphasized the importance of ecotourism as a viable business in order to ensure its long-term operation. Despite the debate over a proper definition, ecotourism continues to be of interest to tourism professionals because of its potential as a sustainable alternative to mass tourism or other types of economic developments associated with natural resources of biological origin.

2.3 Defining the Ecotourist

Tourism scholars have attempted to define the “ecotourist” in numerous ways. Lee (2007) identified three basic criteria that ecotourist definitions in past literature are based upon;

1. Type of sites visited by tourists (tourist entering a nature-based site as ecotourists)
2. On-site activities criteria (tourists engaging in particular activities) and,
3. Motivation criteria (underlying motivations of travelling to an ecotourism destination)

Adopting the “type of sites visited” criteria along with a descriptive approach, Ballantine and Eagles (1994) found that ecotourists tend to be middle aged, have relatively high incomes,

and high levels of education, and express an interest in learning about the environment. In contrast to mass tourists, ecotourists expect to derive different benefits from their nature travel (Bricker & Kerstetter, 2000). Meric and Hunt (1998), and Fennell (2003) further report similar demographic descriptions for ecotourists. Weaver (2001) highlights the trend of increasing feminization in ecotourists, and attributes this trend to the correlation between ecotourism and tertiary education in major market countries where females tend to have higher education levels.

According to Eagles and Cascagnette (1995), ecotourists are individuals who visit a natural setting with the intention of observing, experiencing, and learning about the nature. Meric and Hunt (1998) identified ecotourists to be specifically interested in activities such as observing wildlife, visiting state parks, national wildlife refuges, historic sites, camping and hiking, cultural tours to archaeological centers, and flora and fauna tours. However, Wight (1993) argued that it is hard to define ecotourists by the products in which they express interest and their motivations often overlap with those of other types of tourists. Using a more holistic approach, Weaver (2001) defined the ecotourist as “tourists seeking nature-based learning experiences and behaving in an environmentally and socio-culturally sustainable manner”. In addition, several authors (Horwich et al., 1993; Kerstetter et al., 2004) emphasized the importance of using a behavioral approach to distinguish true ecotourists from other types of tourists since visitors’ on-site behavior according to ecotourism principles is a key aspect in ecotourism.

Referring to Kusler’s work in 1991, which is one of the earliest attempts to classify ecotourists, Fennell (2003) provides descriptions of three types of ecotourists;

1. *Do-it-yourself ecotourists*: this group comprises the largest percentage of all ecotourists. They are highly flexible in terms of where they stay, number of sites visited, and experience.

2. *Ecotourists on tours*: they visit eco-destinations as part of a properly organized tour.
3. *School groups or scientific groups*: these are predominantly groups of people visiting for research or conservation purposes, and stay in the same region for extensive time periods.

Detailed descriptions of two types of ecotourists are provided in Weaver (2001) based on tourist motivation, attitude, and behavior.

1. *Hardcore ecotourists*: these are self motivated tourists with bio-centric attitude, have deep commitment to environmental issues, tend to engage in activities those enhance the resource base, and looking for deep meaningful interaction with nature. They are often characterized by small groups of travelers demanding fewer facilities and making free and independent travel arrangements.
2. *Soft ecotourists*: they have anthropocentric tendencies and attitudes, lesser degree of involvement with nature, and demanding higher services and facilities. These tourists often make short term trips to eco-destinations as a part of formal packaged tour, travelling in larger groups.

Soft ecotourists are also referred to as “causal nature tourists” in Fennell (2003). In addition, he documents two other types of ecotourists; dedicated, and mainstream nature tourists. Dedicated nature tourists are those who take trips to nature-based protected areas specifically with the objective of understanding natural and cultural history. Mainstreamers on the other hand visit nature based attractions primarily to have a different experience, or to take an unusual trip.

2.4 Ecotourism as a Marketing Segment

Ecotourism is a concept that is based upon a set of principles, and it is a specific market segment. According to Weaver (2001), ecotourism market segmentation can be conducted in two levels i.e. how ecotourists differ from general tourists, and identify distinctive ecotourist

subgroups. Ecotourism is viewed as a sub component of the field of sustainable tourism, and one of its typical characteristics is that it is often delivered to small groups by small scale businesses (de Silva, 2004). It has been observed that the ecotourism market has enjoyed a period of buoyancy and growth exceeding that of the wider tourism sector in the recent past (Clifton & Benson, 2006). Figure 2.2 illustrates how ecotourism fits into the broader tourism market setting. Both adventure tourism and ecotourism reflect characteristics of nature tourism. In addition, ecotourism also shows some ties with cultural tourism and rural tourism. Hence there are certain overlappings between ecotourism and other forms of alternative tourism models.

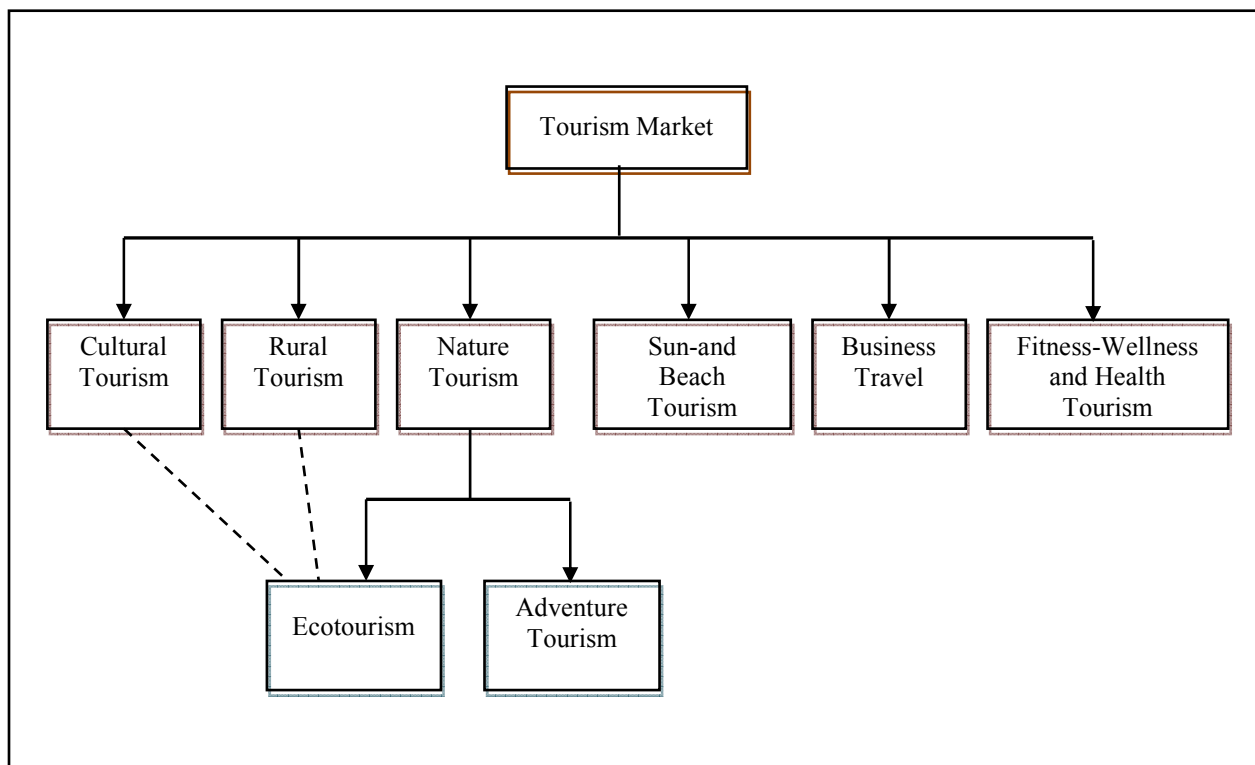


Figure 2.2: Ecotourism as a Marketing Segment (Source: WTO modified by Strasdas, 2001)

Although ecotourism shares certain characteristics with other forms of alternative tourism models, Weaver (2001) highlights key features that distinguish ecotourism from other tourism models. As depicted in Figure 2.2, both ecotourism and adventure tourism come under nature-based tourism. Nature-based tourism entirely depends on attractions directly related to natural

environment. Since ecotourism also tied to nature-based attractions, it is a subcomponent of nature-based tourism, but differs from nature-based tourism by including cultural, educational, and sustainability elements.

Adventure tourism on the other hand is characterized by involving an element of risk, high level of physical exertion, and need for specialized skills to participate. However, adventure tourism is not necessarily has to be nature-based. For instance war tourism; the form of travel to war-affected areas for sightseeing and thrill seeking is also classified under adventure tourism. Furthermore, adventure tourism does not always include sustainability and educational components which are essential components in ecotourism.

Cultural and rural tourism may be strongly associated with ecotourism since ecotourism involves the appraisal of cultural attributes. However, cultural appraisal is more a secondary objective in ecotourism. Weaver (2001) further emphasized the non-consumptive nature of ecotourism, and excluded activities such as hunting and fishing from ecotourism. Ecotourism is more focused on appreciation, rather than extraction.

Since the materialization of the concept in late 1980s, ecotourism has been growing 20% to 34% per year (TIES, 2005). For instance, ecotourism was the fastest growing sector of the world's US\$ 3.4 trillion dollar tourism industry in 1994 (FAO, 1995). According to a World Tourism Organization (WTO) press release, by the end of year 2004, ecotourism market was growing globally three times faster than the conventional tourism industry (WTO, 2004). According to the United Nations Environment Program (UNEP) and Conservation International predictions, most of tourism's expansion is likely to occur in and around the world's remaining natural areas (Christ, 2005). Citing numerous reports, TIES (2005) further predicts a growth in nature tourism, and suggests early converts to sustainable tourism would help in making market

gains. Weaver (2001) proposed the optimal ecotourism cycle model where this could be achieved. It emphasizes the importance of maintaining environmental, socio-cultural, as well as ecotourism operator sustainability through providing effective educational and recreational opportunities to visitors.

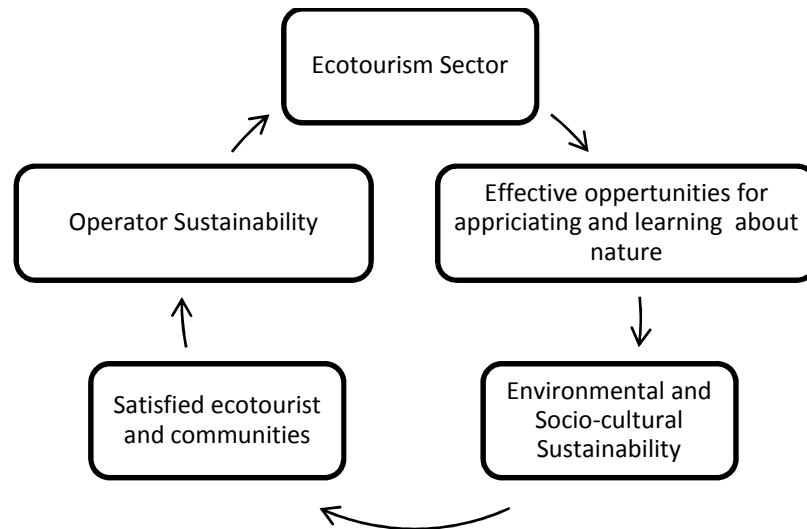


Figure 2.3: The Optimal Ecotourism Cycle (Adopted from Weaver, 2001)

2.5 Forest-based Ecotourism as a Non-Wood Forest Product

Historically, people have treasured forests not for just wood, but for other products and services as well. Variety of products and services that offered by forests have been increasingly recognized in the recent past as excellent income generating opportunities for communities living adjacent to forests. As a result, the term “non-wood forest products” (NWFP) emerged as an umbrella term to incorporate numerous products and services derived from forests.

The FAO (1995) adopted “goods of biological origin other than wood, as well as services derived from forests and allied land uses” as the definition for NWFPs. However, there’s no conformity among authors on a single definition for NWFPs. There’s a debate over how to classify intangible forest-derived products/services such as watershed protection, climate regulation, carbon sequestration, religious/cultural significance, aesthetics, and nature-based

tourism (Durst & Bishop, 1995). For instance, the FAO at present adopts “products consist of goods of biological origin other than wood, derived from forests, other wooded lands, and trees outside forests” as the definition for NWFPs, which in fact excludes forest services (FAO, 2008). Some authors define NWFPs to include all goods of biological origin, as well as services derived from forest or any land under similar use, and exclude wood in all its forms (Chandresekharan, 1995). In reality, none of these terms/definitions are truly able to capture the full range of ideas that are encompassed in the NWFP concept (Mannion & Phillips, 2006). In the case of ecotourism, the phenomenal growth of the industry means that whether it is considered to be a NWFP or not, it is important for foresters to give ecotourism the due consideration (Durst & Bishop, 1995).

Forests-based ecotourism can be viewed as a well-suited element for conservation. The tourist appeal of a natural site tends to be closely related to its conservation level. Moreover, unlike other forest services that are often valued too late, i.e., when forest degradation has already led to visible environmental costs, ecotourism is able to generate new income opportunities in short term, providing important conservation incentives for natural resource managers, policy makers, and local communities (Wunder, 1999).

CHAPTER 3: TOURISM SECTOR IN SRI LANKA AND THE POTENTIAL FOR ECOTOURISM DEVELOPMENT

3.1 Sri Lanka's Tourism Sector

Sri Lanka's tourism sector mainly comprises travel and transportation, accommodation, catering, recreation, entertainment, and other supplementary services. Being positioned in a strategically important location in the Indian Ocean in terms of both naval and aerial transportation, the country has historically been a busy travel destination. Traditionally, Sri Lanka's tourism industry has been oriented towards "sun and beach" tourism, and the country is well-known for its astonishing landscapes, rich cultural heritage, and hospitality. Sri Lanka has much more diverse tourist attractions than in other currently popular tourist destinations in the South Asian region. Over the years, tourism industry has been one of the major foreign exchange sources for Sri Lanka. It was the fourth largest source of foreign exchange with revenues over US\$ 410 million in year 2006, and a major employer providing thousands of direct and indirect jobs (SLTDA, 2007). The tourism sector contributed 3.1% to the total foreign exchange earnings in 2007, but the figure slumped to 2.6% by the end of 2009 largely due to the unsafe environment prevailed in the country (SLTDA, 2010^a). However, the 2009 figure was a marginal increment of 1.1% compared to year 2008, where foreign exchange earnings increased from US\$ 319.5 million in 2008 to US\$ 326.3 million in 2009 (SLTDA, 2010^a).

At present, Sri Lanka is in a rapid post-war recovery process, and the tourism sector is also gaining a rapid momentum. The present peaceful environment in the country prompted numerous western countries to relax their travel advisories on Sri Lanka. The interest on Sri Lanka as a travel destination has grown tremendously during the post-war period. For instance, The New York Times ranked Sri Lanka at the top in its "The 31 Places to go in 2010" travel article (The New York Times, 2010). The National Geographic Channel also rated Sri Lanka as

the second best place to visit in its travel documentary “World's Twenty Best Tourist Destinations” (National Geographic Channel, 2010). Reflecting this growing interest, the first three quarters in the year 2010 alone showed a staggering 50%, 46%, and 37% of increases in tourist arrivals respectively, compared to the previous year (SLTDA, 2010^b). According to the World Tourism Organization, Sri Lanka has the advantage of having 49 sites classified as unique attractions, 91 rare attractions, 7 world heritage sites, and 6 of the 300 ancient monuments in the world, giving a significant edge over its tourism competitors in the region (De Silva, 2000).

With rising tourist arrivals, it is expected that employment opportunities in the tourism sector would also grow significantly. A total of 52,071 individuals were employed directly in the tourism sector with about 62% of them in accommodation and catering, while the indirect employment in the sector was estimated at 72,899 for the year 2009 (SLTDA, 2010^a). In addition, the tourism sector is a leading source of revenue generation for many public sector institutions such as Tourism Development Authority, Ministry of Port and Aviation, national wildlife parks, national museums, botanical gardens, and establishments under the Ministry of National Heritage and Cultural Affairs. For instance, revenues collected from embarkation tax contributed over US\$ 6.9 million in 2009 while tourism development levy and Cultural Triangle entrance fees accounted for US\$ 3.68, and 3.66 million respectively (SLTDA, 2010^a).

At present, there are 249 registered tourist hotels in Sri Lanka with a total of 14,461 rooms (SLTDA, 2010^d). In addition, there are numerous unregistered facilities that provide accommodation for tourists. Parallel to the increase in tourist arrivals, the room occupancy rates in registered tourist hotels have also increased significantly. For instance, the first three months in the year 2010 showed 82%, 84.2%, and 78.4% increases in room occupancy rates compared to 2009 (SLTDA, 2010^e). According to most recent statistics, foreign exchange receipt per tourist

per day was estimated at US\$ 81.8 for the year 2009, which is a 6.7% increase from 2008, while the average duration of stay of a tourist was estimated at 9.1 days (SLTDA, 2010^a).

3.2 Major Tourist Markets and Trends

Western Europe has traditionally been the major tourist source market for Sri Lanka, followed by South Asia, and North East Asia. According to Sri Lanka Tourism Development Authority, trends in the recent past indicate that Western Europe market has dropped from 63.2% in 1999 to 38.1 % in 2008, and to 37.9 % in 2009 while the market share of South Asia has grown from 14.4% in 1999 to 37.9% in 2009 (Table 3.1).

Table 3.1: Relative Importance of Market Segments for Tourism Industry in Sri Lanka

Market Region	Percentage Share		
	1999	2008	2009
North America	4.2	5.5	5.6
North East Asia	6.4	6.3	7.0
South East Asia	5.4	4.0	3.8
South Asia	14.4	29.2	28.2
Australasia	3.5	5.0	5.8
Western Europe	63.2	38.1	37.9
Eastern Europe	1.4	6.7	5.9
Middle East	1.1	3.8	5.3
Others	0.4	1.4	0.5

Source: SLTDA 2010^a

EU countries such as U.K., Germany, Netherlands, and France have been the most lucrative tourist markets for Sri Lanka over the years. However, with the unstable security situation in the country, Sri Lanka's tourism sector has experienced a decline in its traditional tourist markets. Meanwhile, Asia has emerged as the second largest source of tourism to Sri Lanka, accounting for 39% of the total arrivals in year 2009 (Table 3.1). Figure 3.1 illustrates the tourist arrival trends by top ten destination countries to Sri Lanka (SLTDA, 2010^a). However, it's been documented that most travelers from Asian countries such as India are mainly business

travelers. In contrast, European travelers comprise mainly of leisure travelers, and they are the most significant for the tourism industry with their high spending and lengthy durations of stay.

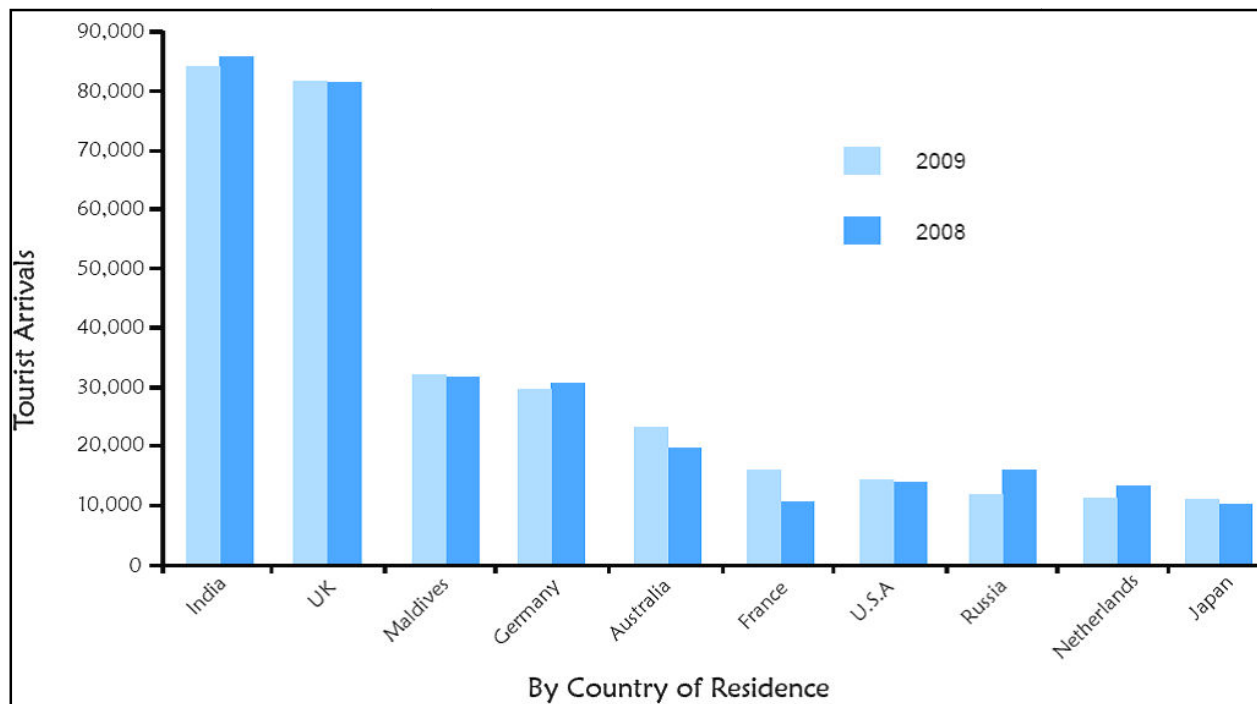


Figure 3.1: Tourists Arrivals by Top Ten Markets - Comparison of Year 2008 and 2009 (Source: SLTDA 2010^a)

With improving security situation in the country, the traditional Western European tourism market is rapidly gaining the market share. For instance, the survey on foreign departing tourists in 2008-2009 conducted by the SLTDA (2010^b) reports that over 55% of tourist are from Western Europe. A comparison of tourist arrival statistics by regions and country of residence for the first three-quarters of years 2009 and 2010 indicates that North American region recorded the largest growth as a tourism market, followed by Middle East and Western Europe (Table 3.2). However, when considered the actual number of tourists, Western Europe as a region remains the largest tourist market for Sri Lanka. Among Western European countries Norway, France, Germany, Switzerland, and Italy showed the highest percentage growths in terms of tourist arrivals.

Table 3.2: Tourist Arrivals by Regions and Country of Residence: A Comparison between First Three-quarter Statistics of Years 2009 and 2010

Region/Country	First 3 Quarters (January – September)		% Change
	2009	2010	
North America	17,416	29,185	67.6
Canada	7,440	15,952	114.4
U.S.A.	9,976	13,233	32.6
Western Europe	121,076	181,099	49.6
France	11,509	22,093	92.0
Germany	19,907	32,016	60.8
Italy	5,188	7,851	51.3
Netherlands	8,159	11,772	44.3
Norway	1,097	3,067	179.6
Sweden	2,323	3,380	45.5
Switzerland	4,310	6,685	55.1
UK	59,940	78,038	30.2
Eastern Europe	18,005	22,623	25.6
Middle East	16,583	27,111	63.5
East Asia	33,945	46,785	37.8
China	6,317	7,328	16.0
Japan	8,265	10,497	27.0
Malaysia	3,781	8,933	136.3
Singapore	5,074	7,362	45.1
Taiwan(P.C.)	1,919	3,537	84.3
South Asia	84,908	113,781	34.0
India	55,228	82,342	49.1
Australia	13,853	20,242	46.1

Source: SLTDA, 2010^c (only countries with significant number of visitors are listed under each region)

3.3 Forest-based Ecotourism in Sri Lanka

World Tourism Organization's global tourism forecasts suggest that "sun-and-beach" resort tourism has matured as a market, and its growth is likely to remain flat. Alternative tourism models such as ecotourism, nature, heritage, cultural, and adventure tourism on the other hand are expected to grow rapidly in the years to come (WTO, 2001). The TIES (2005) points out that more than two-thirds of the U.S. and Australian travelers, and 90% of British tourists

consider “active protection of the environment and support of local communities” to be part of a tourist hotel’s responsibility. The same report further elaborate that in Europe, 20% to 30% of travelers are aware of sustainable tourism and green options, while 5% to 10% of travelers demand green holidays. To take advantage and benefit from these growing markets, Sri Lanka as many other countries in the region begun developing ecotourism in the past decade, and has experienced an early success in attracting large numbers of tourists who are keen to experience the natural beauty of the country. At present, many large scale and small scale companies are engaged in ecotourism operating. However, when considered its diverse landscape and wide ranging flora and fauna, Sri Lanka’s ecotourism resources still remain relatively under-utilized.

As in most of the other tropical countries where ecotourism is practiced, passive and casual ecotourism undertaken predominantly by “mass tourists” as a component of a multipurpose trip, is much more significant to Sri Lanka’s ecotourism industry in terms of revenue generation rather than hardcore ecotourism (Weaver, 1999). For instance, the survey on foreign departing tourists in 2008-2009 indicates that over 22% of visitors rated wildlife or nature-related place as the most outstanding attraction in the country (SLTDA, 2010^b). The same study further indicates that most tourists who visited nature-based destinations were interested in observing elephants and birds. Collectively, over 15% of the foreign travelers have visited at least one wildlife national park with European visitors showing the most interest in wildlife.

With ever increasing projected foreign tourist arrivals, it is critical for Sri Lanka to divert gradually from traditional mass tourism practices, and focus more on environmental friendly tourism models such as ecotourism in order to alleviate negative socio-cultural and environmental impacts of mass tourism. Although attempts have been made by relevant authorities to minimize environmental and social impacts of tourism, the emphasis seems to be

still on developing tourism in coastal areas. For instance, the Sustainable Tourism Development Project to be implemented by the Sri Lanka Tourism Development Authority is centered on developing four coastal tourism destinations (SLTDA, 2009). Unfortunately, the attention given by the responsible authorities to strengthen forest-based ecotourism in Sri Lanka is moderate, and only a handful of studies have been carried out on marketing and promoting ecotourism in Sri Lanka.

3.4 Potential for Forest-based Ecotourism in Sri Lanka

Despite being a small country, Sri Lanka has a diverse geographic landscape that varies from breathtaking mountains and waterfalls in the central hills to spectacular beaches touching the blue sea. At present, the closed canopy forest cover of the country is about 22.4 % (Figure 3.2) of the total land area (Ministry of Environment and Natural Resources, 2002). Sri Lanka's forests are classified in different ways. However, exact amount of forests belong to each category has not accurately determined due to their scattered distribution. Figure 3.3 shows the classification adopted by Legg and Jewell (1995), along with extents of forest types.

3.4.1 Species Diversity

Despite its relatively small size, Sri Lanka's forests possess a high level of biodiversity. A noteworthy feature of Sri Lanka's biodiversity is the remarkably high proportion of endemic species among its flora and fauna. In fact, Sri Lanka has been identified by the environment activist group Conservation International as one of the 25 biodiversity hot spots in the world. About 23% of the flowering plants in the island are endemic (Table 3.3). Most of them are confined to wet evergreen and wet montane forests in the central and southwestern parts of the country (Environmentlanka, 2007).

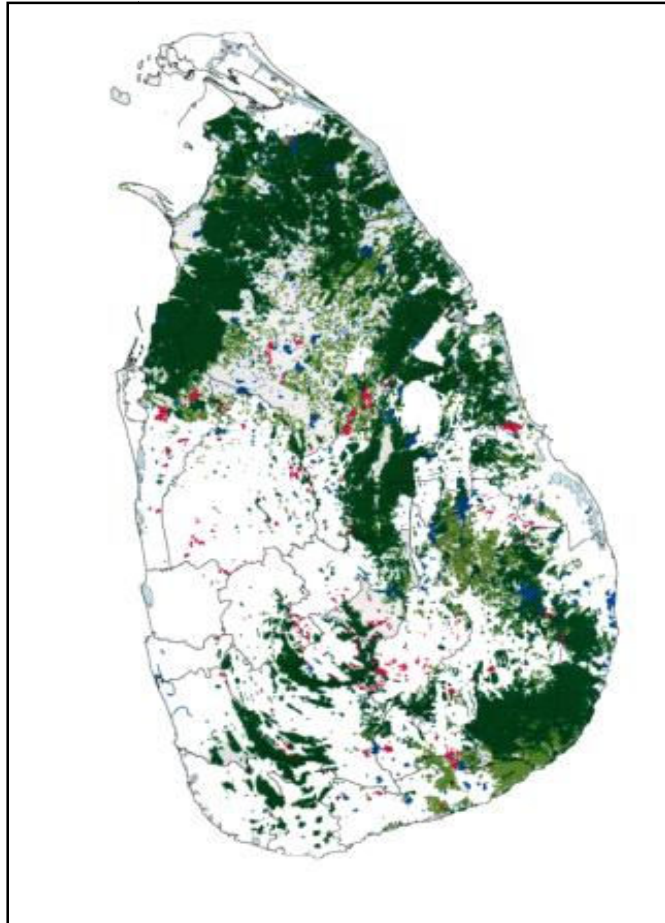


Figure 3.2: Forest Cover of Sri Lanka (Source: Ariyadasa, 2002)

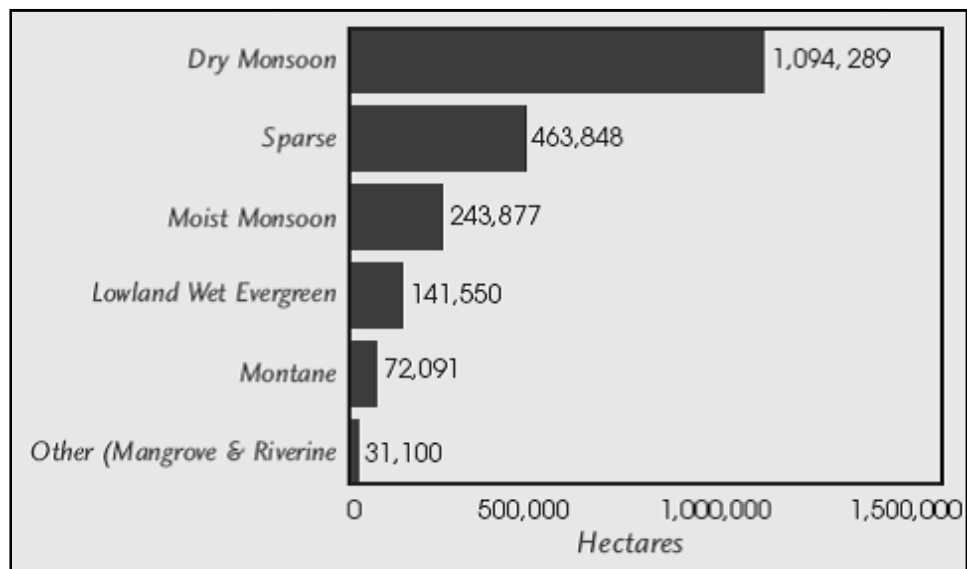


Figure 3.3: Number of Hectares per Major Forest Types (Source: Legg & Jewell, 1995)

Table 3.3: Floral Species in Sri Lanka

Group	Number of Described Species	Percentage Endemism
Algae	866	NA
Fungi	1,920	NA
Lichens	110	35
Mosses	575	NA
Liverworts	190	NA
Ferns and Fern allies	314	18
Gymnosperms	1	0
Angiosperms (Flowering plants)	3,350	23

Source: Environmentlanka, 2007

Sri Lanka has a wide range of topographic and climatic variations, and these factors have a significant contribution to the high level of biodiversity in the country. The country is divided into fifteen different floristic regions based on climatic conditions, with majority of species being found in the wet and intermediate zones.

The fauna also exhibits very high endemism. The number of species in each faunal group keeps changing with taxonomical revisions and descriptions of new species. Amphibians show the highest endemism, followed by reptiles, and fish species (Table 3.4). The wet zone has more endemic species than the dry zone. Among animal species, mammals, birds and fishes are the three major categories that have been extensively studied in Sri Lanka, and each group has its own characteristic distribution pattern.

3.4.2 Ecosystem Diversity

The island has a wide range of ecosystem diversity. Forests, grasslands, inland wetlands, and coastal and marine ecosystems are among the major natural ecosystems found in the country. Marine ecosystems include sea-grass beds, coral reefs, estuaries, lagoons, and mangrove swamps. Agricultural ecosystems and home gardens can also be considered as components of ecosystem diversity. Country's forests vary from wet evergreen forests (both lowland and

montane), dry mixed evergreen forests to dry thorn forests. Wet evergreen tropical lowland forests harbor majority of the biodiversity.

Table 3.4: Faunal Species in Sri Lanka

Group	Number of Described Species	Percentage Endemism
Anthozoa (Corals)	171	NA
Annelida (Earthworms and Leeches)	18	NA
Monogenea (Flatworms)	23+	NA
Crustacea (Prawns, crabs and allies)	400	NA
Mollusca (snails and allies)	325	NA
Mayflies	18	100
Mosquitoes	139	NA
Beetles	540	23
Butterflies	242+	6
Arachnida (Spiders)	400+	NA
Pisces - Coastal fish	400+	NA
Pisces - Freshwater fish	61	39
Amphibia (Frogs and Toads)	48	52
Reptilia (Reptiles)	162	43
Aves (Birds)	441	5
Mammalia (Mammals)	90	16

Source: Environmentlanka, 2007

3.4.3 Key Forest-based Ecotourism Sites of Interest

When considered its tourism resource diversity, Sri Lanka can be identified as a prime destination for ecotourism in Asia. The country's diverse landscapes are ideal for various ecotourism operations, ranging from rain forest trails to swamp/mangrove vegetation tours. Some key forest-based ecotourism sites of interest in the context of this study (which are consequently the data collection sites) are briefly discussed here.

Sinharaja World Heritage Rain Forest: Wet evergreen tropical lowland forests harbor majority of the biodiversity. Sinharaja rain forest; the country's largest remaining virgin forest also belongs to this category, and have been recognized by UNESCO as a Man and Biosphere reserve as well as a World Heritage site (UNESCO, 2009). More than 60% of the trees found here are endemic and many of them are considered rare. There is much endemic wildlife,

especially birds, but the reserve is also home to over 50% of Sri Lanka's endemic species of mammals and butterflies, as well as many species of insects, reptiles and rare amphibians. A staggering 830 of Sri Lanka's endemic species of flora and fauna are found in Sinharaja forest (Department of Forest Conservation, 2000).

Yala National Park: Yala National Park covers about 979 km² of land. Large area of the reserve is parkland, while it also contains beaches, freshwater lakes, rivers, and scrubland. These diverse habitats harbor wide range of wildlife. The park is well known for leopards, Asian elephants, crocodile, wild boar, and water buffalo. It is also home to numerous endemic and migratory birds (DWLC, 2000).

Minneriya National Park: Located in the North Central part of the island, Minneriya wildlife sanctuary was declared as a national park in 1997. The park extends in an area of approximately 8890 hectares, and it is one of the highly visited ecotourism destinations in Sri Lanka. For instance, according to DWLC sources, the park earned revenue of over Rs.10million during the six months period ending in August 2009. Despite elephants being the major attraction, the park harbors wide variety of faunal species including 24 species of mammals, 160 species of birds, 9 species of amphibians, 25 species of reptiles, 26 species of fish, and 75 species of butterflies (Senaratna, 2004). Being in close proximity to Kaudulla and Girithale national parks, the Minneriya national park is an ideal location for bird-watching.

Horton Plains National Park: Horton Plains National Park is located in the highlands of the country, belonging to central province. It is the highest plateau in the country. Declared as a National Park in 1988, Horton Plains National Park covers an area of 3160 hectare. The park predominantly consists of montane cloud forests and wet montane grasslands. Horton Plains is also rich in biodiversity. Majority of the floral and faunal species found here are endemic to the

country while several species are strictly found in Horton Plains National Park. Dominant species in montane forests include *Calophyllum* sp. and *Syzygium* sp. In addition, giant tree fern (*Cyathea* sp.), and colorful *Rhododendron* sp. are among the main attractions. Many species of endemic and threatened mammals, reptiles, amphibians as well as more than 70% of Sri Lanka's endemic birds are found here (DWLC, 2000). Other major National Parks include Gal-Oya, UdaWalawe, Wilpattu, Minneriya-Girithale, Peak Wilderness and Wasgomuwa (Figure 3.4).



Figure 3.4: Popular Forest-based Ecotourism Sites in Sri Lanka

Sri Lanka is also an ornithologist's paradise with over 250 resident bird species, most found in the wet zone. The Kumana sanctuary in the southeast and Bundala, Kalametiya, and Weerawila sanctuaries in the south, associated with lagoons, are the key birding destinations. In

1991, Bundala was recognized as a RAMSAR wetland with global importance for its role as an ecological system and animal habitat. In addition, there are several mangrove vegetations and wetlands that are ideal for bird watching.

3.4.4 Economic Impact of Ecotourism Development

Sri Lanka has the diverse natural resources, human resources, and infrastructure to develop and support ecotourism. Vidanage et al. (1995) in their economic analysis concluded that there is a significant potential for development of nature tourism in Sri Lanka. Nature tourism is proven to be less demanding in terms of accommodation standards/facilities and more demanding regarding information about the destination. Social conflicts can also be avoided by getting the local people's involvement in managing protected areas through nature tourism. Although development of ecotourism has numerous benefits, unplanned implementation can have several possible economic costs. Table 3.5 adapted from Tisdell (2003) summarizes some possible economic benefits and costs.

Table 3.5: Possible Economic Benefits and Costs of Ecotourism

Economic Benefits Possible
<ol style="list-style-type: none"> 1. Increased local employment and income 2. More regular employment and income throughout the year 3. Greater diversification of economic activities, thereby reducing economic risks 4. Opportunities for locally controlled ecotourist-related businesses
Economic Costs Possible
<ol style="list-style-type: none"> 1. Exclusion of locals from ecotourist areas with reduction in income, employment, and resource availability to locals 2. Loss of control of ecotourist businesses and resources to outsiders 3. Consequent disruption of the social fabric of the local community

Source: Tisdell, 2003

Although Sri Lanka is currently not utilizing its ecotourism resources to their fullest potential, each year significant number of tourists visits country's national wildlife parks and forests. For instance, the number of foreign tourists to national wildlife parks in year 2009 totaled 70,688, generating revenue of US\$ 945,390 (Table 3.6). Most of the foreign visitors make one-day visits to national parks as a part of their tour package. Yala national park recorded the highest number of foreign visitors in 2009, followed by Udawalawa, and Minneriya national parks where all these locations are best known for elephant observation. The Horton Plains national park ranked second after Yala national park in terms of total revenue generated. The total revenue generated through national wildlife park system was estimated at US\$ 1,085,634 for the year 2009. With the re-opening of Wilpattu and Kumana national parks which are prime birding destinations, the prospects of attracting more visitors seem brighter.

Table 3.6: Visitation and Revenues from National Parks, 2009

National Park	No. of Foreign Visitors	Revenue (US\$)	No. of Domestic Visitors	Revenue (US\$)	Total Revenue (US\$)
Yala	29,822	45,6556.13	89,698	36073.09	492,629.22
Udawalawa	11,247	89,675.40	43,186	17721.09	107,396.49
Horton Plains	11,026	168,011.87	155,587	56969.18	224,981.05
Bundala	1,943	19,809.13	5,889	2074.00	21,883.13
Wasgamuwa	234	2,446.36	18,731	6811.27	9,257.64
Minneriya	11,118	154,166.15	31,609	12731.91	166,898.06
Kaudulla	5,207	53,797.72	9,963	3510.55	57,308.26
Other	91	927.88	9451	4352.33	5,280.21
Total	70,688	945,390.65	364,114	140,243.42	1,085,634.06

Source: SLTDA, 2010^a

Apart from forest based tourism destinations, in-situ conservation and education centers such as national zoological and botanical gardens also attracted considerable number of foreign tourists. The “Pinnawala Elephant Orphanage” accounted for the heights number of foreign visitors, generating revenue over US\$1.7 million in the year 2009 (Table 3.7). Total revenue

generated by the national zoological garden system was over US\$ 3.2 million. Of the three national botanical gardens in the country, Peradeniya botanical garden attracted most foreign and local visitors, generating US\$ 841,515 from entrance fees (Table 3.7). Present visitation trends in both foreign and domestic tourists to nature-based attractions indicate that further development of infrastructure, management, and promotion of destinations could significantly increase the contribution of ecotourism sector to the national economy. Besides the direct revenue generated through entrance fees, ecotourism creates numerous indirect economic opportunities for local communities that is often neglected in estimating the total economic impact of ecotourism.

Table 3.7: Revenues from Zoological and Botanical Gardens, 2009

Location	No. of Foreign Visitors	Revenue (US\$)	No. of Domestic Visitors	Revenue (US\$)	Total Revenue (US\$)
<i>Zoological Gardens</i>					
Dehiwala	11533	122290.91	1690854	1,157,279.82	1,279,570.73
Pinnawala Elephant Orphanage	138300	1710973.86	381799	248,629.00	1,959,602.86
Total	149833	1,833,264.77	2072653	1,405,908.82	3,239,173.59
<i>Botanical Gardens</i>					
Peradeniya	117427	625,802.73	997997	215,712.59	841,515.32
Hakgala	5871	30,485.45	508913	106,287.41	136,772.86
Gampaha	127	681.82	197443	41,819.73	42,501.55
Total	123425	656,970.00	1704353	363,819.73	1,020,789.73

Source: SLTDA, 2010^a

3.5 SWOT Analysis of the Ecotourism Sector in Sri Lanka

Sri Lanka government has already identified “tourism” as a priority sector in its mission to achieve sustainable economic growth. However, mass tourism has its own negative impacts such as environmental and socio-cultural degradation. As a result of increased global awareness on environmental issues, tourists are increasingly becoming environmentally oriented. In this background, ecotourism has emerged as an alternative form of tourism that promises to minimize negative impacts of mass tourism while providing sustainable income to host communities. In

planning and developing a key sector such as ecotourism, it is vital to assess ecotourism sector's strengths, weaknesses, opportunities, and threats i.e. conduct a SWOT analysis to gain a broader picture. SWOT analysis can serve as an excellent tool for policy makers in decision making. The strengths, weaknesses, opportunities, and threats for Sri Lanka's ecotourism sector are discussed below.

➤ **Strengths**

1. Natural resource base to support wide array of ecotourism opportunities/products.

- High biodiversity: Sri Lanka's tropical forests possess a high level of biodiversity with remarkable high proportion of endemic species of flora and fauna. Sri Lanka has been identified as one of 25 biodiversity hot spots in the world. Apart from large mammals such as elephants, leopards, and sloth bears, it is an ideal destination for birding, as well as studying amphibians and reptiles.
- Wide range of terrestrial ecosystems: Country's climate changes widely as it goes inland. This gives rise to numerous ecosystems with unique flora and fauna. Sri Lanka has several forest types including tropical lowland evergreen, dry monsoon, mountain, sparse, and reverie/mangrove forests.
- Diverse landscape: varying topography from mountains to flat lands, rivers, and unique ecosystems provide excellent opportunities for adventure seekers.
- Aquatic ecosystems: Sri Lanka has wide range of fresh water, brackish water, and marine ecosystems with high bio diversity. Corel reefs along south-west beach are of special importance as tourism/ecotourism attractions.
- Historical and cultural diversity: Sri Lanka has a rich history and culture influenced by Buddhism, which spans beyond 2500 years. Numerous ruins linked to ancient kingdoms are still remaining, attracting thousands of visitors each year. Being a multi-ethnic

country, visitors can experience different cultures as they travel around the country.

Endogenous people/tribes living in North-central parts of the country also provide opportunities for ecotourism, especially with their unique culture and lifestyle.

2. Existing tourist markets.

- Sri Lanka currently has numerous strong tourism markets. Western European countries (U.K., Germany, France, Italy, Netherlands, and Scandinavian countries) have been the main markets. Recently, tourist arrivals from Asian countries such as India, Russia, China and Japan as well as visitors from Scandinavian countries have also picked up, becoming major markets.

3. Skilled labor force for the hospitality industry.

- Skilled labor force for employment in hospitality and tourism industry starting from executive management level to catering/stewards are available domestically at relatively low labor cost. Education and training is provided mainly through state owned Sri Lanka Institute of Tourism and Hotel Management, Universities as well as private sector hotel schools. At present, the supply of skilled labor exceeds the demand; hence trained professionals often seek employment abroad.

4. Accommodation facilities to meet international standards.

- At present, fully facilitated accommodations/rooms totals to 14500 rooms. In addition, there are numerous small scale guesthouses to accommodate mid and low end tourists.

5. Institutional structure to facilitate the growth and development of tourism sector.

- At present, sufficient government institutional framework is there to support the growth of tourism sector including ecotourism. The new Tourism Act in 2007 established 4 institutes to handle different aspects of tourism.

- a. The Sri Lanka Tourism Development Authority: new tourism product, destination, and market development, planning, and policy
- b. The Sri Lanka Tourism Promotion Bureau: marketing and promotion
- c. The Sri Lanka Institute of Tourism and Hotel Management: Human resource development
- d. The Sri Lanka Convention Bureau

➤ **Weaknesses**

1. Continuous focus on traditional tourism products.
 - Despite the wide variety of ecotourism opportunities in the country, policy makers are still concentrating on traditional sun and beach mass tourism to gain quick revenues. Despite lucrative income, mass tourism has its own negative socio-cultural and environmental impacts. All the recently developed tourism development projects are focused on beach destinations. Alternative sustainable forms of tourism such as ecotourism are less prioritized.
2. Inadequate infrastructure to support the growth of tourism sector as a whole.
 - Shortage in accommodation facilities: The Government has already set its target to attract 1,600,000 tourists per year by 2016. However, current accommodation facilities are not sufficient to host such tourist inflow since it requires to more than doubling the number of rooms available at present. Many believe this is an optimistic target under present economic situation in the country.
 - Congested road traffic and under-maintained road network.
 - Limited service destinations and operation of national carrier airline service.
3. Inadequate infrastructure to support the growth of tourism sector.
 - At present, less attention is given by the authorities to develop infrastructure at ecotourism destinations in the country. Necessary infrastructure such as information

centers, restrooms, resting areas/huts, lodging, and camping sites are lacking or poorly maintained in some destinations.

- Access roads, bridges, bird-watching platforms etc. need to be developed and maintained.
4. Lack of communication and marketing strategies to promote different forms of ecotourism products.
 5. Inappropriate management of ecotourism destinations.
 - At present, visitor controlling is hardly exist in most ecotourism destinations. Many destinations easily get overcrowded especially during holidays with local tourists, causing inconvenience to tourists with genuine interest to observe wildlife. Overcrowding and increased traffic inside parks disturb the site as well as flora and fauna.
 - Park entrance fees are placed low and this also attracts crowd in higher numbers.
 6. Absence of onsite interpretation/education specialists.
 - Education/interpretation is a key aspect of ecotourism. At present there's a shortage of skilled ecotourism specialists and competent interpreters at ecotourism destinations. There's a severe shortage of such specialists who are capable of communicating in foreign languages.
 7. Absence of a national ecotourism policy.
 - Although there is a national tourism policy, it emphasizes less on alternative forms of tourism. Scope and goals of ecotourism often conflict with the mass tourism. Hence, there's a need for a national policy and action plan for ecotourism in Sri Lanka.

➤ **Opportunities**

1. Opportunities for new markets and tourism products.
 - European travelers are particularly becoming environmentally aware and conscious of reducing their carbon footprint. For such traveler markets, ecotourism is an ideal product

to capture revenues. The existing biodiversity rich diverse ecosystems provide numerous opportunities for ecotourism development.

- Opportunities exist in dense rainforests to develop canopy walks. These can attract adventure seeking ecotourists.

2. Opportunities for low cost accommodation.

- Alternative tourism products such as ecotourism typically targets tourists who are more demanding for nature and less demanding for facilities. They can be accommodated in small-scale eco-lodges. These alternative tourism forms can help attract more visitors while requiring lesser need to develop costly accommodation facilities. Therefore, ecotourism is an ideal opportunity to achieve the Government's target of bringing in an annual tourist flow of 1,600,000 by the year 2016.

3. Improving security and economy in the country.

- With the eradication of terrorism from north and east part of the country, new opportunities for foreign and domestic tourism have emerged. National parks which were closed for public are now opened, creating new opportunities for ecotourism.

4. Opportunities in developing effective marketing and promotion plans.

- Effective marketing and promotion programs can be launched especially using internet and modern technology to reach new and existing markets.

5. Research and development.

- At present, there are formal institutes including universities that particularly can conduct studies on the ecotourism sector. Most tourism studies are conducted on economic impacts of tourism. Research should more focus on new markets, alternative forms of tourism, demand and supply, behavior, and policy.

➤ **Threats**

1. Under-developed infrastructure: road and accommodation facilities are inadequate to meet the rising demand.
2. Environmental and socio-cultural degradation, since ecotourism is likely to be undertaken passively as a part of multi-purpose trip/tour package.
3. Lack of diversification in tourism products.
4. Competition from other ecotourism destinations in south-east Asia such as India, Philippines, Malaysia, Fiji, Thailand.

CHAPTER 4: THEORETICAL FRAMEWORK

This chapter is focused on the theoretical framework on which this dissertation expands on. The chapter goes on to discuss some theories, models, and concepts widely used in explaining consumer behavior.

4.1 Theoretical Background in Consumer Behavior

All the actions consumers take to acquire, use, and dispose of products and services come under consumer behavior (Mowen & Minor, 1998). Some examples of consumer behavior are gathering information about a product before purchase, buying a product or service, and recommending the product or service to another person. Consumer behavior tends to differ with the product, market, and the environment (March, 2000). Therefore, understanding consumer behavior is essential for marketers to develop appropriate market segmentation strategies, and tailoring service, price, promotion, and distribution channels to fit customer needs. Numerous theories that deal with factors that propel consumers towards their choices have been developed over the years. They can be categorized as follows.

- 1 Psychological models: focus on motives of buying and the process of learning
2. Sociological models: focus on social forces that act upon consumer behavior
3. Economic models: focus on the consumer as a self interested, utility maximizing being
4. Stimulus response models: composite models encompass variety of factors including stimuli from marketing

Although abundant of literature are available on organizational buyer behavior, studies on buyer behavior in the service sector, especially in the tourism sector has received comparatively less scholarly attention (March, 2000). According to literature, analyzing tourism behavior falls into two domains i.e. macro analysis and micro analysis (Seaton & Bennett, 1998). Macro

analysis explores collective tourism movements in terms of number of visitors, trips, and revenue generated etc. while micro analysis is primarily focused on understanding the underlying social and psychological factors of group and individual tourist choices. In other words, microanalysis is more concerned with intra-personal and interpersonal processes that influence tourism behavior (Seaton & Bennett, 1998).

Iso-Ahola (1989) emphasized “identifying motivational factors” as the foundation of tourism behavior studies. He proposed two fundamental motivational dimensions that simultaneously influence leisure/tourism behavior, i.e. escaping and seeking. For example, a tourist may intend to travel in order to “escape” from his routine environment to “seek” peace and pleasure that a natural forest recreation area offers. Hence, these two dimensions describe the reason to travel and travel expectations. The well-known Maslow’s hierarchical theory of motivation, or the hierarchy of needs pyramid has served as a foundation for many tourist motivational studies (Mohammad & Som, 2010). Attempts have been made by previous tourism scholars to empirically test and modify Maslow’s model in the context of tourist motivations (Pearce, 1982).

Past literature on consumer motivations highlights two fundamental motivational dimensions; push and pull factors (Yuan & McDonald, 1990; Uysal & Hagan, 1993). Hence, travel motivation can be viewed as a function of both push and pull factors (Uysal & Hagan, 1993; Luo & Deng, 2008). This view provides a useful framework to understand the motivations underlying tourist behavior. Under this framework, push factors are those that influence a person’s decision to travel, while pull factors refer to factors that make the person to decide where to travel, or to select the travel destination (Kim et al., 2003). Once an individual is pushed by internal motives (socio-psychological motivations) to travel, pull factors such as

specific destination attributes function as forces of pulling an individual to a particular travel decisions (Uysal & Hagan, 1993).

Many studies (Fielding & Pearce, 1992; Uysal et al., 1994) have investigated the push motives of visitors visiting natural recreation areas. These studies revealed that relaxation, novelty, enjoyment, and prestige as some of the main push motives for an individual's decision to travel. In another study conducted on domestic and foreign backpackers in national parks of Australia, Loker-Murphy (1996) identified excitement, adventure, and meeting local people as the main motivational factors. In contrast to push motives, pull factors are related to features, attractions, and attributes of a destination itself. In addition to these tangible resources, travelers' perceptions, travelers' expectations such as novelty, benefit expectations, and marketed image of the destination can also function as pull factors (Baloglu & Uysal, 1996). In the context of natural forest recreation, although pull factors tend to differ greatly with the location, main pull factors seem to be natural resources and historical or cultural resources (Kim et al., 2003).

4.2 Theory of Reasoned Action

The Theory of Reasoned Action (TRA) was developed by Fishbein and Ajzen (1980). This theory suggests that behavior is determined by intention to perform the behavior, while the intention in turn, is dependent upon attitudes and subjective norms. The theory has been utilized and tested by researchers in many fields including marketing and social psychology to predict human behavior (Shimp & Kavas, 1984; Armitage & Conner, 2001; Zhang & Mao, 2008). However, the performance of TRA in predicting different behaviors under different circumstances tends to vary. For instance, Belleau et al. (2007) applied TRA to predict the purchase intentions of young consumers. Their results partially support the applicability of TRA in predicting purchase intention of consumer products.

In the context of travel and hospitality research, Brown (1999) employed the TRA model to investigate “culturally inappropriate tourist behavior” in an indigenous heritage site in Central Australia. He found a strong relationship between beliefs and behavioral intentions, and the strength of beliefs to vary with gender. Ryu and Jang (2006) modified the TRA by adding past behavior to predict tourist behavioral intentions to try local cuisine in a hypothetical situation.

The TRA model is simple and robust. For instance, Sheppard et al. (1988) in their meta-analyses of past researches investigated the effectiveness of TRA model in explaining human behavior. The analysis revealed that the model has a strong overall predictive capability even when researchers have applied it to explain circumstances outside the originally specified model conditions.

According to the TRA framework, identify and measure the behavior of interest is the first step to assess or predict a specific human behavior in question. Once the behavior is identified, the antecedents of behavior can be identified (Ajzen & Fishbein, 1980). Behavioral intentions directly affect the behavior. Three main components constitute the TRA; behavioral intentions, attitudes, and subjective norms. The concept of “behavioral intention” is the center of TRA. Behavioral intention is an individual’s intention to perform a specific act, or the motivation necessary to engage in a particular behavior. According to the TRA, a person's behavioral intention is a function of his/her attitudes about the behavior, and subjective norms (Figure 4.1).

A person’s attitude toward an object is also a function of “beliefs” about the consequences of performing the behavior, and evaluation of its outcomes. Here, beliefs are defined as “a person’s estimation of probability of attaining an attribute that links to the object” (Fishbein & Ajzen, 1975). Hence, this suggests that an individual is more likely to engage in a certain behavior if he/she has a positive attitude towards the behavior.

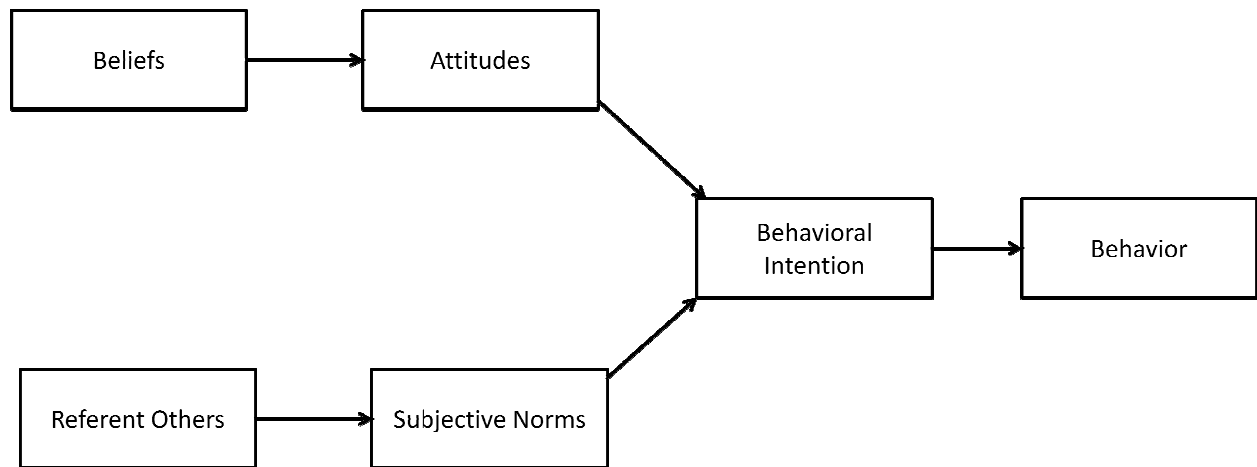


Figure 4.1: The Theory of Reasoned Action

Subjective norm is the second determinant of the TRA model. Subjective norm is the perceptions of relevant referent groups and/or the social pressures to perform or not to perform a certain behavior. In other words, subjective norm refers to "the person's perception that most people who are important to him/her think he/she should or should not perform the behavior in question" (Azjen & Fishbein, 1975). This implies that there are two underlying components of subjective norms i.e. social pressure from significant referents (normative beliefs), and the motivation to comply with referents. Therefore, an individual's likelihood of engaging in a certain behavior is greater if the social pressure from referent groups to perform that behavior is greater.

4.3 Expanded Rational Expectations Model

After the development of TRA, researchers introduced modifications to improve the applicability of the theory in analyzing behaviors under different circumstances. For instance Sapp and Harrod (1989) introduced a modification to the TRA by adding the construct of social acceptability to the model, and named the modified model as Expanded Rational Expectations (ERE) model. They also used the social acceptability concept to further define normative beliefs. Social acceptability evaluates the extent that an individual feels their actions are affected by the

opinions of societal institutions. Referent groups and subjective norm which are initial components of TRA model essentially deals with assessing particular people's influence on the beliefs of the individual. Social acceptability in contrast, examines the view an individual has towards social systems/institutions regarding the behavior in question or the level of normative belief formation that arise from sources other than referent groups and subjective norm (Crockett & Hoover, 2002).

The ERE model hypothesize that social acceptability has direct interactions with attitude, subjective norms, and intentions. Furthermore, based on the relationship between attitudes and subjective norms, it is postulated that social acceptability would also have an indirect relationship with behavioral intentions. The model further suggests that there's a direct interaction between an individual's intention to perform a behavior and social acceptability. Based on these interactions, social acceptability will have an indirect effect on a person's behavior through attitude, subjective norm, and intention. The influence of social acceptability on a behavior under investigation can be measured by questions/statements targeting on how a person thinks most people feel toward the behavior, and the opinions individuals have about engaging in the behavior when surrounded by individuals in either environment (Sapp & Harrod, 1989).

The concept of knowledge is fundamental to the understanding of consumer behavior, and is interwoven with many consumer behavior theories (McNeal & McDaniel, 1981). The knowledge a person has about a particular behavior can also play a key role in that person's likelihood of engaging in the behavior under investigation. The consumer acquires knowledge about a product over time and, his/her purchase decision is said to be influenced by the level of knowledge he/she has on the product (Berger & Mitchell, 1989). The higher the knowledge a

person has on a product, the higher the likelihood that the consumer makes the correct behavioral decision. Sapp (1991) further expanded to the ERE model by adding the “knowledge” component to improve the precision of the model in predicting human behavior (Figure 4.2). The model suggests that knowledge has a direct effect on attitudes, beliefs, behavioral intention, and behavior itself, and the existence of such relationships are buttressed by numerous studies (Gussow & Contento, 1984; Raju et al., 1995).

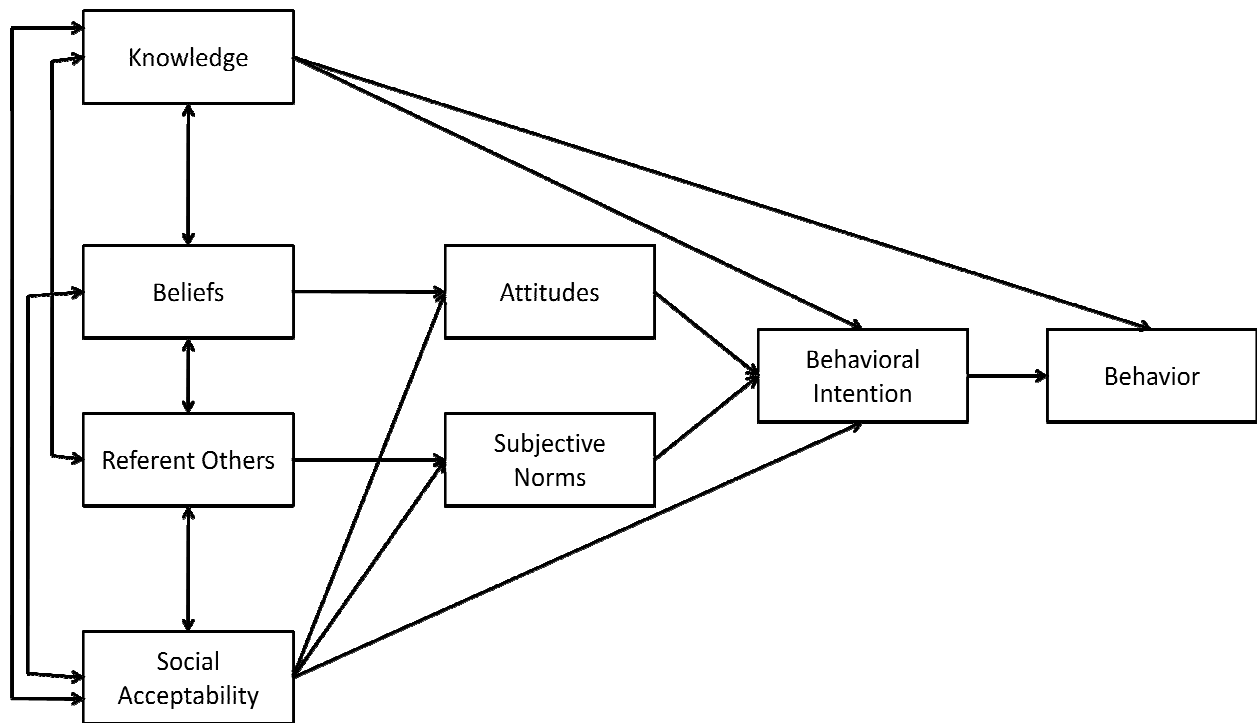


Figure 4.2: Expanded Rational Expectations Model

Literature in consumer research describes three distinct types of knowledge; subjective knowledge, objective knowledge, and usage experience (Brucks, 1985; Raju et al., 1995). Brucks (1985) described these three concepts as “an individual's perception of how much he/she knows”, “the amount, type, or organization of what an individual actually has stored in memory” and “amount of purchasing or usage experience with the product” respectively. In the modified ERE model, Sapp (1991) specifically addressed objective knowledge.

4.4 Theory of Planned Behavior

The TRA has been adopted and tested in different setting by numerous authors and found to be useful in predicting human behavior (Shimp & Kavas, 1984; Armitage & Conner, 2001; Zhang & Mao, 2008). However, the theory of reasoned action was developed specifically to deal with volitional behaviors (Ajzen, 1988). To develop and improve the theory further to explain behaviors that are not under complete volitional control, Ajzen (1991) introduced an extension to the TRA, which is known as the Theory of Planned Behavior (TPB). The TBP differs from TRA by including constructs “control beliefs” and “perceived behavioral control” (Figure 4.3).

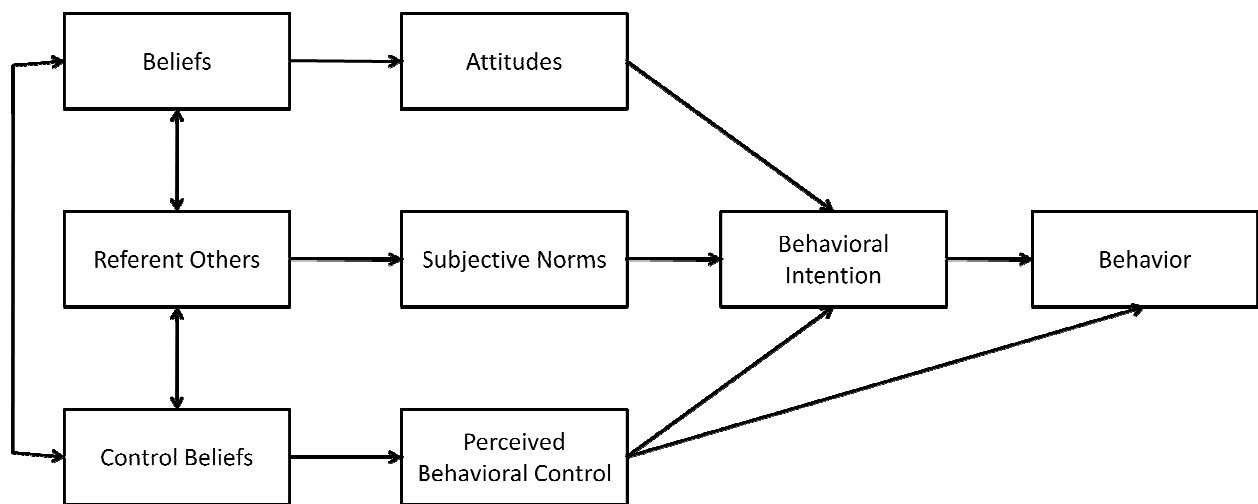


Figure 4.3: Illustration of the Theory of Planned Behavior

The perceived behavioral control is defined as an individual's perception of his/her ability to perform a specific behavior (Ajzen, 1991). An individual develops the level of perceived behavioral controls based on his/her control beliefs. Two assumptions provide the basis for the proposed relationship between perceived behavioral control and behavioral intention/behavior i.e. (i) an increase in perceived behavioral control will result in an increase in behavioral intention and the likelihood of performing the act and, (ii) perceived behavioral control will influence behavior directly to the extent that perceived control reflects actual control (Lam &

Hsu, 2004). According to the theory, Ajzen (2006) proposes that human behavior is influenced by three kinds of contemplations:

1. *Behavioral beliefs*: beliefs about the likely outcomes of the behavior and the evaluations of these outcomes.

2. *Normative beliefs/referent groups*: beliefs about the normative expectations of others and motivation to comply with these.

3. *Control beliefs*: beliefs about the presence of factors that may facilitate or impede performance of the behavior and the perceived power of these factors.

Behavioral beliefs construct favorable or unfavorable attitude toward the behavior in question. Normative beliefs serve as antecedents for perceived social pressure or subjective norm, while control beliefs construct perceived behavioral control. The inclusion of perceived behavioral control takes into account the information about probable constraints on the action as perceived by an individual. Thus, TPB assumes that a behavior can be directly predicted by the intention to perform the behavior, and indirectly predicted by the perceived behavioral control under circumstances where the behavior is not under complete volitional control (Lam & Hsu, 2004). Attitude towards the behavior, subjective norm, and perception of behavioral control jointly form behavioral intentions (Ajzen, 2006).

Behavioral intention can be viewed as an indicator of a person's readiness to perform a given behavior. According to Ajzen (2006), behavioral intention is assumed to be an immediate antecedent of behavior. When measured accurately, behavioral intention can produce the best predictor of a behavior under investigation (Fishbein & Ajzen, 1975; Ajzen, 1991). In this study, the researcher defines behavioral intention as an individual's anticipation of a future trip to an ecotourism destination i.e. a natural forest-based recreational area for leisure purpose. An

individual's reaction to a given situation with respect to a given target can be described as behavior.

Generally, the TPB suggest that, a more positive attitude and subjective norm backed by higher degree of perceived control would lead to stronger intention to perform the behavior in question (Ajzen, 2006). Although intention is assumed to be the immediate antecedent of behavior, in many occasions, execution of a behavior becomes difficult due to certain constraints that may limit the volitional control. Hence, the construct “perceived behavioral control” in TPB is an important addition.

Despite TPB being a parsimonious model in explaining human behavior, several authors have pointed out its weaknesses or insufficiencies. For instance, Sparks and Shepherd (1992) suggested modifications to accommodate “self-identity” in TPB model to explain an individual’s “green consumerism”. Similarly, Parker et al. (1995) proposed additional components to address moral norms. Some authors argue that TPB lacks in addressing anticipated emotions (Perugini & Bagozzi, 2001). In addition, TPB’s inadequacy in accommodating and distinguishing perceptions of control and perceptions of self-efficacy has been also highlighted (Armitage & Conner, 1999). Another weakness of TPB is that it does not sufficiently include motivational aspects to act or perform a behavior.

4.5 Three-Component View of Attitudes

A major focus of theory and research in the social and behavioral sciences has been the construct of attitude (Ajzen, 2001). Many experts believe that attitudes are the most crucial element to understand consumer behavior since behaviors are greatly determined by people’s states of mind or attitudes towards the subject (Wilkie, 1994). Attitude is defined as a “learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a

given object” (Huang et al., 2008). The attitude a consumer has towards a product can provide valuable evidence about the type of decisions and actions a consumer will take regarding the product, and therefore, study of consumer attitudes is enormously important for marketers. Over the years, marketers have faced many obstacles when it comes to marketing eco-friendly goods/services. Eco-friendly products may not always be the most attractive or cost effective. Hence, it is difficult to influence consumer purchase behavior without changing their attitudes and values towards the environment. Changing consumer attitudes involves intensive effort over long period of time.

Over the years, numerous attempts have been made by behavioral scientists to understand the attitude-behavior relationship through construction of attitude models, while capturing its underlying dimensions. One popular definition among social psychologists sees attitude as continuing organization of emotional, perceptual, and cognitive processes (Krech & Crutchfield, 1948 in Yuan et al., 2008). This definition views that attitude consists of three components: (i) the cognitive, or knowledge, component; (ii) the affective, or emotional, component; and (iii) the conative, or behavioral-tendency, component (Yuan et al., 2008). The classic “three-component view of attitudes” stems from this notion (Figure 4.4).

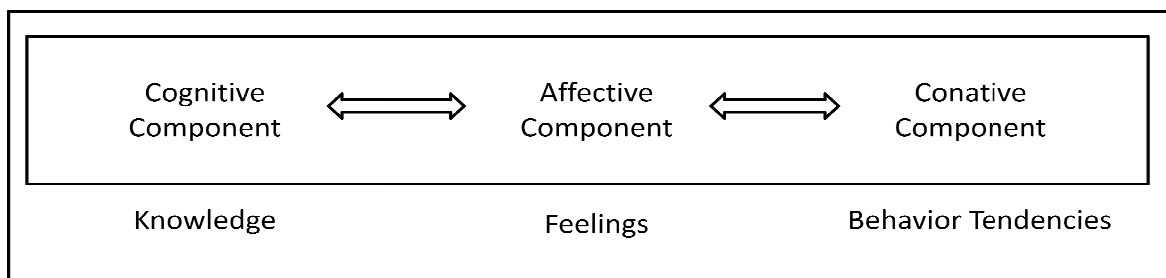


Figure 4.4: Three-component View of Attitudes. Source: Wilkie (1994)

The three-component model discusses three major types of response i.e. affective (evaluative feelings and preferences), cognitive (opinion and beliefs) and behavioral/conative

(open actions and statements of intent). The knowledge or beliefs acquired through experience on an object in combination with information gathered from the environment construct the cognitive component. The affective component describes the person's emotions or feelings towards an object (Wilkie, 1994). These emotions/feelings are predominantly evaluative, and they recapitulate an individual's overall assessment of the object i.e. overall rating of the object as favorable or unfavorable. Hence, affective component mediate in linking beliefs with behavior. The third component conation represents the probability an individual would take a specific action or engage in a certain behavior in response to an object or scenario (Wilkie, 1994). In the context of marketing and consumer research, the intention to purchase represents the conative component.

CHAPTER 5: RESEARCH MODEL AND HYPOTHESIS

Developing theoretical models to explain various phenomena is a major task in all areas of science. It is a well-known fact that a single scientific study or a small sample study will not suffice to resolve an issue of any scale. Therefore, as suggested by Hunter, Schmidt, and Jackson (1982), the foundation of science is the culmination of knowledge from the results of many studies. One of the main objectives of this study is to develop and test an ecotourism behavioral model of natural forest recreation areas in Sri Lanka. The hypothesized model of ecotourism behavior is based on Ajzen's theory of planned behavior, and it is modified with additional components knowledge and satisfaction. In addition, the theoretical foundations of visitor profiling, as well as relationships of previous ecotourism visits and future behavioral intentions are also discussed.

5.1 Profiling Ecotourists

It is a widely acknowledge fact that ecotourism has become a substantial source of revenue for the international tourism industry. In fact, the relevance of ecotourism as an emerging market niche can be exemplified by the fact that the United Nations designated the year 2002 as the International Year of Ecotourism. Estimates about the economic significance of ecotourism vary considerably with some studies concluding that ecotourism comprises between 2 and 7 percent of all leisure travel whereas other researchers claim that ecotourism's share of leisure travel market may be as high as 25 percent (Weaver, 2001). Although estimates on the size of the ecotourism market tend to vary widely, evidences suggest that ecotourism market is gradually growing into a significant segment in tourism marketplace.

With the rising demand, ecotourism market is becoming more heterogeneous, and ecotourism operators are facing the task of meeting expectations of diverse consumers of

ecotourism products (Higham & Carr, 2002). In this background, the need to define and distinguish ecotourists from other types of tourists has become important. Scholars in the field have attempted to define the “ecotourist” in numerous ways. Lee (2007) identified that definitions for ecotourist in literature are based on three basic criteria; type of sites visited by tourists (tourist entering a nature-based site as ecotourists), on-site activities (tourists engaging in particular activities) and, motivation to visit (tourist’s underlying motivations of travelling to an ecotourism destination). Considering all visitors to nature-based attractions as ecotourists, Ballantine and Eagles (1994) described Canadian ecotourists as middle aged, highly educated, comparatively high income individuals who are interested in learning about the environment. Fennell (2003) further reported similar demographic descriptions for ecotourists in North America and Europe. However, many authors oppose the notion of defining ecotourist solely based on the type of sites visited or on-site activities engaged while visiting the destination (Tao et al., 2004; Kerstetter et al., 2004). Using a more holistic approach, Weaver (2001) defined ecotourist as “tourists seeking nature-based learning experiences and behaving in an environmentally and socio-culturally sustainable manner”.

Ecotourist motivations have been previously studied by several authors (Eagles, 1992; Eagles & Cascagnette, 1995; Holden & Sparrowhawk, 2002; Luo & Deng, 2008). These studies in general highlight ecotourists’ bio-centric attitudes while their motives are often associated with appreciating pristine natural areas, having deep commitment to conservation and environmental issues, as well as the desire to have deep interaction with nature. For instance, Luo and Deng (2008) found environmental attitudes are strongly related to nature-based tourism motives. However, the literature provides less information on actual on-site behavior of ecotourists. As suggested by Boyd and Butler (1993), ecotourism is a dynamic, flexible, and

prone to change activity that varies within the variety of destination settings. Hence, ecotourist behavior may also vary with the geographical and cultural settings (Kerstetter et al., 2004). Surveying a group of British tour-guides soliciting their opinions on behavioral characteristics of Japanese, French, Italian, and American tourists during guided tours, Pizman and Sussmann (1995) further suggested that tourist behavior tend to differ significantly with the nationality.

Only a few studies so far have attempted to segment ecotourist market based on behavioral grounds (Weaver & Lawton, 2002; Kerstetter et al., 2004) while most ecotourism studies conducted in the past have been focused on North American and European ecotourists. Information on Asian ecotourism markets is less evident in literature. In addition, several authors have stressed the importance of using a behavioral approach to distinguish true ecotourists from other types of tourists since visitors' on-site behavior according to ecotourism principles is a key aspect in ecotourism (Horwich, 1993; Kerstetter et al., 2004). Hence, this part of the study is guided by the research question "Is it possible to identify distinct segments of visitors to forest-based attractions in Sri Lanka, based on visitors' motivations and on-site behavioral characteristics?" Here, it is attempted to develop motivational and behavioral profiles of visitors to forest-based recreational attractions in Sri Lanka, and identify "true" ecotourists using a motivational and behavioral approach.

5.2 Modeling Ecotourism Behavior

How individuals go about decision making has been in the research agendas of scholars in many social science disciplines. As a result, a substantial body of decision making literature was accumulated over the years, particularly in the field of marketing (Sirakaya & Woodside, 2005). Numerous consumer behavior models developed by researchers attempt to describe the consumer buying process in-detail through various approaches. The first formal explanation of

consumer decision making process was made by Bernoulli nearly 300 year ago, and it was later expanded to the so-called “Utility Theory” by Neumann and Morgenstern (Richarme, 2005). The utility theory suggests that rational consumers make decisions based on the expected outcomes of their decisions. Later on, consumer behavior models introduced by authors such as Nicosia in 1966, Engel, Kollat, and Blackwell in 1968, Howard and Sheth in 1969, and Gilbert in 1991 became important turning points in the discipline and hence known as the “Grand Models” of consumer behavior (Richarme, 2005). These models predominantly explain decisions relating to tangible, manufactured products. Despite the limitations in their applicability to explain service purchase decisions, tourism scholars used the “grand models” as a basis for predicting tourism service purchasing behaviors (Sirakaya & Woodside, 2005). The validity of using traditional consumer behavior models to explain tourism choices/behaviors soon became under the scrutiny of many tourism scholars since in many cases, these conventional models were applied with little respect to the purpose and research situation. As a result, alternative tourism behavior models started to appear.

Present body of tourism literature provides substantial theoretical and empirical works to describe an individual’s tourism choice processes and behaviors. Citing numerous authors, Sirakaya and Woodside (2005) in their literature review compared the tourist’s decision-making process to a funnel-like narrow down procedure consisting of well-defined stages: (a) recognition that there is a decision to be made, (b) formulation of goals and objectives, (c) generation of an alternative set of objects from which to choose, (d) search for information about the properties of the alternatives under consideration, (e) ultimate judgment or choice among many alternatives, (f) acting upon the decision, and (g) providing feedback for the next decision. Evidences suggest that this decision-making process is influenced by both psychological/internal

variables such as attitudes, motivation, beliefs, and intentions, and non-psychological/external variables such as time, pull factors, and marketing mix. This decision process is at the center stage of tourists' behavior. Therefore, an in-depth understanding of the complexities and relationships of these variables is important in tourism marketing research.

In marketing, it is largely accepted that successful product/service development is based on a solid foundation of consumer information. In the context of ecotourism, predicting and influencing ecotourist behavior is one of the key tasks of ecotourism operators, and this often involves assessing information on recreational participation and demand (Lee, 2007). According to Stamboulis and Skayannis (2003), tourism experiences are formed through a process of visiting, learning and enjoying activities in a unique environment. Tourism experience encompasses behavior, perception, attitude, cognition, and emotions that can be either expressed or implied (Oh et. al, 2007). A better understanding of the nature of ecotourism experiences allows tour operators to modify their services or tourism products, and manipulate the demand.

Tourism literature traditionally cites three stages of a tourism experiences; before, during, and after travel stages. According to Borrie and Roggenbuck (2001), a wilderness experience consists of multiple phases which includes anticipation/planning, travel to, participation, travel back, and recollection phases. Aho (2001) further expanded the notion of tourism experience to include seven stages; orientation, attachment, visiting, evaluation, storing, reflection, and enrichment. An ecotourism experience can advance a person's intellectual curiosity, understanding, and appreciation of the natural and cultural environment. Since behavior is an essential component of tourism experience, detailed understanding of ecotourists behavior is important from the perspective of ecotourism operators and recreational planners to provide optimal tour experiences.

Tourism scholars have used numerous behavioral theories to explain tourism/recreational behavior. Fishbein and Ajzen (1975) developed the Theory of Reasoned Action (TRA) which theorizes that human behavior is influenced by attitudes and subjective norms. Three main components constitute the TRA; behavioral intentions, attitudes, and subjective norms. The concept of “behavioral intention” is the center of TRA. Behavioral intention is an individual’s intention to perform a specific act, or the motivation necessary to engage in a particular behavior. According to the TRA, a person's behavioral intention is a function of person's attitudes about the behavior and subjective norms. The theory has been applied in travel and hospitality research by previous researchers (Brown, 1999; Ryu & Jang, 2006). However, the TRA is originally specified to explain behaviors under complete volitional control, and critiques argue that TRA has limited validity in predicting recreational behavior, since recreational activities require integration of internal and external resources (Ajzen, 1991).

Ajzen (1985, 1991) proposed the Theory of Planned Behavior (TPB), which is a modification of the TRA. TPB included the added construct of perceived behavioral control to explain an individual’s perceived ease or difficulty in performing a behavior. Ajzen (1985) theorized that three types of beliefs drive human behavior. These three drivers of behavior include behavioral beliefs, normative beliefs, and control beliefs. Beliefs about likely outcomes of a particular behavior weighted by evaluations of these outcomes form behavioral beliefs. Beliefs about expectations of significant others weighted by an individual’s motivation to comply with significant other’s expectations resemble normative beliefs. Beliefs about factors that can facilitate or hinder a certain behavior and the perceived influence of these factors make up control beliefs. Behavioral, normative, and control beliefs are the respective precursors of attitudes toward the behavior, subjective norm, and perceived behavioral control. Favorable

attitudes, subjective norms and higher degree of perceived behavioral control lead to stronger behavioral intention and behaviors. Perceived behavioral control is a useful consideration particularly for behaviors that are not under complete volitional control.

Since its emergence, tourism scholars have used TPB to predict tourism behavior under different conditions with varying degree of success. Ajzen and Driver (1992) successfully used TPB to predict leisure choices of college students. Lam and Hsu (2004) tested the fit of the TPB with potential travelers from Mainland China to Hong Kong. Their results showed that data fitted the TPB model moderately well in explaining respondents' traveling intentions. They also found that attitude, perceived behavioral control, and past behavior to be related to respondents' travel intention. Lee (2007) applied satisfaction as the mediating variable and combined theory of planned behavior to develop an ecotourism behavioral model for national forest recreation areas in Taiwan. He found that attitude, subjective norms, and perceived behavioral control affect satisfaction directly and behavioral intention and behavior indirectly. Subjective norm had the strongest effect on satisfaction, followed by perceived behavioral control and attitude. Satisfaction and behavioral intention were found to be significant mediating variables in this behavioral model.

Satisfaction is a dominating constructs that has been extensively studied by researchers in tourism marketing (Baker & Crompton, 2000). Review of marketing and tourism literature can lead to confusion over differentiation of the two terms quality and satisfaction. For instance, an individual's reactions to attributes of a vacation destination may imply "satisfaction" in marketing literature, while the same may define "quality" in tourism literature (Compton & Love, 1995). In service marketing, customer is a key component of the service delivery process and the role of customer significantly affects the overall service quality (Zeithmal et al., 2009).

In the context of tourism and leisure services, past studies have attempted to discriminate quality and satisfaction constructs based on the differences between quality of opportunity and quality of experience (Compton & Love, 1995). The quality of opportunity or performance refers to attributes of a service those are under service supplier's control while quality of experience or satisfaction encompasses attributes that are under control of the visitor (Baker & Crompton, 2000). In other words, satisfaction is a psychological outcome or emotional state of mind an individual has after a recreational experience. Past studies suggest that higher levels of satisfaction lead to positive behavioral intentions and behaviors (Baker & Crompton, 2000; Tian-Cole et al., 2002).

Knowledge is also an important topic in consumer research that received increased scholarly attention in the recent past. Knowledge is especially tied to information search behavior (Gursoy & McCleary, 2004; Dodd et al., 2005). Prior knowledge plays a key role in information acquisition, search, processing, and decision making (Brucks, 1985; Raju et al., 1995). Literature in consumer research describes three distinct types of knowledge i.e. subjective knowledge, objective knowledge, and usage experience (Brucks, 1985; Raju et al., 1995). Brucks (1985) described these three concepts as “an individual's perception of how much he/she knows”, “the amount, type, or organization of what an individual actually has stored in memory” and “amount of purchasing or usage experience with the product” respectively. According to Brucks (1985), usage experience is less directly linked to behavior. Despite being distinct concepts, these are positively correlated with each other (Raju et al., 1995).

In the context of tourism, an individual's familiarity with a destination may reflect tourists' subjective knowledge while his/her expertise represents the objective knowledge of the destination (Gursoy & McCleary, 2004). The concepts of subjective and objective knowledge

have been examined in relation to individual's ecological behaviors. An empirical study by Ellen (1994) on a group of environmentally concerned individuals found low level of objective knowledge (what they actually know) associated with their pro-environmental behavior. Objective knowledge having non-significant relationship with subjective knowledge suggested that individuals make pro-environmental decisions even without having the necessary knowledge to make sound ecological decisions. This may indicate the effect of social influences on an individual's behaviors.

The concept of knowledge is fundamental to the understanding of consumer behavior, and is interwoven with many consumer behavior theories (McNeal & McDaniel, 1981). The knowledge a person has about a particular behavior can also play a key role in that person's likelihood of engaging in the behavior under investigation. The consumer acquires knowledge about a product over time and, his/her purchase decision said to be influenced by the level of knowledge he/she has on the product (Berger & Mitchel, 1989). The higher the knowledge a person has on a product, the higher the likelihood that the consumer makes the correct behavioral decision. Knowledge is believed to have direct effects on attitudes, beliefs, behavioral intention, and behavior itself, and existence of such relationships are buttressed by numerous studies (Gussow & Contento, 1984; Raju et al., 1995).

Despite the fact that the theory of planned behavior has been used successfully, some problems remain to be addressed about how the construct of perceived behavior control should be measured, and the nature of perceived behavioral control (Armitage & Conner, 1999). To overcome these issues, Ajzen (2002) suggested that the concept of perceived behavioral control should capture a person's confidence that they are capable of performing the behavior under investigation. A series of questions addressing the level of difficulty associated with a behavior

or the likelihood that a participant can perform the behavior are often used to capture a person's sense of self-efficacy with respect to performing the behavior (Ajzen, 1991; 2002).

Based on this theoretical framework, present study attempts to develop an ecotourism behavioral model of natural forest recreation areas, integrating satisfaction as intermediary variables and knowledge as a formative variable. The hypothesized model for this study is illustrated in Figure 5.1. The proposed model is a modification of Ajzen's (1991) TPB, and an extension of Lee's (2007) work. The model is based on 11 basic assumptions. The alternative hypotheses correspond to each hypothetical relationship are listed below. These hypothetical relationships are depicted in Figure 5.1 by arrows marked with H₁ to H₁₁.

H₁: Knowledge positively influences attitudes

H₂: Knowledge positively influences satisfaction

H₃: Knowledge positively influences behavioral intentions

H₄: Knowledge positively influences behaviors

H₅: Attitudes positively influences satisfaction

H₆: Social influence positively affects satisfaction

H₇: Perceived behavioral control positively influences satisfaction

H₈: Perceived behavioral control positively influences behavioral intentions

H₉: Perceived behavioral control positively influences behaviors

H₁₀: Satisfaction positively influences behavioral intentions

H₁₁: Behavioral intentions positively influence behavior

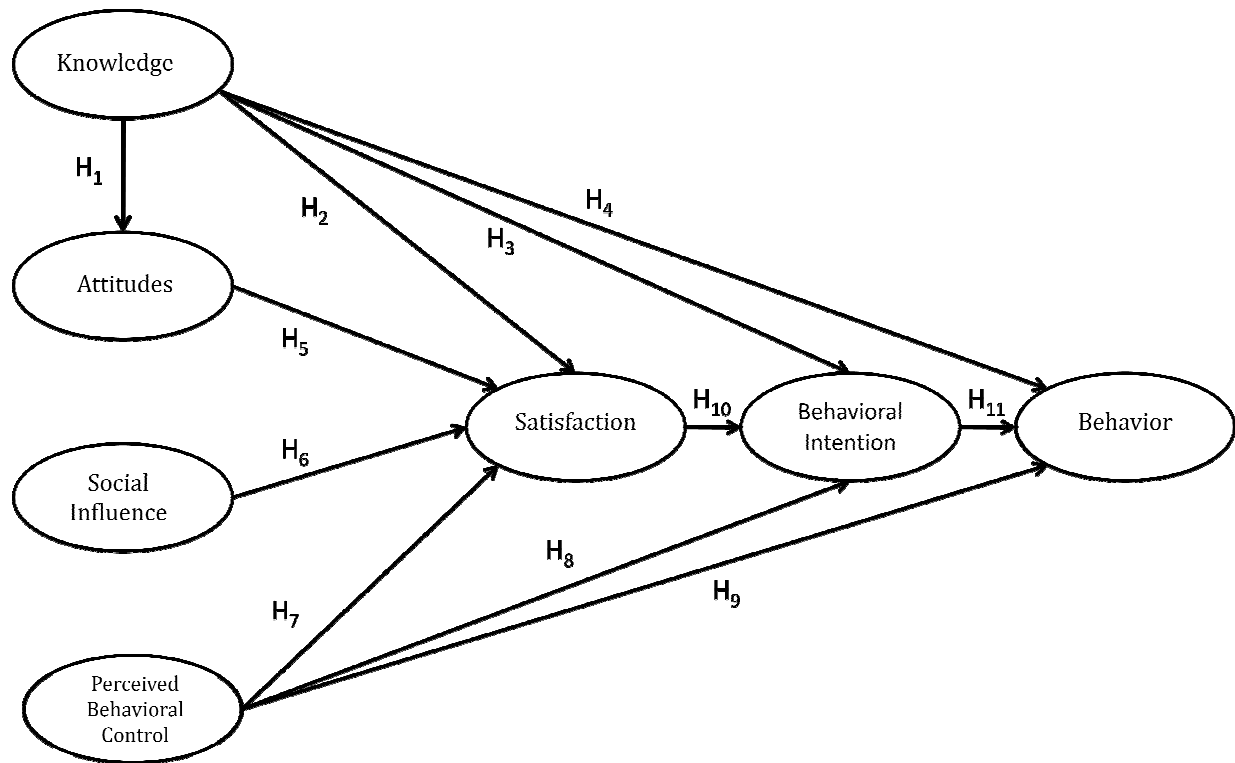


Figure 5.1: The Hypothesized Ecotourism Behavioral Model

Using the 11 basic hypothetical relationships as a foundation, possible paths where hypothesized predictors of behavior combine to influence behavior can also be tested as hypotheses. Alternative hypotheses for all possible influential paths are listed below.

H₁₂: Knowledge positively and directly affects attitudes and indirectly affects satisfaction, behavioral intention and behavior

H₁₃: Knowledge positively and directly affects satisfaction and indirectly affects behavioral intention and behavior

H₁₄: Knowledge positively and directly affects behavioral intention and indirectly affects behavior

H₁₅: Attitudes positively and directly affects satisfaction and indirectly affects behavioral intention and behavior

H₁₆: Social influence positively and directly affects satisfaction and indirectly affects behavioral intention and behavior

H₁₇: Perceived behavioral control positively and directly affects satisfaction and indirectly affects behavioral intention and behavior

H₁₈: Perceived behavioral control positively and directly affects behavioral intention and indirectly affects behavior

H₁₉: Satisfaction positively and directly affects behavioral intention and indirectly affects behavior

5.3 The Role of Previous Visits in Predicting Ecotourism Behavioral Intentions

Attracting tourists to revisit and recommend the destination to others is of greater importance in destination marketing and tourism development. In general tour operators' success depends on providing what the consumer wants. They respond to trends and changes in demand. However, when it comes to marketing ecotourism, there's a need that tour operators manipulate or shape the demand for tour products that are more sustainable and socially beneficial to the host destination. This can be achieved through offering attractive ecotourism opportunities and managing physical evidences, which is a key concept in service marketing (Zithmal et al., 2009). A better understanding on relationships between future behavioral intentions and its antecedents allow ecotourism operators to manipulate their ecotourism products to optimize customer satisfaction and improve their marketing efforts. Hence, this study component further examines the role of previous visits in predicting future behavioral intentions to engage in ecotourism.

Tourist behavior consists of several stages which include pre-visit decision-making, onsite experience, experience evaluations, and post-visit's behavioral intentions and behaviors (Williams & Buswell, 2003). Tourism experience is also an aggregated term that encompasses pre-visit, travel to, destination/on-site visit, travel from, and post-visit (Yuan et al., 2008). Hilgard and Bower (as cited in Pearce, 1982) in 1966 proposed the notion of "generalization phenomenon" or the "carryover effect" in responding to similar or related stimuli by humans. Applying this notion to tourism context, Pearce (1982) showed that tourism experience is not limited to a particular destination and instead, the entire experience has an impact on pre-visit,

on-site visit and post-visit stages. Pearce's work further underlines that tourists tend to build perceptions on tourism destinations that they think, have similar characteristics to destinations they have visited before. Morwitz (1997) suggests consumers with previous experience can make accurate predictions of whether or not to engage in the behavior in the future than consumers with no such experience with the behavior under investigation. Ouellette and Wood (1998)'s meta-analysis of 64 behavioral studies further support the notion that frequency of past behavior affects future behaviors. Analyzing data from four wilderness areas, Williams et al. (1992) observed stronger place and wilderness attachment to be associated with previous visits.

Although literature provide evidence for the relationship between previous visits and future behavioral intentions, less attention has been given on understanding the process of how previous visits interact with other determinants of behavioral intentions to form future behaviors. This literature gap is more apparent in tourism research. As other forms of tourism, ecotourism behavior also involves destination choice, subsequent evaluations and future behavioral intentions. Interrelationships between quality, satisfaction, and behavioral intentions have been studied by numerous travel research scholars (Compton & Love 1995; Baker & Compton, 2000; Tian-Cole et al., 2002).

Being a unique form of tourism, one can assume the antecedents for ecotourism behavioral intentions to vary from other conventional forms of tourism. For instance, hardcore ecotourists are more demanding for experience with wildlife and nature and less demanding for service quality (McKercher, 2001). For those, satisfaction derived from participating in ecotourism activities and wildlife observation is of greater importance than the satisfaction derived from superior service quality. However, quality attributes are more important for causal ecotourists who account for the greater share of ecotourism market.

Review of marketing and tourism literature can lead to confusion over differentiation of the two terms quality and satisfaction. For instance, an individual's reactions to attributes of a vacation destination may imply "satisfaction" in marketing literature, while the same may define "quality" in tourism literature (Compton & Love, 1995). In service marketing, customer is a key component of the service delivery process and the role of customer significantly affects the overall service quality (Zeithaml et al., 2009). In the context of leisure services, past studies have attempted to discriminate quality and satisfaction constructs based on the differences between quality of opportunity and quality of experience (Compton & Love, 1995). The quality of opportunity or performance refers to attributes of a service those are under service supplier's control while quality of experience or satisfaction encompasses attributes that are under control of the visitor (Baker & Crompton, 2000). In other words, satisfaction is a psychological outcome or emotional state of mind a recreationist has after being exposed to a recreation opportunity.

Past studies suggest higher levels of satisfaction and quality lead to increased loyalty, repeated visitations, greater tolerance of price increases, and an enhanced reputation through positive word of mouth communication (Baker & Crompton, 2000; Tian-Cole et al., 2002). The hypothetical model proposed herein examines the intermediary roles of trip quality and satisfaction in determining future behavioral intentions. Here, the term "trip quality" is considered synonymous with quality of performance, and attributes that can be controlled by the ecotourism provider /operator are measured in the perspective of visitor. Performance-construct measures suggested by Tian-Cole et al. (2002) were used to measure trip quality.

In the context of post-consumption evaluations, perceived value is the consumer's overall assessment of the utility of a product/service based on perceptions of what is received and what is given (Zeithaml et al., 2009). In other words, perceived value is the benefits received for the

price paid. Perceived value is strongly related to customer satisfaction, and higher perceived value result in higher customer satisfaction (Bojanic, 1996). However, it is a distinctive concept from quality and satisfaction that generated a growing interest among tourism scholars in the past. Marketing scholars argue that consumer behavior can be better explained through the concept of perceived value (Gallarza & Saura, 2006). Empirical research reveals the existence of positive impact of perceived value on future behavioral intentions and behaviors (Petrick, 2004; Lee, 2007). Petrick et al. (2001) suggested that satisfaction measurement should be used along with perceived value measures. Recent studies emphasize the moderating role of perceived value between service quality and satisfaction (Woodruff, 1997; McDougall & Levesque, 2000; Gallarza & Saura, 2006). An empirical study by Gallarza and Saura (2006) found that quality is an antecedent of perceived value, while McDougall and Levesque (2000) identified service quality and perceived value as the most important drivers of satisfaction. They further recommend incorporating perceived value and quality dimensions to customer satisfaction models. In a recent study on war-related tourism in Korea, Lee et al. (2007) found underlying dimensions of tourist's perceived value have a significant effect on tour satisfaction. Higher levels of satisfaction further influenced tourists to positive communications or destination recommendations to others. Hence trip quality, perceived value and satisfaction all have been shown to be important and valid predictors of future behavioral intentions.

As discussed previously, tourist behavior includes pre-visit decision-making, onsite experience, experience evaluations, and post-visit's behavioral intentions and behaviors. In this study, a model is proposed to examine the relationships among key components at each stage of ecotourism behavior. The attitude-behavior relationship is widely studied and accepted by behavioral and social scientists. According to the multi-component view of attitudes, an attitude

comprise of cognitive, affective and conative components (Ajzen, 1989). Rosenberg and Hovland (as cited in Ajzen, 1989) described these three components to resemble beliefs, feelings and behavioral intentions. The proposed model follows the multi-component view of attitudes. Accordingly, past visits represents cognitive component, trip quality and satisfaction represent affective component while the intention to engage in ecotourism in the future resembles conative component. These model components also reflect the temporal nature of ecotourist experience. The conceptual model is illustrated in Figure 5.2.

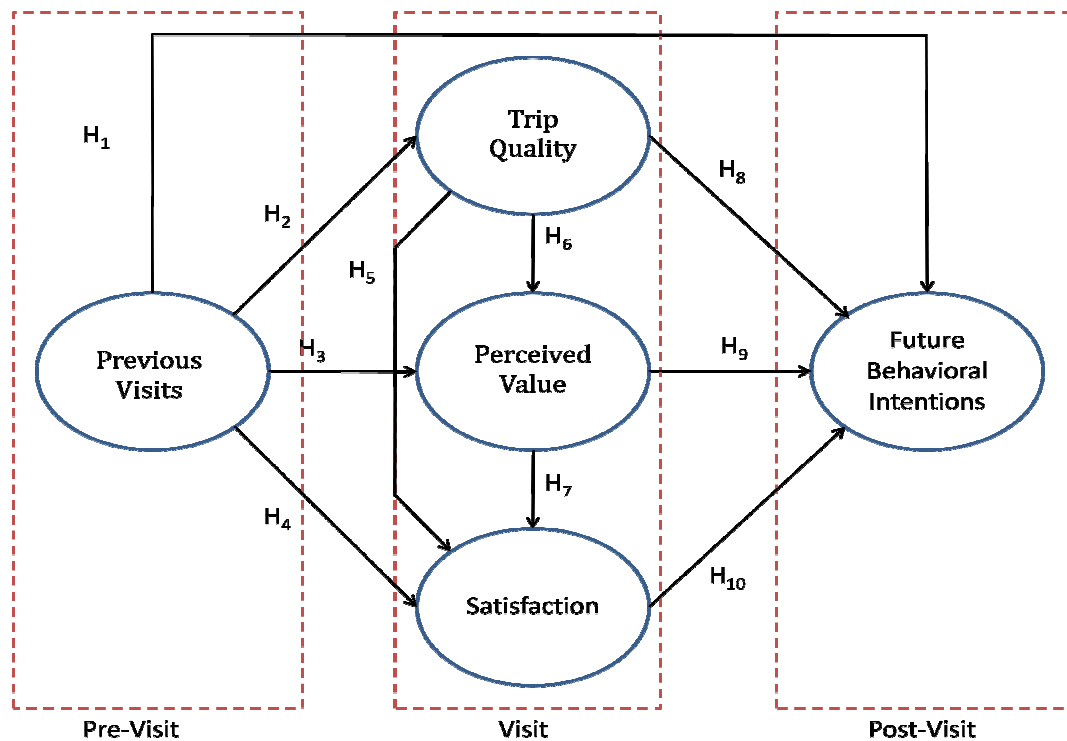


Figure 5.2: The Conceptual Model to Explain the Role of Previous Visits in Determining Future Ecotourism Behavioral Intentions

Alternative hypothesis tested by the hypothesized model are;

H₁: Previous visits directly and positively affect future behavioral intentions

H₂: Previous visits directly and positively affect trip quality

H₃: Previous visits directly and positively affect perceived value

- H₄: Previous visits directly and positively affect satisfaction
- H₅: Trip quality directly and positively affects satisfaction
- H₆: Trip quality directly and positively affects perceived value
- H₇: Perceived value directly and positively affects satisfaction
- H₈: Trip quality directly and positively affects future behavioral intentions
- H₉: Perceived value directly and positively affects future behavioral intentions
- H₁₀: Satisfaction directly and positively affects future behavioral intentions

Using the 10 basic hypothetical relationships as a foundation, possible paths where hypothesized predictors of behavioral intentions combine to influence behavioral intentions can also be tested as hypotheses. Alternative hypotheses for all possible influential paths are listed below.

- H₁₁: Previous visits positively and directly affects trip quality, and indirectly affects future behavioral intentions
- H₁₂: Previous visits positively and directly affects trip quality, and indirectly affects perceived value, satisfaction, and future behavioral intentions
- H₁₃: Previous visits positively and directly affects trip quality, and indirectly affects satisfaction and future behavioral intentions
- H₁₄: Previous visits positively and directly affects perceived value, and indirectly affects future behavioral intentions
- H₁₅: Previous visits positively and directly affect perceived value, and indirectly affect satisfaction and future behavioral intentions
- H₁₆: Previous visits positively and directly affects satisfaction, and indirectly affects future behavioral intentions
- H₁₇: Trip quality positively and directly affects satisfaction and indirectly affects behavioral intention and behavior
- H₁₈: Trip quality positively and directly affects perceived value, and indirectly affects future behavioral intentions

H₁₉: Trip quality positively and directly affects perceived value, and indirectly affects satisfaction and future behavioral intentions

H₂₀: Perceived value positively and directly affects satisfaction, and indirectly affects future behavioral intentions

CHAPTER 6: RESEARCH METHODS

The research tests two models; an ecotourism behavior model in forest-based recreation areas and a model to explain the role of previous visits or experiences with ecotourism in future behavioral intentions. The main means of data collection is a structured questionnaire which was administered via face-to-face interviews with visitors to selected ecotourism destinations in Sri Lanka. Structural equation modeling was employed to develop and test the two models while a combination of multivariate statistical techniques was used in segmenting ecotourists.

6.1 Research Design

Marketing research designs can be broadly categorized into exploratory, descriptive, and causal research designs. Exploratory research provides understanding and insights to the research problem so that an appropriate research approach can be developed. Descriptive research on the other hand is more formal and structured in nature, and aims at describing a characteristic, situation or function under investigation (Kotler & Armstrong, 2006). Survey method is the most common type of descriptive research, and involves a structured questionnaire administered to a group of people to elicit specific information, often on their knowledge, attitudes, preferences, and buying behavior (Malhotra, 2009). Based on the mode of administration, surveys can be telephone, mail, personal, or electronic.

The research design selected for this study is a personal interview survey. The method involves randomly intercepting a respondent and administering the survey via a face-to face interview. As described by Malhotra (2009), this design offers numerous advantages over other survey methods. Personal interviews have high flexibility in data collection, allow high diversity of questions and permit a good control over the data collection environment. In addition, an adequate control/supervision of the field force can be maintained. The design further ensures

speedy data collection and higher response rates. In the context of this study, a personal interview survey design was especially selected since there was a time constraints on data collection, and there was a need for speedy collection of primary data. In addition, tourists were intercepted and interviewed at the exits of selected wilderness parks. This procedure ensures quality firsthand information from respondents who are fresh from the ecotourism experience, and information that are least subjected to “*faulty recall*” i.e. the respondent’s inability to recall information due to time lag (Malhotra, 2009).

Despite these advantages, data collected through personal interview surveys are subjected to several potential biases. Potential for interviewer bias may aggregate when more than one person/field worker is employed. Interviewer bias can account for a large share of the variation in data. This can be due to selection bias, the manner in which the questions are asked and recorded. Selection bias occurs when the distribution of the respondents selected by the interviewers differs from that of the population for the characteristic under investigation, where the variation is far greater to attribute to random variation (Ferber & Wales, 1952). A main impetus for selection bias is the respondent's perception of the interviewer and vice versa, particularly with respect to the gender, age, race, and social class/status (Boyd & Westfall, 1965; Williams, 1968). It is also likely that respondents give socially desirable responses in personal interviews due to high perceived anonymity, influencing response errors (Malhotra, 2009). Previous works have also found evidences for interviewer and response bias to occur when there is a social distance between the interviewer and the respondent (Williams, 1968). In this study, appropriate measures were taken to overcome these potential sources of error, and they are discussed in detail under subsequent sections of this chapter.

6.2 Development of Survey Instrument: Questionnaire Design

A structured questionnaire was the primary research instrument used. A questionnaire presents a series of questions arranged in a specific order, and often attempts to gather information on psychographic, attitudinal, behavioral, and socio-demographic characteristics. Malhotra (2009) underlines the dilemma a researcher has to face in designing a questionnaire; *“The great weakness of questionnaire design is lack of theory. Because there are no scientific principles that guarantee an optimal or ideal questionnaire, questionnaire design is a skill acquired through experience. It is an art rather than science.”*

According to Sanchez (1992), data collected by interviewers can be either negatively or positively affected by the questionnaire design and the interviewer experience fails to compensate for deficits in the design of survey instruments. Therefore, questionnaire design phase was given a special consideration in this research. Measurement and scaling is an important aspect of questionnaire design. In simplest terms, measurement involves assigning numbers or symbols to characteristics according to a pre-determined criterion (Malhotra, 2009). Bagozzi (1994) views the meaning of measurement as both conceptual and empirical i.e. *“measurements achieve meaning in relation to particular theoretical concepts embedded in a large network of concepts, where the entire network is used to achieve an understanding, explanation, prediction or control of a phenomenon”*.

In this study, the questionnaire was designed to address all the research objectives. It predominantly included structured questions. Structured questions provide a set of alternative responses and they can be in the form of multiple choice, dichotomous or scale. They were particularly used to minimize interviewer bias (potential biases due to the manner in which the questions are asked and recording responses). The questionnaire contained appropriate constructs to measure latent variables included in hypothesized models; attitude, subjective norms,

perceived behavioral control, perceived value, satisfaction, behavioral intentions, and behavior. It further measured motivation to engage in ecotourism and actual onsite behavioral characteristics of visitors. Constructs relevant to latent variables as well as motivational and behavioral characteristics were measured using scale questions. They were measured in interval scale. A seven point Likert scale anchored by 1 = strongly agree to 7 = strongly disagree, 1 = very dissatisfied to 7 = very satisfied, and 1 = very low to 7 = very high were employed to measure the respondent's level of agreement with statements those addressed the latent variables and their characteristics. Likert scale questions were particularly used to measure model constructs as recommended by Ajzen (1985), the founder of the TBP, and the manual on TBP published by Francis et al. (2004). Likert scale has the added advantages of ease of construction, administration, as well as ease of understanding for respondents (Malhotra, 2009). Information on demographic and travel characteristics were also collected using fixed response multiple choice and dichotomous questions.

During the process of questionnaire design, effort was taken to make the questionnaire more user-friendly for both the interviewer and the respondent. A main objective was to design the questionnaire in a manner to increase the response rate. To overcome the respondent's unwillingness to answer, it is important to reduce the effort required by the respondent to complete the questionnaire. To achieve this purpose, structured and fixed response questions were predominantly used, and sensitive information such as demographics was placed at the end of the questionnaire. A short introduction which emphasized the importance of the study was given at the beginning to ensure the respondent that information is collected for a legitimate purpose. Given the amount of information required to construct the hypothesized models, it was difficult to reduce the length of the questionnaire. However, as suggested by previous researchers

(Lusk & Norwood, 2005), there is always a tradeoff involved in using a long questionnaire that attempts to collect sufficient information to make reliable statistical conclusions, versus the difficulty of administration.

The questionnaire was pre-tested using a group of 40 individuals visiting a forest based tourism destination in Sri Lanka. The appropriateness of constructs used to measure latent variables included in models were evaluated, and necessary adjustments to the questionnaire were made based on pre-test results as well as on feedbacks from advisory faculty members at Louisiana State University.

6.3 Sampling and Survey Administration

Sri Lanka is classified in to three climatic zones; wet zone, dry zone and intermediate zone. The wet zone includes the southwestern region and part of the central hills. The dry zone covers predominantly, northern, and eastern part of the country. Wet and dry zones are separated by the intermediate zone, which skirts the central hills except in the south and the west. The wet zone is characterized by a high mean annual rainfall over 2,500 mm, spread throughout the year. Mean annual rainfall in the dry zone is less than 1,750 mm. It also includes a distinct drought season from May to September. Most forest based tourism destinations are either located in dry zone or the wet zone. The biodiversity and ecotourism landscape significantly differ between these two climatic zones giving rise to different ecotourism experiences and opportunities. For the purpose of this study, two forest-based recreation destinations from dry and wet zones were chosen as study sites based on the tourism traffic records. This non-probabilistic judgmental sampling technique was adopted to ensure easy access to respondents and fast collection of data. Accordingly, Sinharaja Forest Reserve and Horton Plains National Park were selected from the wet zone, while Yala and Minneriya National Parks were selected from the dry zone.

Precise definition of the target population is critical in selecting a sampling design (Albaum & Smith, 2005). In the context of this study, the target population was defined as people who visit forest based tourism destinations in Sri Lanka. Determining an appropriate sample size was the next task to overcome. Structural equation modeling (SEM) is the primary statistical tool used in model building. In general, SEM requires a large sample to be effective. Inadequate sample sizes affect certain model fit indices used in SEM, and may lead to false conclusions (Fan et al., 1999). According to Kline (2005), sample sizes under 100 elements are “small” while sample sizes greater than 200 elements can be considered as “large” samples for descriptive SEM studies. Breckler (1990) in Kline (2005) provides a more empirical guideline on sample size based on a review of 72 published studies where SEM has been employed. He reports a median sample size of 198 for these studies. As a rule of thumb, some researchers prefer a sample size that is 10 to 20 times as many cases as variables. The two models tested in this study collectively use 50 observed variables. The hypothesized ecotourism behavioral model alone uses 36 observed variables. Allowing a sample size that is 15 times as the number of observed variables, the desired sample size for this study would be 540 individuals visiting forest based tourism destinations in Sri Lanka. Weighing both the above mentioned criteria, a sample in the range of 200 to 540 was considered appropriate and it was decided to aim for the upper limit of 540 visitors.

Not every intercepted individual would agree to participate in the survey nor all of them would be eligible to participate. Therefore it is important to account for the completion rate as well as for the incidence rate, and make adjustments to the final/desired sample size (Malhotra, 2009). Accordingly, the initial sample was determined using the following equation.

$$Initial\ Sample = \frac{Final\ Sample}{Incidence..Rate.X.Completion..Rate}$$

From the pilot study, it was determined that about 68% of the intercepted visitors would agree to participate (completion rate of 0.68). Incidence rate refers to the occurrence of individuals who are eligible to participate in the survey. In this case eligible individuals were the visitors who are over 18 years of age. Pilot study determined the incidence rate as 0.58 or 58 percent. Accordingly, the initial sample required to achieve the desired sample was 1360 visitors.

During the fall of 2009 the questionnaire was administered at four highly visited forest-based tourism destinations in Sri Lanka. A total of 1360 questionnaires were administered with 340 questionnaires at each site. Visitors over 18 years of age were interviewed at the forest recreation area exits while they were leaving. Data were collected during week-ends where highest number of visitors was expected. Since interviewers were employed to intercept respondents, there was a potential for selection bias. To overcome this situation, systematic random sampling technique was adopted. Systematic random sampling involves selecting a random starting point in a sampling frame and choosing every n^{th} element in succession (Albaum & Smith, 2005). Accordingly, interviewers were instructed to intercept every one-in-three visitors comes out from the park exit and administer the questionnaire. Visitors who complied with the request to participate in the survey were interviewed while those who declined to participate were treated as non-respondents.

6.4 Data Analysis Methods

After coding the responses for each question in the questionnaire, data were manually entered into Excel spreadsheets. Before proceeding to analysis, data were cleaned by performing consistency checks and treating for missing responses. Questionnaires which contained only a few missing responses were substituted with mean values for respective questions/variables while incomplete or questionnaires with many missing responses were discarded.

Two statistical software packages were used in data analysis, namely SPSS/PASW Statistics Version 18 and Amos Version 18. PASW Statistics 18 (Predictive Analytics Software), formally known as SPSS (Statistical Package for Social Sciences) is a comprehensive statistical software package for analyzing data. It is designed to analyze data from almost any type of file and produce easily interpretable reports (SPSS, 2009). This software was especially selected because of its user-friendliness and convenience.

In this study, SEM is the primary statistical tool used in building and testing consumer behavior models and Amos 18 was used for this purpose. Amos is powerful and easy-to-use SEM software. In Amos, the researcher can specify, estimate, assess, and present the model in an intuitive path diagram to illustrate hypothesized relationships among variables which enables the researcher to test the model validity in a shorter time period (Arbuckle, 2009). Many SEM experts recommend Amos for beginning structural equation modelers due to its short software learning curve, availability of well-illustrated manuals and the software's capability to produce explicit specification of models (Grace, 2010).

6.4.1 Methodology for Developing Ecotourist Profiles

Profiling of visitors to forest-based recreational sites was based on motivational and behavioral dimensions of visitors. Two main multivariate statistical procedures were used in the process i.e. factor analysis and cluster analysis. Adopting the methodology used by Kerstetter et al. (2004), a factor analysis with principal axis factoring was initially performed on 14 motivational items to explore the underlying motives of tourists who are visiting a forest based ecotourism destination.

Factor analysis is as a multivariate data reduction and summerization technique. Unlike most other statistical techniques, factor analysis does not have adependent variable. Instead,

relationships between a set of independent correlated variables are examined (Johnson & Wichern, 2001). The aim is to discover underlying dimensions or factors that explain the correlation between a set of variables. According to factor analysis model, each observed variable is a linear combination of underlying factors. Similarly, factors can be expressed as a linear combination of observed variables. The amount of variance a variable shares with a factor is called communality. Two types of factor analysis are commonly discussed. **Conformatory factor analysis** tests whether a selected set of variables adequately explains the latent factor. **Exploratory factor analysis** on the other hand tries to identify the latent factors underlying a set of observed variables.

For a factor analysis to be conducted, two criteria must be met i.e. sample adequacy and correlation among observed variables (Malhotra, 2009). In typical SPSS output, significance for Bartlett's test suggest correlations among variables while values over 0.5 for KMO test suggest sampling adequacy. The number of factors to be retained can be determined based on eigen values criterion (factors with eigen values greater than 1), scree plots and apriori knowledge. Once the factors are derived, they are rotated to improve interpretability. Orthogonal and Varimax rotations are the most common forms of rotations. Naming of factors depend on the judgement of researcher. Finally, factor model fit can be assessed by observing the residual matrix which is the difference between observed and reproduced correlation matrices (residuals should be less than 0.05).

Once the underlying motivational factors are derived, respondents are classified into mutually exclusive subgroups based on the derived factors using cluster analysis (Kerstetter et al., 2004). Cluster analysis can be described as an exploratory statistical method which classifies a sample into mutually exclusive and distinguishable subgroups (Garson, 2010). The technique

has been extensively used by tourism and recreational researchers to identify specific tourist segments for target marketing (Loker & Perdue, 1992; Jurowski & Reich, 2000; Williams & Lawson, 2001; Kerstetter et al., 2004; Lee et al., 2006).

In this study, the hierarchical clustering method was used since the researcher did not have a-priori knowledge on the number of tourist segments to be derived, and hierarchical clustering determines how many clusters best suit the given data. The agglomerative hierarchical clustering treats every case in the sample as initial clusters and then it combines two cases at each successive step based on the selected distance measure or highest similarity (Garson, 2010). The appropriate number of clusters is determined by observing icicle plots, dendrograms and agglomeration schedule. Usually, multiple cluster solutions are observed and the best solution is determined based on interpretability, cluster sizes and meaningfulness.

Once the visitor segments were identified, the next step was to examine whether they differ in terms of onsite behavioral characteristics. The ANOVA test with Scheffe's Post-Hoc test was used for this purpose. Finally, an attempt was made to identify visitor segments meaningfully for marketing purposes using their socio-demographic characteristics.

6.4.2 Process for Developing Ecotourism Behavior Model

The empirical models were examined using SEM to test both theoretical relationships in the models and assess overall model fit. SEM is a-priori multivariate statistical technique i.e. the researcher specifies the model based on theory or evidences in order to perform the analysis. Because of this, early literature viewed SEM excessively as a confirmatory method. However, it is now accepted as a blend of exploratory and confirmatory analyses (Kline, 2005). SEM attempts to identify correlations among a given set of variables and explain the variance, hence covariance is the basic statistic in SEM (Schumacker & Lomax, 2004). SEM is capable of

handling endogenous, exogenous or latent variables given as a linear combination of observed variables. Therefore, statistical procedures such as regression, path analysis, variations of factor analysis, canonical correlations and ANOVA are all viewed as special cases of SEM (Golob, 2003). Some authors view SEM as the only statistical technique that permit complete and simultaneous examination of all the hypothesized relationships when it comes to examining complex multidimensional relationships between constructs (Tabachnick & Fidell, 2001).

SEM essentially consists of two steps; validating the measurement model which is accomplished through confirmatory factor analysis, and fitting the structural model using path analysis (Garson, 2009). Schumaker and Lomax (2004) suggest a 5-step process for SEM beginners; model specification, identification, estimation, testing the model fit, and model re-specification. Following this 5-step approach, the hypothesized models were constructed based on literature and existing theoretical framework (see Chapter 4 for discussion). Specified model illustrate hypothesized relationships that exist among latent variables as well as the relationships between observed and latent variables schematically (Figures 6.1). Observed/indicator variables are characteristics those are measured using constructs. Latent variables are hypothetical constructs that cannot be directly measured and they are indirectly measured using one or more observed variables (MacCallum & Austin, 2000). The terms “exogenous” and “endogenous” variables are also associated with SEM. Endogenous variables are variables those are explained by at least one other variable in the model i.e. variables those are used as response variables in at least one equation in the system. An exogenous variable refers to a variable that is not explained by any other variable in the model (McCarter, 2008). A structural equation model can also be described as a system of equations where model parameters corresponding to hypothesized relationships among observed and latent variables are defined by each equation (Kline, 2005). A

response latent variable in one equation may function as an explanatory/input variable in another equation.

Figure 6.1 schematically represent the hypothesized ecotourism behavioral model for forest based recreation destinations. According to SEM conventions, latent variables are represented by ovals while observed variables are represented with rectangles (Arbuckle, 2009). Corresponding questions/items used to measure each latent variable are indicated inside respective rectangles.

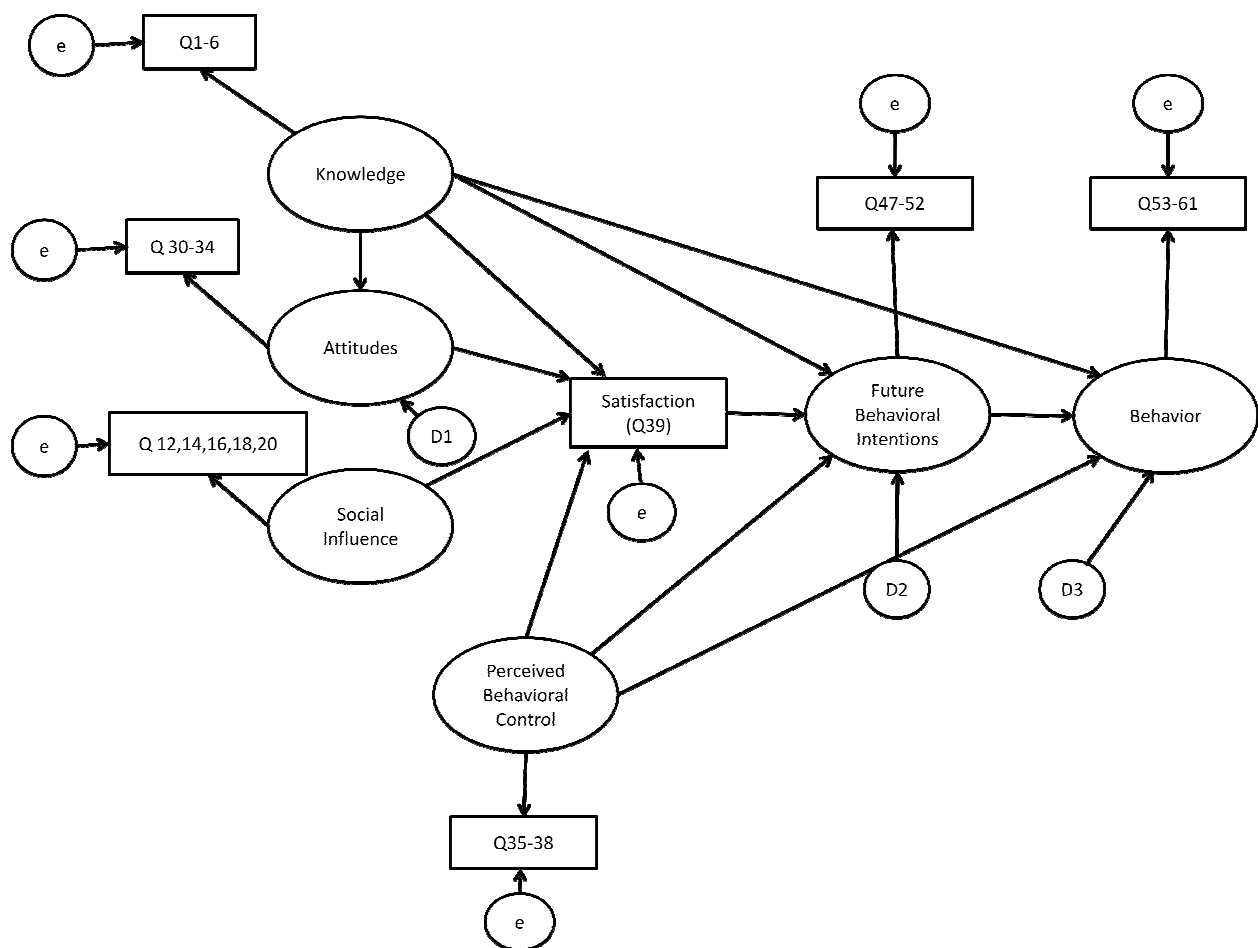


Figure 6.1: The Hypothesized Ecotourism Behavioral Model with Predictive Items

Each single-headed arrow represents a hypothesized causative/direct effect of one variable on another. Double headed arrows indicate assumed correlations or covariance between

variables. Latent variables knowledge, beliefs, social acceptability and control beliefs function as exogenous variables while the remaining latent variables in the model function as endogenous variables.

The encircled “e” symbols in the hypothesized model represent error terms associated with each set of indicator variables. It should be noted here that these “e” symbols are used only for illustration purpose. Error terms are not assumed equal, and an error term is associated with each measured variable. For instance, there are 6 items used to measure the “knowledge” construct and theoretically, an error term is associated with each indicator variable. Accordingly, there are 59 error terms in the entire model for the 59 indicator variables used.

Once the model is specified, the researcher may proceed to the next step; model identification. The primary task in model identification is to estimate a unique set of parameter estimates based on the sample covariance matrix and the model implied population covariance matrix (Schumacker & Lomax, 2004). A parameter in a model must be specified either as a free, fixed or constrained parameter by the researcher (Kline, 2005). A free parameter is an unknown parameter to be estimated by the SEM program using sample data. When a parameter in a model is set to a specified value (often 0 or 1), it is referred to as a fixed parameter. In contrast, a constrained parameter is estimated within certain constraints which are often the relative values of other parameters. Designation of parameters determines the model identification.

Three levels of model identification are described in SEM text i.e. under-identified, just-identified and over-identified models (Schumacker & Lomax, 2004). Under-identified models occur when two or more combinations of parameter values result in the same model and hence, unique parameter estimates do not exist (McCarter, 2008). When all parameters are uniquely determined due to sufficient information in the sample covariance matrix, it is called a just-

identified model. Over-identified models occur when there is more than one way of estimating a parameter. Both just-identified and over-identified models are considered “identified” (Schumacker & Lomax, 2004).

In parameter estimation, it is attempted to obtain a set of parameter estimates that produce the model implied population covariance matrix to be close as possible to the sample covariance matrix (Schumacker & Lomax, 2004). Of many estimation procedures, the maximum likelihood (ML) estimation is of special interest. ML estimation implies that the parameter estimates maximize the likelihood that data were obtained from the target population (Kline, 2005). ML fitting function is associated with differences between model implied and sample covariance matrices. ML estimation assumes multivariate normal distribution of data. Since ML estimation in SEM calculates parameters simultaneously, it is also referred to as a full information method.

As the fourth step, the researcher needs to assess the model fit and measure how well one model performs compared to another. Model fit indices are used to achieve this purpose. Numerous model fit indices are described in SEM literature. Kline (2005) recommends a minimal set of four model fit indexes to be reported and interpreted in any SEM analysis. They include model Chi-square, Steiger-Lind Root Mean Square Error of Approximation (RMSEA) with 90% confidence interval, Bentler Comparative Fit Index (CFI) and Standardized Root Mean square Residual (SRMR).

Model chi-square (χ^2_M) is the most basic fit statistic a researcher needs to look at in assessing the model fit. The statistic measures the difference between the model-implied covariance matrix and the sample covariance matrix (Schumacker & Lomax, 2004). In a just-identified model, the model fits the data perfectly and therefore, χ^2_M equals zero with no degrees

of freedom. Higher χ^2_M values on the other hand indicate badly-fitting models. As a rule of thumb, it is suggested that the chi-square should be less than two times its degrees of freedom (Golob, 2003). However, the sensitivity of χ^2_M to sample size cause potential problems in interpreting this fit index. The power of the statistical test is directly associated with sample size, parameter size and significance level. Therefore, with increasing sample sizes, the χ^2_M is likely to reject the model regardless whether it is true or false (Bagozzi & Yi, 1988).

Given the existence of alternative models with similar explanatory power, the RMSEA index is useful in identifying the simpler model since its formula incorporates a built-in correlation for model complexity (Kline, 2005). In general, models with RMSEA values less than 0.05 are considered good models (Golob, 2003).

The CFI introduced by Bentler in 1990 assumes all latent variables are uncorrelated (i.e. a null or independence model) and compares the sample covariance matrix to the null model (Hooper et al., 2008). This index ranges between 0 and 1 with values greater than 0.90 generally being considered as good fits (Golob, 2003).

The index SRMR measures the standardized difference between the model-implied covariance matrix and the sample covariance matrix. Like in model chi-square index, zero SRMR indicates a perfect fit. This measure is inversely related to sample size and the number of parameters in the model. In general, a value less than .05 for SRMR suggests better model fit where in some cases, values as high as 0.08 are deemed acceptable (Hooper et al., 2008).

If above fit indices are not met, conducting a re-specification search is necessary. Re-specification can be achieved by introducing new parameters to the model or deleting parameters that are not significantly different from 0 (Schumacker & Lomax, 2004). New parameters can be introduced based on the indexes discussed below.

- Modification index (MI): usually the suggestion with highest MI is selected. It gives the expected Chi-square decrease by introducing the suggested modification.
- Expected Parameter Change (EPC): usually the variable with highest EPC is selected. It gives the approximate value of the new parameter.
- Lagrange Multiplier (LM): gives the expected change in Chi-square. Parameters are eliminated by comparing t-statistic for each parameter with a t-table value ($t > 1.96$) for significance or based on Wald W statistic (similar to t-test).

The refined measurement model is tested for its reliability and validity. Reliability is given by simple correlations (r) between latent and observed variables. The R^2 gives the % variance explained by latent factor in observed variable. Internal consistency i.e. how well individual scales perform as a group to measure the underlying factor is given by composite R^2 and Cronbach's alpha ($\alpha > 0.7$). Convergent validity is indicated by higher factor loadings between observed and latent variables. Discriminant validity indicates how different two latent variables are; hence correlations between factors are desired.

Fit indices for re-specified models are used to assess the degree of improvement in the model after re-specification. Conclusions are derived upon parameter significance tests for regression/path coefficients. In addition, squared multiple correlations are useful in determining the percent variance of a dependent variable explained by its respective determinant variables.

6.4.3 Process for Modeling the Role of Previous Visits on Future Behavioral Intentions

The methodological procedure for modeling the role of previous visits on future behavioral intentions also utilized SEM. The statistical procedures are similar to the one described under preceding section. Figure 6.2 schematically represent the hypothesized SEM model to illustrate the effect of previous visits on future behavioral intentions. According to

SEM conventions, latent variables are represented by ovals while observed variables are represented with rectangles (Arbuckle, 2009). Corresponding questions/items used to measure each latent variable are indicated inside respective rectangles.

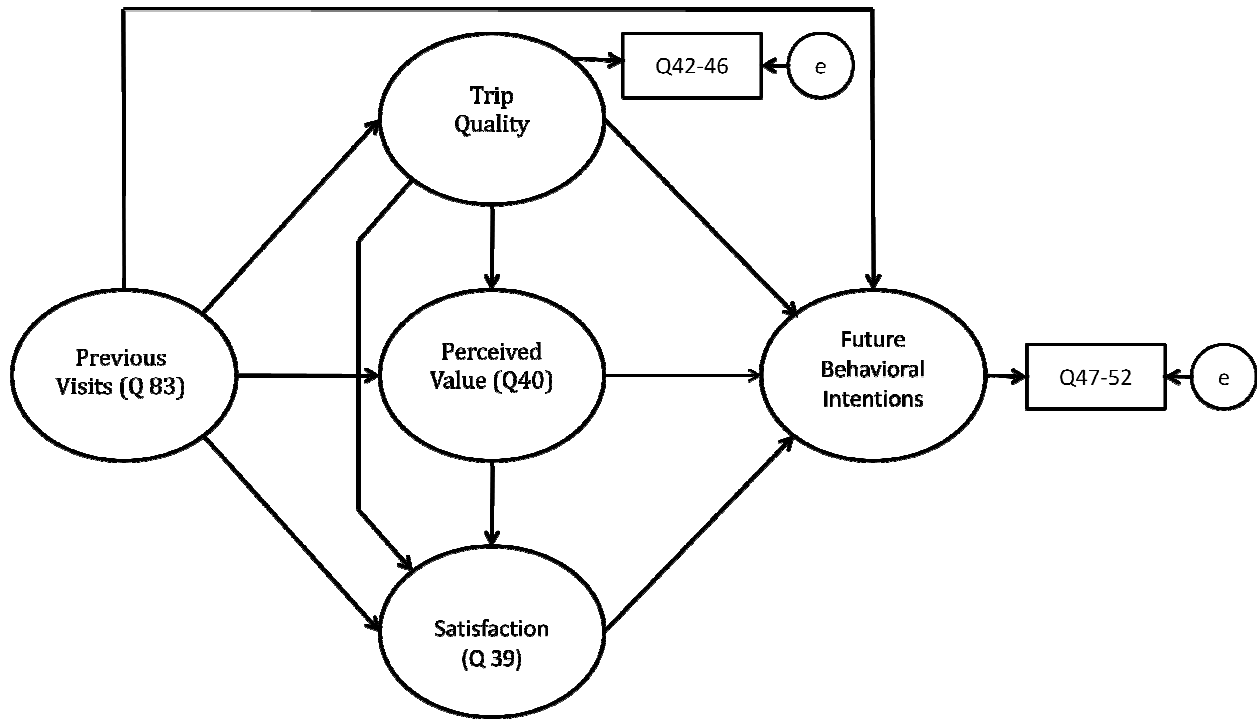


Figure 6.2: The Hypothesized Model to Explain the Role of Previous Visits on Future Behavioral Intentions with Predictive Items

CHAPTER 7: DEVELOPING MOTIVATIONAL AND BEHAVIORAL PROFILES OF VISITORS TO FOREST-BASED RECREATIONAL DESTINATIONS IN SRI LANKA

This first objective of the study was to identify distinct tourist segments who are visiting forest based recreational sites in Sri Lanka. Effective and meaningful segmentation of tourist markets helps the industry to better fulfill the needs and wants of different tourist groups, and come up with efficient target marketing strategies to attract more visitors. In this study, all individuals who are visiting forest-based recreational sites were initially considered as ecotourists (according to the “types of sites visited” criterion), and were interviewed. Then an attempt was made to distinguish true ecotourists from other type of visitors by developing motivational and behavioral profiles of visitors. Accordingly, the analysis identified four types of visitor segments. This chapter describes the results of developing motivational and behavioral profiles of visitors in detail, and discusses the practical implications of market segmenting.

7.1 General Respondent Profile

A total of 547 individuals participated in the survey and accordingly, there were 525 valid or usable questionnaires. This includes 498 domestic visitors and 27 foreign visitors. Invalid, inaccurate, and unreliable responses were discarded. General respondent socio-demographic characteristics are summarized in Table 7.1. Approximately 68 % of the respondents were male while about 32% were female. Most of the individuals who participated in this study were in the age group of 18 to 25 years (46.4%). Approximately 73% of the respondents had an education of high school or below while about 27% of the respondents had bachelors or higher degree. Majority (70.6%) of the respondents were unmarried. The average monthly income for domestic visitor respondents was US\$ 277, while the figure for foreign visitors was US\$ 6625.

Table 7.1: General Respondent Socio-demographic Profile

Socio-demographic variable	Frequency	Percentage
Gender (n=513)		
Male	351	68.4
Female	162	31.6
Age (n=507)		
18 - 25 years	235	46.4
26 – 35 years	169	33.3
36 – 45 years	73	14.4
46 or older	30	5.9
Education (n=506)		
Secondary School	52	10.3
High-school	315	62.3
Bachelor's degree	103	20.3
Graduate degree	36	7.1
Marital status (n=503)		
Married	147	29.2
Unmarried	356	70.6
Individual monthly income (n=263)		Mean (US\$)*
Local visitors (n=247)		277
Foreign visitors (n=16)		6625

*Based on the currency conversion rates as of 05-01-2010

7.2 Motives of Visiting Forest-based Recreational Sites

Identifying respondent's underlying motives of visiting a forest based ecotourism destination was one of the main aspects of this study. A set of 14 motivation items were used with a 7 point Likert scale where 1= strongly disagree and 7 = strongly agree. In this scale, mid-point 4 indicated the neutral point i.e. neither disagrees nor agrees. Based on the mean scores for motivational items, “to be in a natural setting” was the primary motivation for most visitors to visit a forest-based ecotourism destination, followed by “to spend time with family/friends”, and “to spend my free time” (Table 7.2).

Table 7.2: Means and Standard Deviations for Motivational Items

Motivational Item	N	Mean	Std. Deviation
To be in a natural setting	524	4.80	2.257
Appreciate the ecological landscape	525	3.58	2.348
To spend time with family/friends	525	4.52	2.605
Improve my physical health	524	2.10	1.770
To spend my free time	525	3.64	2.581
To learn something new	524	2.78	2.302
To be away from the crowd	525	2.64	2.446
To memorize a past experience	525	1.52	1.351
To educate children	525	1.62	1.635
To be with others who enjoy the same	525	1.66	1.598
Self ego	525	2.35	2.186
To have an adventurous experience	525	2.44	2.427
To conduct a research/survey	525	1.50	1.564
Following others/pursue the fashion	525	1.61	1.560

Adopting the methodology used by Kerstetter et al. (2004), a factor analysis with principal axis factoring was performed on the 14 motivational items to explore underlying motives of visiting a forest based ecotourism destination. The Kaiser-Meyer-Olkin test statistic of 0.68 suggested the sampling adequacy to perform a factor analysis while significance ($p=0.001$) in Bartlett's test of sphericity indicated that motivational items measured are correlated. Five factors were retained from principal axis factoring based on Eigenvalues (equal or greater than 1) and, by observing the scree-plot. Both techniques suggested retaining five factors. The 5 derived factors accounted for 58.68% of the total variance (Table 7.3).

Table 7.3: Total Explained Variances for Five Factors

Factor	Eigenvalue	Variance explained (%)	Cumulative variance (%)
1	2.678	19.132	19.132
2	1.899	13.567	32.699
3	1.371	9.793	42.491
4	1.173	8.379	50.870
5	1.094	7.813	58.683

Accordingly, 5 factors/dimensions were named “nature”, “company”, “adventure”, “education”, and “esteem” respectively. Factor loadings from each motivational item on 5 factors are given in Table 7.4. For instance, the first derived factor has higher loadings from motivation items “Appreciate the ecological landscape”, “To be in a natural setting”, and “To be away from the crowd” and therefore, the dimension was named as “nature”.

Table 7.4: Extracted Motivational Factors

Motivational Item	Factors				
	Nature	Company	Adventure	Education	Esteem
Appreciate the ecological landscape	.779	-.027	-.011	.132	.193
To be in a natural setting	.772	.071	.190	-.185	-.089
To be away from the crowd	.472	.285	-.213	.136	.318
To spend time with family/friends	-.052	.703	.171	-.341	-.041
To spend my free time	.029	.668	.165	-.042	.062
To educate children	.253	.550	-.141	.469	.211
To have an adventurous experience	.051	.068	.821	.029	-.125
Improve my physical health	.264	.381	.661	.173	-.008
Following others/pursue the fashion	-.091	.005	.531	-.156	.278
To conduct a research/survey	-.149	-.078	-.032	.835	.000
To learn something new	.420	-.177	.158	.568	.087
To be with others who enjoy the same	.013	-.173	.135	-.064	.770
To memorize a past experience	.153	.159	-.004	.062	.614
Self ego	.056	.360	-.133	.297	.509

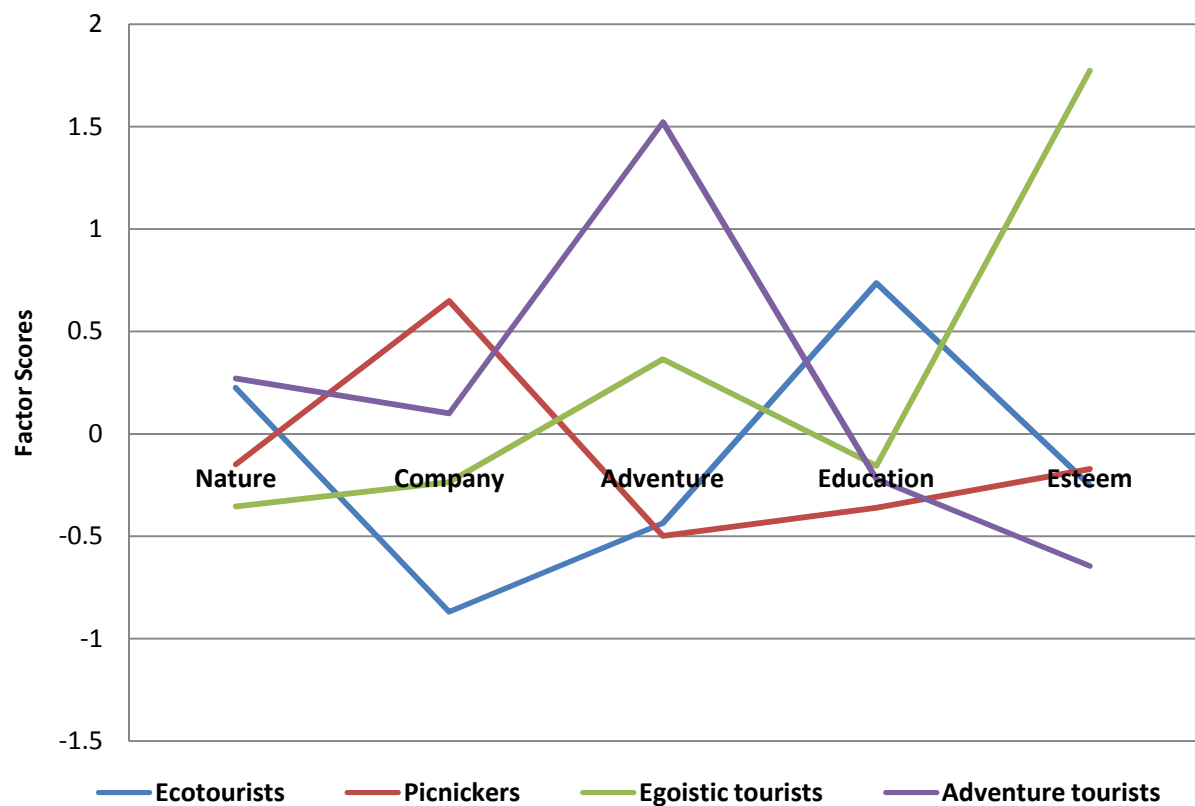
Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization.

In order to identify distinct respondent groups based on five derived factors, a cluster analysis was performed using factor scores. Ward’s hierarchical clustering technique was employed to identify the appropriate number of clusters. Cluster analysis results suggested 4 clusters as the most appropriate number of clusters. Clusters were named based on mean factor scores of each cluster. Accordingly, the four clusters or visitor segments were labeled as “Ecotourists”, “Picnickers”, “Egoistic tourists” and “Adventure tourists”. Cluster summaries and mean factor scores are described in Table 7.5. Most respondents (40 %) fell in to picnickers segment, followed by ecotourists and adventure tourists segments.

Table 7.5: Cluster Summaries and Mean Factor Scores

Visitor Segment	Nature	Company	Adventure	Education	Esteem	Segment Membership
Ecotourists	0.226	-0.868	-0.435	0.736	-0.251	147 (28.0%)
Picnickers	-0.151	0.648	-0.499	-0.361	-0.172	210 (40.0%)
Egoistic tourists	-0.355	-0.237	0.364	-0.157	1.773	75 (14.3%)
Adventure tourists	0.271	0.101	1.522	-0.220	-0.645	93 (17.7%)

As illustrated in Figure 7.1, the visitor segment “Ecotourists” scored highest on the dimensions of “nature” and “education”. These two dimensions are critical components in defining ecotourism and ecotourists. In contrast, “Picnickers” scored higher only on the dimension “company”. A high positive mean score for the motivational dimension “esteem” was associated with “Egoistic tourists”. Adventure tourists on the other hand scored highest on the motivational dimension of “adventure”, followed by “nature” and “company”.

**Figure 7.1:** Variation of Mean Scores of Motivation Dimensions across the Four Tourist Segments

These motivational differences among visitor segments are further analyzed by ANOVA and Scheffe Post-Hoc comparisons (Table 7.6). ANOVA results suggest that five motivational dimensions significantly differ among visitor segments. Scheffe Post-Hoc comparisons further explain where the motivational differences lie. In Table 7.6, mean values with different superscripts indicate significant differences among visitor segments. For example, the segment Ecotourists (mean value with superscript a) differed significantly from Picnickers and Egoistic tourists (mean value with superscripts b), but did not significantly differ from Adventure tourists (mean value with superscript a) on the motivational dimension “nature”. Visitor segments Picnickers and Egoistic tourists did not significantly differ from each other in terms of the motivational dimension “nature”.

Table 7.6: ANOVA and Scheffe’s Post-Hoc Comparisons of Motivational Dimensions between Tourists Segments

	Ecotourists (n=147)	Picnickers (n=210)	Egoistic tourists (n=75)	Adventure tourists (n=93)	F-ratio	P value
Nature	0.226 ^a	-0.151 ^b	-0.355 ^b	0.271 ^a	10.04	0.00
Company	-0.868 ^a	0.648 ^b	-0.237 ^c	0.101 ^c	110.84	0.00
Adventure	-0.435 ^a	-0.499 ^a	0.364 ^b	1.522 ^c	243.03	0.00
Education	0.736 ^a	-0.361 ^b	-0.157 ^b	-0.220 ^b	47.94	0.00
Esteem	-0.251 ^a	-0.172 ^a	1.773 ^b	-0.645 ^c	215.19	0.00

Items with different superscripts indicate significant differences. (e.g. Ecotourists (superscript a) differed significantly from Picnickers and Egoistic tourists (superscripts b), but do not significantly differ from Adventure tourists (superscript a) in the motivational dimension “Nature”.

7.3 On-site Behavioral Characteristics of Visitors

Once the visitor segments were identified, the next step was to examine whether they differ in terms of onsite behavioral characteristics. Respondent highest mean score was observed for the behavioral statement “I did not disturb or feed wildlife” while respondents’ least agreement was with the statement “I support the local community by spending money at local stores” (Table 7.7).

Table 7.7: Mean Scores and Standard Deviations for Behavioral Variables

Behavioral variable	N	Mean	Std. Deviation
Followed the instructions provided before the tour	516	5.22	1.367
Observed nature and wildlife thoroughly	514	4.53	1.935
Stayed at an eco-lodge	344	3.99	2.466
Listen and paid attention to the interpretation	511	4.55	1.866
Wore clothes that were appropriate for a forest ecosystem	511	4.04	1.924
Did not disturb or feed wildlife	513	5.95	1.085
Did not damage plants	515	5.69	1.323
Helped to maintain the local environmental quality	515	5.69	1.271
Support the local community by spending money at local stores	509	3.88	2.050

When compared the mean responses for behavioral items among visitor segments, the segment ecotourists had the highest mean scores for all the behavioral items, showing the most desired environmentally responsible on-site behavior (Table 7.8). This segment was closely followed by Egoistic tourists. Mean scores suggest that both picnickers and adventure tourists paid less attention to instructions provided onsite before tours, observing nature and wildlife, and wearing appropriate clothes for a forest. Furthermore, they are less likely to seek accommodation in eco-lodges and spending money at local shops.

The ANOVA results on behavioral items suggested that all the behavioral items differ significantly among four visitor segments (Table 7.8). The Scheffe's Post-Hoc test was used to further analyze these differences. The visitor segment "Ecotourists" significantly differed from other forms of tourists in terms of their responses to statements "Followed the instructions provided before the tour", "Observed nature and wildlife thoroughly", "Did not disturb or feed wildlife", "Did not damage plans", and "Helped to maintain the local environmental quality", demonstrating their environmentally responsible behavior. Picnickers and Adventure tourists did not significantly differ from each other in terms on on-site behavioral characteristics.

Table 7.8: Comparison of Mean Scores for Behavioral Items among Visitor Segments

Behavioral variable	Eco tourists	Picnickers	Egoistic tourists	Adventure tourists	F-ratio	Significance level
Followed the instructions provided before the tour	6.33 ^a	4.62 ^b	5.73 ^c	4.45 ^b	87.39	0.00
Observed nature and wildlife thoroughly	5.94 ^a	3.81 ^b	5.36 ^c	3.37 ^b	70.18	0.00
Stayed at an eco-lodge	4.68 ^a	3.33 ^b	4.65 ^a	3.06 ^b	10.6	0.00
Listen and paid attention to the interpretation	5.60 ^a	3.90 ^b	5.36 ^a	3.80 ^b	39.7	0.00
Wore clothes that were appropriate for a forest ecosystem	5.11 ^a	3.33 ^b	4.71 ^a	3.47 ^b	35.34	0.00
Did not disturb or feed wildlife	6.59 ^a	5.62 ^b	6.08 ^c	5.63 ^b	30.27	0.00
Did not damage plants	6.65 ^a	5.18 ^b	6.16 ^c	4.96 ^b	65.74	0.00
Helped to maintain the local environmental quality	6.59 ^a	5.23 ^b	6.18 ^c	4.97 ^b	62.67	0.00
Support the local community by spending money at local stores	4.51 ^a	3.50 ^b	4.31 ^a	3.43 ^b	9.63	0.00

Items with different superscripts indicate significant differences. (e.g. Ecotourists (superscript a) differed significantly from Picnickers, Adventure tourists (superscripts b), and Egoistic tourists (superscript c) in terms of their mean response to the statement “Followed the instructions provided before the tour “. However, Picnickers and Adventure tourists did not significantly differ from each other.

7.4 Socio-demographic Profiles of Visitor Segments

To identify the four visitor segments meaningfully for marketing purposes, their socio-demographic characteristics were analyzed. Socio-demographic profiles developed for visitor segments are summarized in Table 7.9. The segment “Ecotourists” had a relatively even distribution of gender in comparison to other visitor segments where males clearly dominated. About 27% of the ecotourists were 36 years or older while nearly 39% were young adults who are 18 to 25 years old. Ecotourists are characterized by their higher education level with over 42% having bachelor's or graduate degree. As a distinct tourist segment, nearly 90% of ecotourists had an education of high school or above. The individual monthly income for local ecotourists was US\$ 258.8. However, the same figure for foreign ecotourists was US\$ 6531 where the segment included more than half of the foreign visitors interviewed ($n=20$).

Table 7.9: Socio-demographic Profiles of Visitor Segments

Socio-demographic variable	Ecotourists (n=147)	Picnickers (n=210)	Egoistic tourists (n=75)	Adventure tourists (n=93)
Gender				
Male	84 (57.5%)	145 (71.4%)	56 (77.8%)	66 (71.7%)
Female	62 (42.5%)	58 (28.6%)	16 (22.2%)	26 (28.3%)
Age				
18 - 25 years	56 (38.9%)	81 (39.7%)	29 (40.8%)	69 (78.4%)
26 – 35 years	45 (31.3%)	84 (41.2%)	25 (35.2%)	15 (17.0%)
36 – 45 years	31 (21.5%)	31 (15.2%)	9 (12.7%)	2 (2.3%)
46 or older	12 (8.3%)	8 (3.9%)	8 (11.3%)	2 (2.3%)
Education				
Secondary School	15 (10.4%)	26 (12.7%)	8 (11.4%)	3 (3.4%)
High-school	68 (47.2%)	133 (65.2%)	42 (60.0%)	72 (81.8%)
Bachelor's degree	39 (27.1%)	38 (18.6%)	17 (24.3%)	9 (10.2%)
Graduate degree	22 (15.3%)	7 (3.4%)	3 (4.3%)	4 (4.5%)
Marital status				
Married	63 (43.8%)	51 (25.8%)	26 (37.1%)	7 (7.7%)
Unmarried	81 (56.2%)	147 (74.2%)	44 (62.9%)	84 (92.3%)
Individual monthly income (US\$)				
Local visitors	258.88	316.75	324.95	208.59

Further analysis of local ecotourists indicated the existence of two sub-segments where individuals aged 18 to 35 forms a low-income ecotourists segment with mean individual monthly income of US\$ 236.16 ($n=46$), and individuals aged 36 and above forms a relatively high-income ecotourists segment with mean individual monthly income of US\$ 294.92 ($n=29$). The low-income ecotourists segment is dominated by young adults (18 to 25 age group) with no or low income who are still perusing undergraduate education or having just finished high school. The two ecotourist segments differed significantly in terms of their mean individual monthly income at 0.05 significance level ($p=0.038$). Approximately 91.7% of the ecotourists have participated in ecotourism before and, on average an individual in this segment has previously visited about 4 ecotourism destinations in Sri Lanka. Nearly 82% of the individuals in ecotourists

segment admitted that they engage in ecotourism at least twice a year. However, most of them (51.8%) were on one-day visits to the respective destination while the rest were on two or more day trips (Table 7.10). Nearly 83% of the ecotourists spent Sri Lankan Rupees 3000 (approximately US\$ 27) or less while participating in ecotourism.

Table 7.10: Cluster Profile Attributes Important for Marketers – The Trip Characteristics (Percent of Respondents)

	Ecotourists	Picnickers	Egoistic tourists	Adventure tourists
Visit Duration				
1 Days	51.8	61.7	62.5	92.4
2 Days	30.5	26.7	25	5.4
3 Days	7.8	10.7	6.9	0
More than 3 days	9.9	1	0.1	2.2
Destination Expenses				
10 US\$ or less	48.6	55.1	54.3	83.5
11-30 US\$	34	19	28.6	9.9
31-50 US\$	9	16.1	12.9	2.2
More than 50 US\$	8.3	9.8	4.3	4.4
Frequency of visiting forest-based attractions				
Less than once/year	18.1	19.9	13.8	5.7
Once/year	37	66.7	50	83.9
Twice/year	18.9	8.1	10.3	4.6
More than twice/year	26	5.4	25.9	5.7

The segment “Picnickers” was dominated by males. Nearly 81% of the picnickers were 35 years or below in age and about 78% of the individuals had an education level of high school or below. The individual monthly income for local picnickers was US\$ 316.75 which was the second highest income of the four segments. Approximately 62.4% of the respondents in picnickers segment have participated in ecotourism before. On average, an individual in this segment has previously visited about 2 ecotourism destinations in Sri Lanka. About 91% of the respondents in picnickers segment stated that they visit forest-based tourism destinations at least twice a year (Table 7.10). Nearly 62% of the picnickers were on one-day visits to the respective

destination and 26% of the respondents in picnickers segment spent over US\$ 27 while visiting the destination (Table 7.10).

Similar to other tourists segments, the group “Egoistic tourists” was also dominated by males and individuals who were under 36 years old. Slightly over 71% of the individuals in this segment had an education level of high school or below. This segment had the highest mean individual monthly income with approximately US\$ 325 for local visitors. Approximately 76% of the respondents in Egoistic tourists segment have participated in ecotourism before. On average, an individual in this segment has previously visited about 2 ecotourism destinations in Sri Lanka. About 64% of the egoistic tourists visit forest-based tourism destinations at least twice a year. Most of them (62.5%) were making one-day visits to the destination. However, this segment is the highest spending group with nearly 56% of the respondents in the segment spending over US\$ 27 while visiting the destination (Table 7.10).

The segment “Adventure tourists” consists of predominantly young adult males. Over 90% of members in the segment were unmarried. Only about 5% of the respondents in this segment were over 35 years old. Nearly 82% of the individuals in this segment had continued their education up to high school. This segment had the lowest mean individual monthly income. Over 88% of the adventure tourists have visited a forest-based recreation site before. On average, an individual in this segment has previously visited about 2 ecotourism destinations in Sri Lanka. When asked about their frequency of visiting ecotourism destinations, about 88% stated that they visit forest-based tourism destinations at least twice a year. Majority in this segment (92.4%) were on one-day visits to the destination (Table 7.10). Approximately 83.5% of the respondents in adventure tourists segment spent less than 1000 Sri Lankan Rupees (about US\$ 9) for their trip (Table 7.10).

7.5 Discussion

As discussed in previous chapters, three basic criteria have been used by tourism scholars to define ecotourists i.e. type of sites visited, on-site activities, and motivation for travel (Lee, 2007). In this study the initial sample was obtained by treating all individuals who are visiting forest-based destinations as ecotourists. However, many authors oppose the view of applying the “ecotourist” label to individuals solely based on the type of sites visited by them or on-site activities they participate while visiting the destination (Tao et al., 2004; Kerstetter et al., 2004). Buttressing this view, results of this study identified different types of tourists who are visiting forest-based recreational destinations in Sri Lanka, based on their behavioral and motivational characteristics. Results further indicated that only a distinct segment of tourists with specific motivational and behavioral characteristics can be called or defined as ecotourists.

The scope of this part of the research was to segment travelers who are visiting forest-based recreational sites in Sri Lanka, based on motivational and behavioral grounds. A person’s environmental attitudes and motivations have been found as key elements in defining ecotourist (Tao et al., 2004; Kerstetter et al., 2004). More holistic definitions and descriptions of ecotourists underline learning, experiencing and appreciating nature as primary motives of participating in ecotourism (Eagles & Cascagnette, 1995; Weaver, 2001; Fennell, 2004). With respect to visitors to forest-based attractions in Sri Lanka, results of this study identified “to be in a natural setting”, “to spend time with family or friends”, “to spend free time”, and “appreciate the ecological landscape” as primary motives of travelling to a forest-based attraction. Although first and fourth motivations are fully within the scope of ecotourism definitions, motivations those were ranked second and third seem to be incompatible. This suggests that an individual’s motivation to travel to a forest-based attraction tend to vary considerably and not all visitors can be fit into the frame of “ecotourist” just because they happened to visit a nature-based attraction. Results further

indicate that a significant number of individuals visiting forest-based attractions in Sri Lanka do not fall within the boundaries of ecotourist based on their motivations for travelling. Hence, attempting to define ecotourists based on type of sites they visit can lead to erroneous conclusions.

The factor analysis on motivation items derived five underlying motivational factors for visiting forest-based attractions. These were identified as nature, company, adventure, education and esteem. The factor “nature” was highly loaded with motivational items “appreciating the ecological landscape” and “to be in a natural setting” while the factor “education” was loaded with “conducting research” and “to learn something new”. Therefore, factors nature and education represent genuine ecotourist motivations. The cluster analysis results further support this argument by categorizing individuals with above mentioned underlying motivations into a single cluster named “ecotourists”. This is the second largest visitor segment which accounted for 28% of the sample.

Another interesting finding is that there’s an increasing trend among individuals, especially among domestic travelers to use visiting a forest-based attraction as an opportunity to spend time with their families or friends. These individuals represented the largest visitor segment identified as “picnickers” which accounted for 40% of the sample. However, whether these individuals behave in an environmentally friendly manner is questionable. Factor and cluster analysis further revealed that some individuals visit forest-based attractions to have an adventurous experience. The factor “adventure” was also associated with “improving physical health”. Hence, study results hints about a trend where individuals, especially domestic travelers visiting forest-based attractions in pursuit of improving physical health. For some individuals, it was emotional reasons or what Maslow describes as self actualization needs in the “hierarchy of

needs pyramid” that motivated them to visit a forest-based destination. The visitor segment identified as “egoistic tourists” represent these motives. In a broad spectrum, visitor segments identified as picnickers, adventure seekers, and egoists can be described as “soft ecotourists” since they share one or more behavioral and motivational characteristics of soft ecotourists as described in Weaver (2001).

Kellert (1985) argued that a person’s attitudes towards nature tend to correlate with their actions or behaviors. Using a self-definition approach, Tao et al. (2004) found environmentally responsible attitudes and behaviors as the two main reasons for considering oneself to be an ecotourist. Hence it is vital to examine one’s actual behavior in contrasting ecotourists from other types of tourists. In this study, comparisons were made among tourist types/visitor segments to determine how they differ from each other in terms of actual onsite behavior. As expected, ecotourists showed the most desired environmentally responsible behavior while visiting the attraction. Although egoistic tourists visited forest-based attractions mainly for self-centered reasons, they also exhibited a highly acceptable on-site behavior with an intellectual curiosity about the natural environment and wildlife. Picnickers and adventure tourists on the other hand refrained from physically disturbing the natural environment to a large extent, but had little intellectual curiosity about the flora, fauna and the ecosystem they were visiting. These visitor segments further showed the least interest in admiring the natural environment.

Identification of visitor segments to forest-based recreational sites has numerous managerial and policy implications. It provides valuable information for park management to tailor their ecotourism products to different visitor types while allowing policy makers to introduce necessary measures to develop ecotourism sector of the country. Study results suggest ecotourists visiting forest-based attractions in Sri Lanka share many similarities with North

American and European ecotourists, such as having positive attitudes towards environment and conservation, motivation to learn and appreciate nature, and intellectual interest about flora, fauna and the ecosystem they are visiting. However, there are noticeable demographic differences exist. Although Weaver (2001) documents the trend of more females participating in ecotourism particularly in western countries, males seem to dominate the Sri Lankan ecotourism market. Studies in North America and Europe describe ecotourists as middle aged, relatively high incomes and highly educated individuals (Kellert, 1985; Ballantine & Eagles, 1994; Weaver, 2001; Fennell, 2004). In contrast ecotourists in Sri Lanka appear to be relatively young and well educated, but having comparatively low incomes than other visitor segments. A typical individual in the ecotourists segment represents a recent high-school or university graduate, or a university student, and this can be attributed to the well-educated but low income nature of the visitor segment. This may also indicate the growing interest on environment among the well-educated young generation, and their tendency to laud ecotourism as an outdoor activity that entails both the passion for nature and learning. It can be seen as a positive for the ecotourism industry as these individuals are likely to have better employment opportunities with their higher education levels.

Further analysis on ecotourism segment revealed the existence of middle aged high income sub-segment that is comparable to Western ecotourists. Although this is the ideal ecotourist segment to target from the environmental conservation and business perspectives, the smaller size of the segment raises questions over the economic sustainability of ecotourism operations. In addition, the fact that ecotourists as a segment placing relatively less importance on supporting local initiatives raises further concerns for policy makers, and calls for better planning to incorporate local communities in ecotourism development projects.

The visitor segment identified as “egoistic tourists” showed more or less similar on-site behaviors to ecotourists. The segment is dominated by males with high income levels with nearly 29% of individuals in the segment having Bachelor's degree or higher. Although they visit forest-based attractions for self-centered motives, they seem to be knowledgeable about the environment, and are likely to comply with park policies and follow instructions while they are at the destination. Hence this seems to be the ideal market segment to target from both environmental sustainability and business perspectives. Furthermore, this segment is the highest spending group with nearly 56% of the respondents in the segment spending over US\$ 27 while visiting the destination. For recreational managers and ecotourism operators, this creates new prospects for revenue generation by identifying the activities the “egoistic tourists” are interested in and providing those recreational opportunities. Meanwhile, enhanced interpretation, information delivery, and education would help these visitors to build positive environmental attitudes and enthusiasm.

The largest visitor segment “picnickers” predominantly represents young to middle aged individuals with average education levels. Although they have comparatively higher incomes, they are less interested in supporting local initiatives by spending money on-site. These individuals visit forest-based attractions just to have a different experience, and their motivations for visiting are strongly related to be with their families or friends. Adventure tourists on the other hand, are predominantly young adult males who visit forest-based attractions seeking an adventurous experience. Visitor segments picnickers and adventure tourists collectively represent nearly 58% of the respondents. Both these visitor segments consist of individuals who are exhibiting least environmentally desired behaviors. In addition, these visitors placing relatively less importance on supporting local initiatives raises further concerns for policy makers and

ecotourism operators as it ignores a key principle of ecotourism. A possible ramification of this would be an increased revenue leakage due to non-local participation and losing the support of local communities (Weaver, 2001). Exposing sensitive ecosystems to these types of visitors can further result in increased stress on ecosystems and environmentally unsustainable ecotourism practices. Since it is impossible to prevent such visitors entering to ecotourism destinations, it is essential to have strong visitor policies and monitoring mechanisms in place. In addition to these short term measures, the challenge in the long run would be to how to change the attitudes and behaviors of these types of visitors. This calls for better strategies to educate tourists about their environmental responsibilities and possible consequences of disturbing valuable ecosystems.

CHAPTER 8: UNDERSTANDING THE ECOTOURISM BEHAVIOR

The second objective of the study was to develop a model to explain the ecotourism behavioral of individuals who visit forest-based recreational attractions in Sri Lanka.

Understanding recreational behavior helps recreational managers to predict and influence the recreational participation. In the context of ecotourism, it further helps ecotourism operators to better cater their target market to optimize the tour experience, revenue generation, as well as to educate their customers on environment. This section of the study describes the procedures and results of developing and testing an ecotourism behavior model and discusses its implications. Structural equation modeling was used to build and test the hypothesized ecotourism behavior model.

8.1 Data Preparation for Structural Equation Modeling

A total of 547 individuals participated in the survey. After discarding invalid, incomplete, inaccurate, and unreliable responses, there were 525 valid or usable questionnaires. Structural equation modeling (SEM) requires adjustments for missing values and assumes multivariate normality, linear relationships among variables, absence of multi-collinearity, and outliers in data. Hence usable questionnaires were further screened for missing values, outliers, linearity, and normality.

8.1.1 Missing Data

As most other statistical techniques, SEM is also affected by missing values. Amos 18 software used for SEM does not impute or replace values for missing data. Therefore it was necessary to treat the data for missing values. Schumacker and Lomax (2004) describe list-wise or pair-wise deletion, mean substitution, regression imputation, and matching response patterns as options for dealing with missing values. Mean substitution is recommended if the percentage

of missing values for a variable is less than 10 percent (Donner 1982 in Roth, 1994). Hence missing values were substituted with the mean of respective variable.

8.1.2 Outliers

Outliers are observations those lie outside the overall pattern of data distribution. Outliers or influential points can affect means, standard deviations and correlation coefficients and therefore need to be treated (Schumacker & Lomax, 2004). In order to diagnose for outliers, the Mahalanobis distance (D^2) statistic was used. This test identifies observations that are farthest from the centroid with statistical significance. After discarding significant outliers, the sample size was reduced to 512 valid questionnaires.

8.1.3 Linearity and Multi-colliniarity

SEM assumes linear relationships between variables. However, when two or more predictor variables are highly correlated, it raises the issue of multi-collinearity, which violates an important assumption in SEM. Pearson correlations were used to determine the magnitude and direction of relationships between pairs of variables. Most correlations were significant at the 0.05 significance level or very close to being significant. Multi-colliniarity refers to the existence of a high degree of linear correlations among more than two variables. Commonly used collinearity diagnostics include Variance inflation factor (VIF) and Tolerance.

8.1.4 Normality

Multivariate statistical techniques such as SEM that uses maximum likelihood estimation assume normal distribution of data. Skewed distribution of data often affects the variance-covariance among variables ((Schumacker & Lomax, 2004). Skewness (lack of symmetry) and kurtosis (flatness) statistics were used to determine whether measured variables are normally distributed. Hildebrand (1986) suggested that for a given variable the skewness should be

between -2 to +2 while the kurtosis should be -1 to + 1 to be accepted as normally distributed. However, some researchers recommend concern if the kurtosis exceeds 7, especially dealing with categorical variables in psychological research (Curran et al., 1996). Variables used in this analysis fell in the above ranges and hence, considered normally distributed.

8.2 Data Analysis

SEM procedure consists of fitting the measurement model, and subsequent fitting of the structural model. Therefore, data analysis was conducted in two stages. To assess the measurement model fit, a principal component exploratory factor analysis with varimax rotation was used. In the second stage the empirical model fit was examined using SEM, and necessary improvements were made to enhance the structural model fit.

8.2.1 Validity of Measurement Constructs

Knowledge, attitudes, social influence, perceived behavioral control, overall satisfaction, behavioral intentions and behavior were the constructs included in the hypothetical model which was tested. Overall satisfaction was measured using a single item on a seven point Likert scale. Past literature suggests that satisfaction can be effectively measured by single items (Tian-Cole et al., 2002; Chen, 2007; Yuan et al., 2008). All the other model constructs represent latent variables and they were measured using multiple items.

The construct “knowledge” was operationalized by six items in the questionnaire. These items are labeled as K1 to K6 respectively for the ease of representation (Table 8.1). All items were measured on a seven point Likert scale. To evaluate the validity and reliability of these six items in measuring the latent construct “knowledge”, a principal component factor analysis with varimax rotation was performed. The Kaiser-Meyer-Olkin (KMO) test statistic of 0.851 suggested the sampling adequacy to perform a factor analysis while significance ($p=0.00$) in

Bartlett's test of sphericity indicated correlated measured items. According to Hair et al. (2005), factor loadings above 0.6 indicate independent variables identified a priori are well represented by a particular factor, while variables with factor loadings below 0.4 represent poor representation. Hence for this study a lower level of 0.5 was used as the cutoff margin. Results confirmed that six items used to measure knowledge are unifactorial, which means the six items selected to represent “knowledge” indeed measure the same construct. To assess the reliability of selected items in measuring the latent model construct, the Cronbach’s alpha score was examined. It is generally accepted that a value greater than 0.7 for Cronbach’s alpha indicates sufficient scale reliability (Cortina, 1993; Gliem & Gliem, 2003). As indicated in Table 8.1 the Cronbach’s alpha exceeded 0.7 for the set of six measured items.

Table 8.1: Validity and Reliability for Items used to represent Knowledge

Measurement item	Mean ± Standard Deviation	Factor loading	Cronbach's alpha
<i>Ecotourism</i>			
Minimizes the impact on natural environment (K1)	5.44± 1.14	0.816	0.836
Supports environmental conservation (K2)	5.24± 1.11	0.794	
Promotes sustainability (K3)	5.95± 0.98	0.755	
Builds environmental and cultural awareness (K4)	5.64± 0.95	0.741	
Provides financial incentives to locals (K5)	5.59± 1.13	0.707	
Brings a positive experience for visitors and hosts (K6)	5.67± 0.87	0.630	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.851			
Bartlett's Test of Sphericity $\chi^2 = 1067.6, p = 0.000$			

Five items were selected to operationalize the construct “attitudes” these items are labeled as A1 to A5 respectively in Table 7.8 for the ease of representation in future references. All measurement items except A5 had factor loadings greater than 0.5 indicating a good representation. Hence, the measurement item A5 was excluded from further analysis. Remaining items collectively produced a Cronbach’s alpha score of 0.845 confirming an adequate reliability in measuring the latent construct “attitudes”.

Table 8.2: Validity and Reliability for Items used to represent Attitudes

Measurement item	Mean \pm Standard Deviation	Factor loading	Cronbach's alpha
<i>Participation in ecotourism is</i>			
Environmentally favorable (A1)	6.20 \pm 0.94	0.861	0.845
Interesting (A2)	6.15 \pm 0.93	0.843	
Educational (A3)	6.34 \pm 0.84	0.838	
Enjoyable (A4)	6.34 \pm 0.81	0.756	
Affordable (A5)	3.62 \pm 1.20	0.161 ^d	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.786			
Bartlett's Test of Sphericity $\chi^2 = 874.1, p = 0.000$			
^d Items with factor loadings below 0.5 were deleted			

Similarly, the latent construct “social influence” was operationalized by five measurement items labeled SP1 to SP5 in Table 8.3, while the latent construct “perceived behavioral control” was measured using a set of four items. These are labeled as PBC 1 to PBC 4 in Table 8.4 for the convenience in future reference. As summarized in Table 8.3 and Table 8.4, factor analysis results and Cronbach’s alpha scores indicated that the two sets of measurement items employed in this study perform validly and reliably in measuring their respective latent constructs i.e. social pressure and perceived behavioral control.

Table 8.3: Validity and Reliability for Items used to represent Social Influence

Measurement item	Mean \pm Standard Deviation	Factor loading	Cronbach's alpha
My family members would think I should participation in ecotourism (SI1)	5.12 \pm 1.30	0.773	0.779
My colleagues would think I should participation in ecotourism (SI2)	4.92 \pm 1.10	0.746	
People who are important to me would approve participation in ecotourism (SI3)	5.30 \pm 0.96	0.718	
The popular opinion in the society is to choose ecotourism (SI4)	5.42 \pm 1.06	0.716	
My friends would think I should participation in ecotourism (SI5)	5.25 \pm 1.11	0.695	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.801			
Bartlett's Test of Sphericity $\chi^2 = 635.3, p = 0.000$			

Table 8.4: Validity and Reliability for Items used to represent Perceived Behavioral Control

Measurement item	Mean \pm Standard Deviation	Factor loading	Cronbach's alpha
<i>To participate in ecotourism, I have</i>			
Enough money (PBC 1)	5.16 \pm 0.97	0.807	0.800
Enough information (PBC 2)	5.01 \pm 0.88	0.793	
Enough stamina (PBC 3)	5.47 \pm 0.87	0.789	
Enough money (PBC 4)	5.25 \pm 0.86	0.775	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.791			
Bartlett's Test of Sphericity $\chi^2 = 603.9, p = 0.000$			

The construct “future behavioral intentions” was measured initially using a set of six items. Exploratory factor analysis (KMO statistic of 0.687 and significance in Bartlett's Test) conducted to assess the validity of measurement items produced two distinct factors with measurement items “interest to participate in ecotourism in the future”, “willingness to participate in ecotourism in one year” “likelihood of participating in ecotourism in one year” and “willingness to become a member of an environmental conservation organization” loading on one factor. Since the measurement item “willingness to become a member of an environmental conservation organization” had a poor loading on the factor (factor loading of 0.438) it was removed from further analysis. This factor was named “future involvement in ecotourism” and by taking the arithmetic mean across all contributing items to the factor, a composite average score was computed.

To recheck the performance of the new composite variable along with other two measured variables, a factor analysis was performed. Yielding of a unifactorial solution with satisfactory factor loadings indicated that the three items measure the same construct while a Cronbach's alpha score greater than 0.7 provided evidence for adequate reliability (Table 8.5). As indicated in Table 8.5, the three measurement items were labeled as FB1, FB2 and FB3 for convenience.

Table 8.5: Validity and Reliability for Items used to represent Future Behavioral Intentions

Measurement item	Mean \pm Standard Deviation	Factor loading	Cronbach's alpha
Likelihood of recommending the destination to others (FB 1)	5.45 \pm 1.03	0.875	0.716
Likelihood of revisiting this destination in the future (FB 2)	4.39 \pm 1.12	0.849	
Future involvement in ecotourism(FB 3)	5.67 \pm 1.01	0.662	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.610			
Bartlett's Test of Sphericity $\chi^2 = 370.3, p = 0.000$			

To measure the onsite behavior of respondents, a set of 9 statements was utilized in the questionnaire. The factor analysis generated a unifactorial solution which is an indication of the validity of selected items. All measurement items had sufficiently large factor loadings with the exception of “supported the local community through spending money at local stores/shops” (Table 8.6) which was removed from further analysis. Rest of the measurement items proved to be sufficiently reliable in measuring their respective latent model construct “behavior” since they accounted for a Cronbach’s alpha score of greater than 0.7.

Table 8.6: Validity and Reliability for Items used to represent Behavior

Measurement item	Mean \pm Standard Deviation	Factor loading	Cronbach's alpha
Observed nature and wildlife thoroughly (B1)	4.67 \pm 1.80	0.863	0.883
Helped to maintain the local environmental quality (B2)	5.54 \pm 1.82	0.815	
Did not damage plants (B3)	5.68 \pm 1.20	0.808	
Followed the instructions/guidelines provided before the tour (B4)	5.36 \pm 1.25	0.807	
Wore clothes that were appropriate for a forest ecosystem (B5)	4.11 \pm 1.74	0.789	0.499 ^d
Did not feed or disturbed wildlife (B6)	5.97 \pm 1.01	0.747	
Paid attention to the interpretation (B7)	5.00 \pm 1.52	0.724	
Stayed at an eco-lodge/eco-friendly hotel (B8)	3.02 \pm 2.45	0.655	
Supported the local community through spending money at local stores/shops (B9)	4.29 \pm 1.65	0.499 ^d	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.921			
Bartlett's Test of Sphericity $\chi^2 = 2430.1, p = 0.0001$			

^d Items with factor loadings below 0.5 were deleted

8.2.2 Assessing the Measurement Model

A structural equation model consists of the measurement model and the structural model. Measurement model illustrates relationships between theoretical constructs and their indicators. Structural model on the other hand take causal relationships between theoretical constructs into account. Theoretically, estimation of the measurement model produces covariance matrix between constructs and this provide the basis for structural model estimation. In practice, Amos estimates both these models simultaneously. The model was built in Amos and the initial structural equation model to predict ecotourism behavior is shown in Figure 8.1. In the structural equation model, constructs attitude, satisfaction, future behavioral intentions and satisfaction represent endogenous variables while constructs knowledge, perceived behavioral control and behavior function as exogenous variables. The initial structural equation model was tested to examine how well the hypothetical model fit the data. The fit indices estimated by Amos for the initial model are summarized in Table 8.7. The table indicates mixed evidences for model fit with only five out of nine model fit indices meeting acceptance criteria. This suggested that the initial model could be substantially improved.

Table 8.7: Fit Indices for the Initial Structural Model

Index	Index value	Decision criteria	Decision
Chi-square test			
Chi-square	735	$p > 0.05$	Rejected
Chi-square /d.f.	2.17 (735/339)	< 5	Accepted
Goodness of fit indices			
GFI	0.905	> 0.9	Accepted
AGFI	0.887	> 0.9	Rejected
PGFI	0.756	> 0.5	Accepted
NIF	0.871	> 0.9	Rejected
Alternative indices			
CFI	0.925	> 0.9	Accepted
RMSEA	0.048	< 0.05	Accepted
RMR	0.092	< 0.05	Rejected

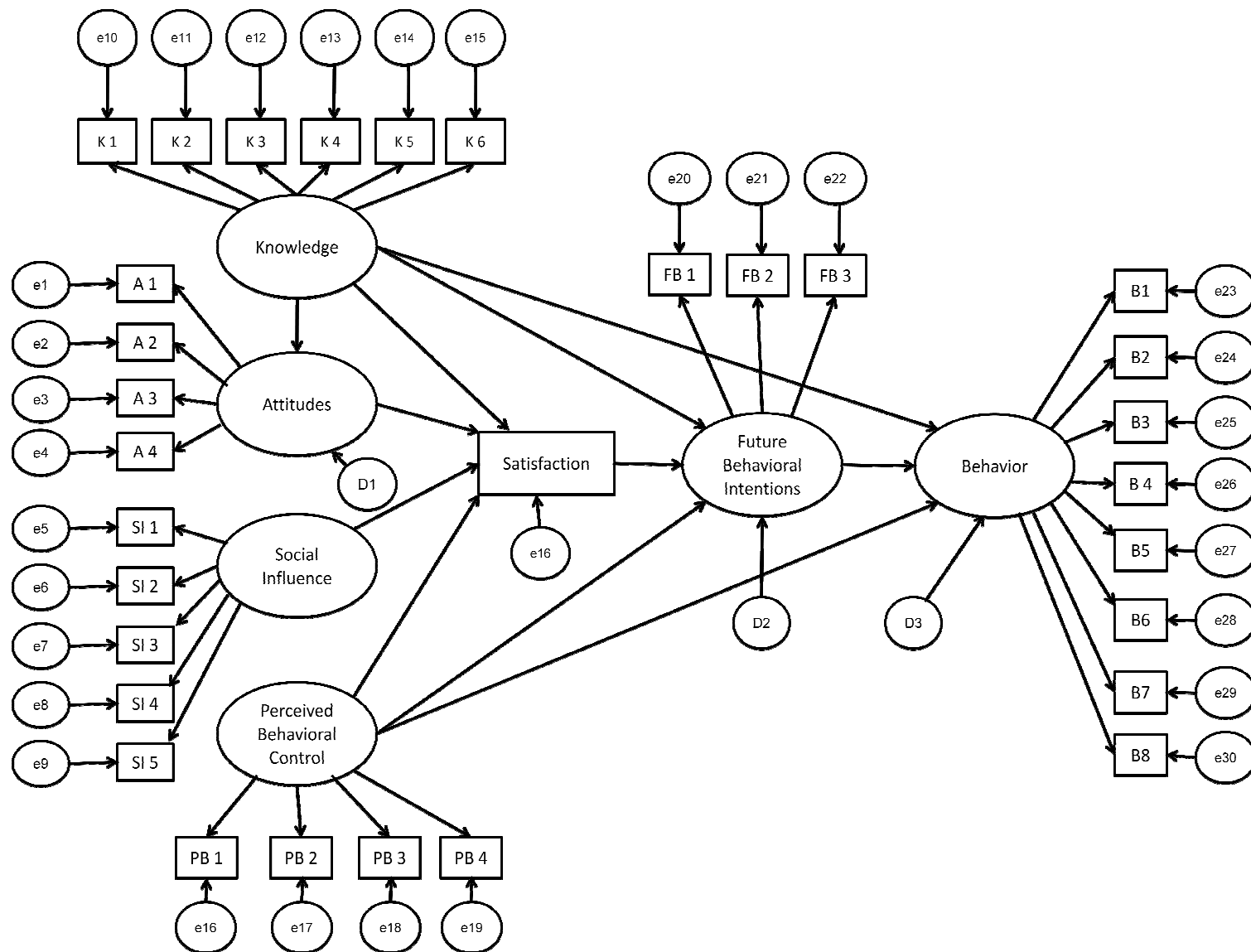


Figure 8.1: The Initial Structural Equation Model of Ecotourism Behavior

In order to improve the model fit, standardized residual patterns and parameter significant tests for indicator variables were examined. All parameters were significant at $p < 0.001$ level suggesting that indicator variables selected to measure latent model constructs are indeed good indicators. In sufficiently large samples, standardized residual covariances of a correctly specified model should be less than two in their absolute values (Arbuckle, 2009). However, observation of standardized residual patterns revealed that comparatively larger standardized residuals are associated with five indicator variables. These indicators included “brings a positive experience for visitors and hosts” (K6), “enjoyable” (A4), “future involvement in ecotourism” (FB3), “wore clothes that were appropriate for a forest ecosystem” (B5), and “stayed at an eco-lodge/eco-friendly hotel” (B8) that measured knowledge, attitudes, future behavioral intentions, and behavior respectively. Hence, removal of these indicators suggested substantial improvement in model fit. The indicator A4 showed larger standardized residual covariances especially with indicators of satisfaction, perceived behavioral control, future behavioral intentions and behavior. Enjoyment is a key motivational aspect of any recreational experience. Hence it can be expected that a dominant premise such as enjoyment to have an infusing effect on other dimensions of recreational behavior. On this ground, removal of the indicator A4 is justified by the researcher. The indicator FB3 on the other hand exhibited larger standardized residual covariances especially with indicators of behavior. Individuals with genuine interest in ecotourism are likely to exhibit environmentally desired behavior. Since FB3 measured the interest and likelihood of future participation in ecotourism, it can be expected that individuals giving similar responses for indicators of future behavioral intentions and behavior. Larger standardized residual covariances associated with K6, B5, and B8 are unexplained and may be due to random associations.

Regression coefficients estimated for the initial model are summarized in Table 8.8 along with their respective outcomes for t-tests of parameter significance. All regression coefficients were significant either at $p < 0.001$ or $p < 0.05$ level except the path from knowledge to satisfaction. Modification indices supported the deletion of this path from the model while it indicated the addition of a new path from knowledge to perceived behavioral control. The initial model was re-specified by adding the new path from knowledge to perceived behavioral control. Modification indices further suggested correlating error terms of K3 and K4 for better model fit.

Table 8.8: Regression Coefficient Estimates for the Initial Structural Model

		Path Estimate	Standard Error	t-value	p<0.05
Attitudes	← Knowledge	0.128	0.051	2.515	0.012
Satisfaction	← Attitudes	0.185	0.063	2.911	0.004
Satisfaction	← PBC	0.131	0.059	2.215	0.027
Satisfaction	← Social Influence	0.324	0.068	4.787	0.000
Satisfaction	← Knowledge	0.038	0.066	0.586	0.558
Behavioral Intention	← Knowledge	0.329	0.070	4.688	0.000
Behavioral Intention	← Satisfaction	0.348	0.049	7.151	0.000
Behavioral Intention	← PBC	0.287	0.065	4.454	0.000
Behavior	← Knowledge	0.527	0.084	6.307	0.000
Behavior	← Behavioral Intention	0.320	0.064	5.016	0.000
Behavior	← PBC	0.293	0.074	3.956	0.000

A good measurement model should suffice convergent and discriminate validity. In convergent validity it is assessed whether there's a convergence between indicators that were used to measure latent constructs. The re-specified model was tested, and its convergent and discriminate validity were assessed. Convergent validity requires evidences of item reliability, construct reliability and average variance extracted (Hair et al., 2005). According to Hair et al. (2005), factor loadings greater than 0.40 for observed variables indicate good convergence. As indicated in Table 8.9, factor loadings exceeded 0.4 for all indicator variables used in the re-specified model. In addition, t-statistics in excess of 2 for parameter significant tests indicated

that all parameter coefficients were significant at $p < 0.001$ level. In the analysis of re-specified model, indicator variables K1, A1, SI1, PBC1, BI1 and B1 were fixed to 1, hence no t-statistics were computed for these indicators.

Table 8.9: Convergent and Discriminant Validity of Measurement Scales for the Final Model

Variable/Measurement item	Factor loading	Standardized factor loading	t-value	AVE	CR
Knowledge					
K1	1.000	0.812	—	0.487	0.825
K2	0.853	0.711	15.142		
K3	0.714	0.672	14.676		
K4	0.641	0.621	12.818		
K5	0.806	0.657	14.143		
Attitudes					
A1	1.000	0.883	—	0.644	0.843
A2	0.866	0.773	17.536		
A3	0.749	0.744	16.770		
Social Influence					
SI1	1.000	0.706	—	0.418	0.782
SI2	0.796	0.664	11.757		
SI3	0.662	0.632	11.451		
SI4	0.719	0.622	11.122		
SI5	0.727	0.605	11.905		
Perceived Behavioral Control					
PBC1	1.000	0.672	—	0.502	0.801
PBC2	1.085	0.712	13.013		
PBC3	1.077	0.717	12.847		
PBC4	1.225	0.732	12.857		
Behavior Intention					
BI1	1.000	0.828	—	0.651	0.788
BI2	1.046	0.785	11.793		
Behavior					
B1	1.000	0.876	—	0.506	0.855
B2	0.477	0.443	10.142		
B3	0.597	0.793	21.271		
B4	0.640	0.795	21.331		
B6	0.436	0.680	16.682		
B7	0.907	0.589	14.263		

Composite Reliability (CR) and Average Variance Extracted (AVE) are often recommended to test the reliability of the constructs (Hair et al., 2005; Fornell & Larcker, 1981). CR assesses the internal consistency of a measure (Fornell & Larcker, 1981). Hair et al. (2005) describes CR as an index that estimates how well a set observed indicators contribute to measure a latent construct. Hair et al. (2005) further recommends a minimum threshold of 0.7 for CR to be acceptable. In SEM analysis, Amos produces standardized regression weights for indicator variables, and composite reliabilities for the two latent variables were computed using the following formula. As indicated in Table 7.9, CR scores for all the model constructs exceeded the minimum threshold, and indicated satisfactory convergent validity.

$$CR = \frac{(\text{sum of standardized loading})^2}{(\text{sum of standardized loading})^2 + (\text{sum of indicator measurement error})}$$

AVE is defined as “the amount of variance captured by the construct in relation to the variance due to measurement error” (Hair et al., 2005). AVE values above the 0.5 are deemed acceptable to indicate satisfactory convergent validity (Fornell & Larcker, 1981; Hair et al., 2005). Utilizing the standardized regression weights generated by Amos for indicator variables, AVE scores were computed using the following formula.

$$AVE = \frac{(\text{sum of squared standardized loading})}{(\text{sum of squared standardized loading}) + (\text{sum of indicator measurement error})}$$

AVE scores for latent model constructs attitudes, perceived behavioral control, behavioral intentions and behavior exceeded the minimum threshold, indicating satisfactory convergent validity (Table 8.9). Latent model constructs knowledge and social influence did not show sufficient convergent validity in terms of AVE. However, both these constructs were accepted under CR criteria. Hence, it was concluded that selected indicator variables converge sufficiently to measure their respective latent model constructs.

Discriminant validity indicates the extent to which latent constructs differ from each other. Discriminant validity can be examined by comparing the AVE for latent constructs with the estimated squared correlation between all the other model constructs (Fornell & Larcker, 1981). If the AVE score is greater than the squared correlations between other latent model constructs, it indicates satisfactory discriminant validity. Table 8.10 compares AVE of each latent construct with squared correlations between every other latent constructs. Based on the evidence, all latent constructs met the criterion for adequate discriminant validity.

Table 8.10: Comparison of AVE and Squared Correlations between Each Model Construct (Final Model)

	Social Influence	Knowledge	Perceived behavioral control	Attitudes	Behavioral intentions
Social influence	0.418				
Knowledge	0.061	0.487			
Perceived behavioral control	0.004	0.071	0.502		
Attitudes	0.001	0.018	0.001	0.644	
Behavioral intentions	0.022	0.091	0.095	0.007	0.651
Behavior	0.017	0.211	0.126	0.005	0.161

AVE values are indicated on the diagonal

8.2.3 Assessing the Structure Model Fit

Structural model tests the causal relationships between theoretical constructs specified in the model. The proposed conceptual model investigates the relationships among five constructs (Figure 8.1). Some commonly reported model fit indices in SEM research are summarized in Table 8.11. The Chi-square goodness of fit test (χ^2) generated a value of 544.9 with 287 degrees of freedom (d.f.). In the χ^2 goodness of fit test, non-significance is desired. However, χ^2 statistic was significant at $p < 0.001$ level. The χ^2 test is sensitive to sample size and for larger samples, it usually gives significance. The χ^2 value divided by its degrees of freedom is considered a more appropriate test for larger samples (Hair et al., 2005). A χ^2 /d.f. ratio of less than five is generally accepted. For the re-specified hypothetical model, the χ^2 /d.f. ratio was 1.898 and this indicated a

good model fit. Other goodness of fit indices and alternative indices reported in Table 8.11 indicated good model fit under their respective decision criteria, except for the index RMR. These evidences suggest that sampling data and structure model has a good fit. Comparison of tables 8.7 and 8.11 confirms that all fit indices for the re-specified model have substantially improved from the initial model.

Table 8.11: Fit Indices for the Final Structural Model

Index	Index value	Decision criteria	Decision
Chi-square test			
Chi-square	544.9	$p > 0.05$	Reject
Chi-square /d.f.	1.898 (544.9/287)	< 5	Accept
Goodness of fit indices			
GFI	0.924	> 0.9	Accept
AGFI	0.907	> 0.9	Accept
PGFI	0.755	> 0.5	Accept
NIF	0.9	> 0.9	Accept
Alternative indices			
CFI	0.948	> 0.9	Accept
RMSEA	0.042	< 0.05	Accept
RMR	0.072	< 0.05	Reject

8.2.4 Path Analysis and Hypothesis Testing

Path analysis in SEM is a useful tool in assessing theoretically meaningful relationships among variables that are often difficult to specify in regression models (Schumacker & Lomax, 2004). Constructs specified in a model can have direct or indirect effects on other variables. Figure 8.2 illustrates the structural equation model developed to explain ecotourism behavior with estimated parameters. Values on unidirectional arrows or paths indicate regression coefficients, and they represent the strength of direct influence of one variable on another. When one or more variables mediate the effect between two variables of interest, they have indirect effects. Figure 8.2 further reports measurement errors for each observed variable and disturbances where their parameters were initially fixed to constants (1).

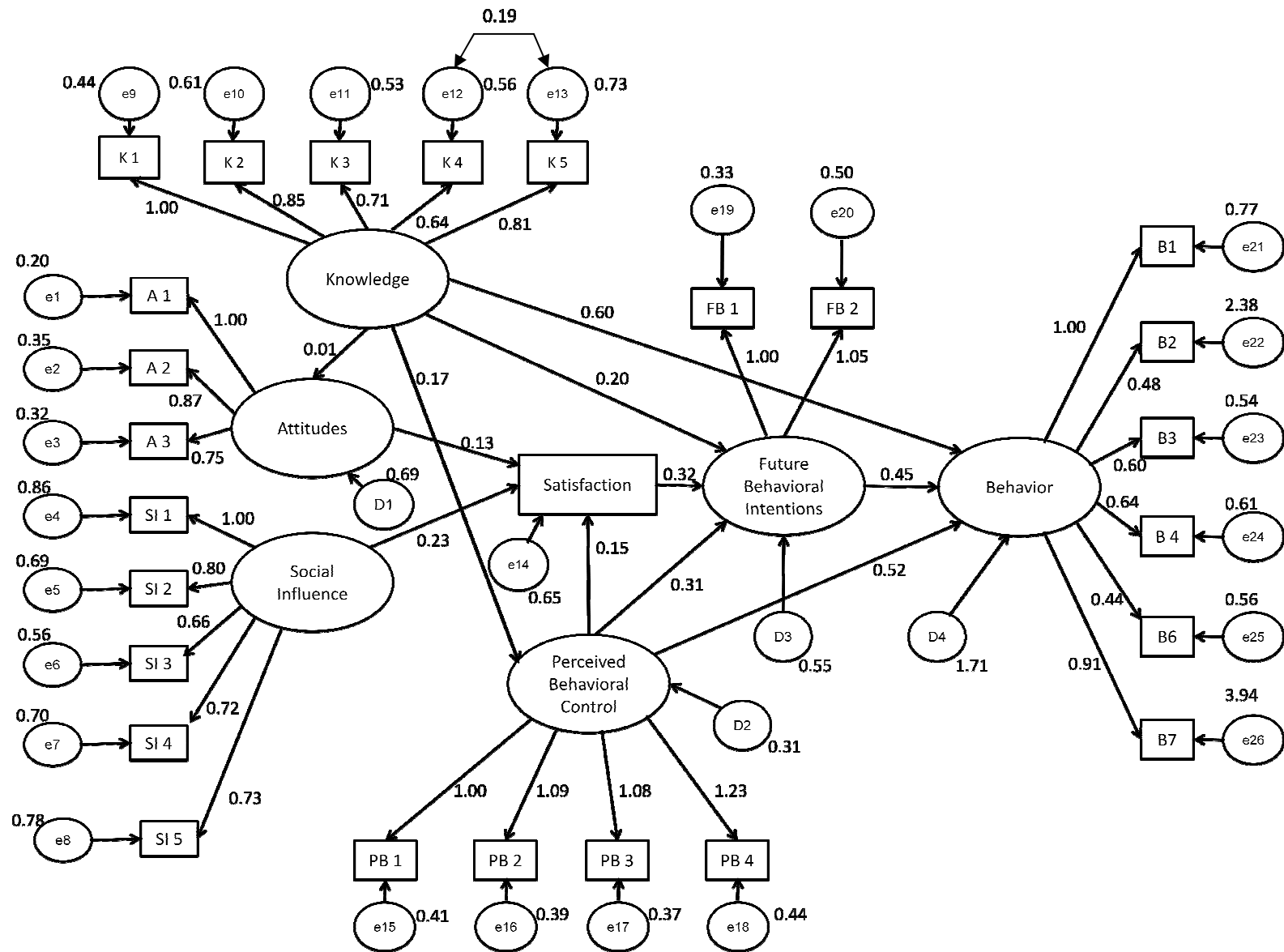


Figure 8.2: The Final Structural Equation Model of Ecotourism Behavior

There were two covariance terms in the model. The covariance between e12 and e13 was estimated at 0.191 while the covariance between latent constructs knowledge and social influence was 0.108. Both covariances were significant at $p < 0.001$ level. Positive parameter estimates indicated positive relationships between variables.

Direct, indirect, and total effects between constructs for the ecotourism behavior model are summarized in Table 8.12. According to path analysis results, knowledge directly affects attitudes, perceived behavioral control, future behavioral intentions, and behaviors. In addition, knowledge has indirect effects on future behavioral intentions and behaviors. The total effect of knowledge is strongest on behavior (0.456), followed by future behavioral intentions (0.281). Hence knowledge is an important antecedent of future behavioral intentions and behaviors.

Being an exogenous latent variable, “social influence” has a significant positive direct effect on satisfaction, and consequently on future behavioral intentions and behaviors. The endogenous latent construct “attitudes” also has direct effect on satisfaction and consequent indirect effects on future behavioral intentions and behaviors. Perceived behavioral control on the other hand has strong positive direct effects on future behavioral intentions and behaviors while indirectly influencing them through satisfaction. However, the indirect effects are comparatively weak. When the magnitude of total effects are considered, knowledge, perceived behavioral control, and future behavioral intentions seem to be the critical precursors of ecotourism behavior. Similarly knowledge, perceived behavioral control, and satisfaction function as important antecedents of future behavioral intentions.

Twelve basic hypotheses were formulated in model specification stage, and these hypothetical relationships collectively formed the hypothetical model to explain the ecotourism behavior. The 11 core hypotheses in turn tested hypothetical influential paths embedded in the

model (see section 5.2 in Chapter 5). Standardized path coefficients along with their t-statistics were used for hypothesis testing.

Table 8.12: Direct, Indirect and Total Effects for the Ecotourism Behavior Model

	Perceived behavioral control	Attitudes	Satisfaction	Behavioral intentions	Behavior
Social influence					
Direct effect	-	-	0.246	-	-
Indirect effect	-	-	-	0.079	0.019
Total effect	-	-	0.246	0.079	0.019
Knowledge					
Direct effect	0.263	0.114	-	0.211	0.348
Indirect effect	-	-	0.042	0.07	0.117
Total effect	0.263	0.114	0.042	0.281	0.465
Perceived behavioral control					
Direct effect	-	-	0.103	0.213	0.190
Indirect effect	-	-	-	0.033	0.059
Total effect	-	-	0.103	0.246	0.248
Attitudes					
Direct effect	-	-	0.132		
Indirect effect	-	-	-	0.042	0.01
Total effect	-	-	0.132	0.042	0.01
Satisfaction					
Direct effect	-	-	-	0.321	-
Indirect effect	-	-	-	-	0.076
Total effect	-	-	-	0.321	0.076
Behavioral intentions					
Direct effect	-	-	-	-	0.238
Indirect effect	-	-	-	-	-
Total effect	-	-	-	-	0.238

Table 8.13 summarizes the standardized path coefficients and hypothesis testing results for ecotourism behavior model. The 11 core hypotheses are indicated as paths in the Table 8.13 depicting the direction of positive effect. All paths reported t-statistics exceeding 2.0 for parameter significance tests (significant either at $p < 0.001$ or $p < 0.05$ level) with the exception of path knowledge \rightarrow satisfaction. Therefore, the alternative hypothesis H_2 was rejected. As a result, the alternative hypothesis for the embedded relationship H_{13} was also rejected. Since the

path corresponding to H₂ was insignificant, it is not depicted in Figure 8.2. The acceptance of alternative hypotheses H₁, H₃, H₄, H₅, H₆, H₇, H₈, H₉, H₁₀, and H₁₁ justifies the acceptance of alternative hypotheses H₁₂, H₁₄, H₁₅, H₁₆, H₁₇, H₁₈, and H₁₉ related to embedded relationships in the model. There was an additional path suggested by modification indices which is “knowledge positively and directly affects on perceived behavioral control”. Accordingly, there were three additional pathways where knowledge affects on behavior. The magnitude of standardized coefficient reflects the strength of relationship. Knowledge had the strongest significant relationship with behavior (standardized coefficient = 0.0.348, $p < 0.001$). Satisfaction also showed a strong positive relationship with future behavioral intentions (standardized coefficient = 0.321, $p < 0.001$).

Table 8.13: Hypothesis Testing for the Ecotourism Behavior Model

Path/Hypothesis		Standardized coefficient	t-statistic	<i>p</i>
Attitudes	← Knowledge	0.114	2.168	0.030
Perceived behavioral control	← Knowledge	0.263	4.703	0.000
Satisfaction	← Knowledge	0.044	0.665	0.506
Satisfaction	← Attitudes	0.132	2.832	0.005
Satisfaction	← Perceived behavioral control	0.103	2.124	0.034
Satisfaction	← Social Influence	0.246	4.901	0.000
Behavior Intention	← Knowledge	0.211	3.964	0.000
Behavior Intention	← Satisfaction	0.321	6.939	0.000
Behavior Intention	← Perceived behavioral control	0.213	3.795	0.000
Behavior	← Knowledge	0.348	6.895	0.000
Behavior	← Behavior Intention	0.238	4.513	0.000
Behavior	← Perceived behavioral control	0.190	3.697	0.000

The path diagram depicting all the significant relationships is shown in Figure 8.3. All the indicated standardized path coefficients were significant. Values indicated on top of each latent variable represent the amount of variance explained by their respective predictors. For instance, predictors of behavior explain 33% (0.33) of its variance and the remaining 67% is due to error variance. Similarly, 25% of behavior intention’s variance is explained by its predictors. For

latent endogenous variables attitudes and perceived behavioral control, more than 90% of their variances are due to error variance. This may indicate stronger effects of factors that were not included in the model on attitudes and perceived behavioral control.

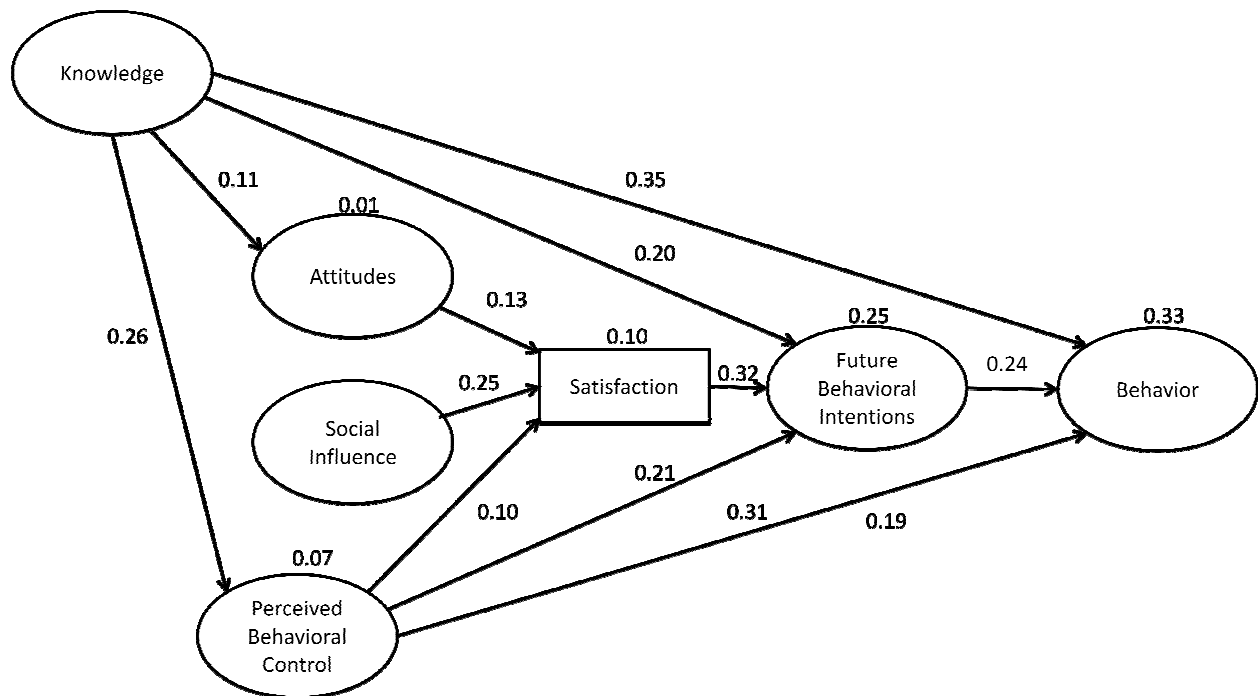


Figure 8.3: Path Diagram for Ecotourism Behavior Model with Causal Relationships

Figure 8.4, illustrates the final outcome of the study; a model to explain the ecotourism behavior of individuals visiting forest-based attractions in Sri Lanka. In essence, the model suggests that knowledge, attitudes, social influence and perceived behavioral control are important determinants of an individual's intention to participate in ecotourism, and his/her actual onsite behavior. Satisfaction plays a key mediating role in the model by bridging the four determinants knowledge, attitudes, social influence and perceived behavioral control with behavioral intentions. As suggested in the theory of planned behavior, behavioral beliefs, normative beliefs and control beliefs contribute in the formation of attitudes, social influence and control beliefs respectively. Although present model did not account for these constructs, they

have been proved by previous work to be valid predictors. They are represented in the model surrounded by a rectangular border with dashed lines.

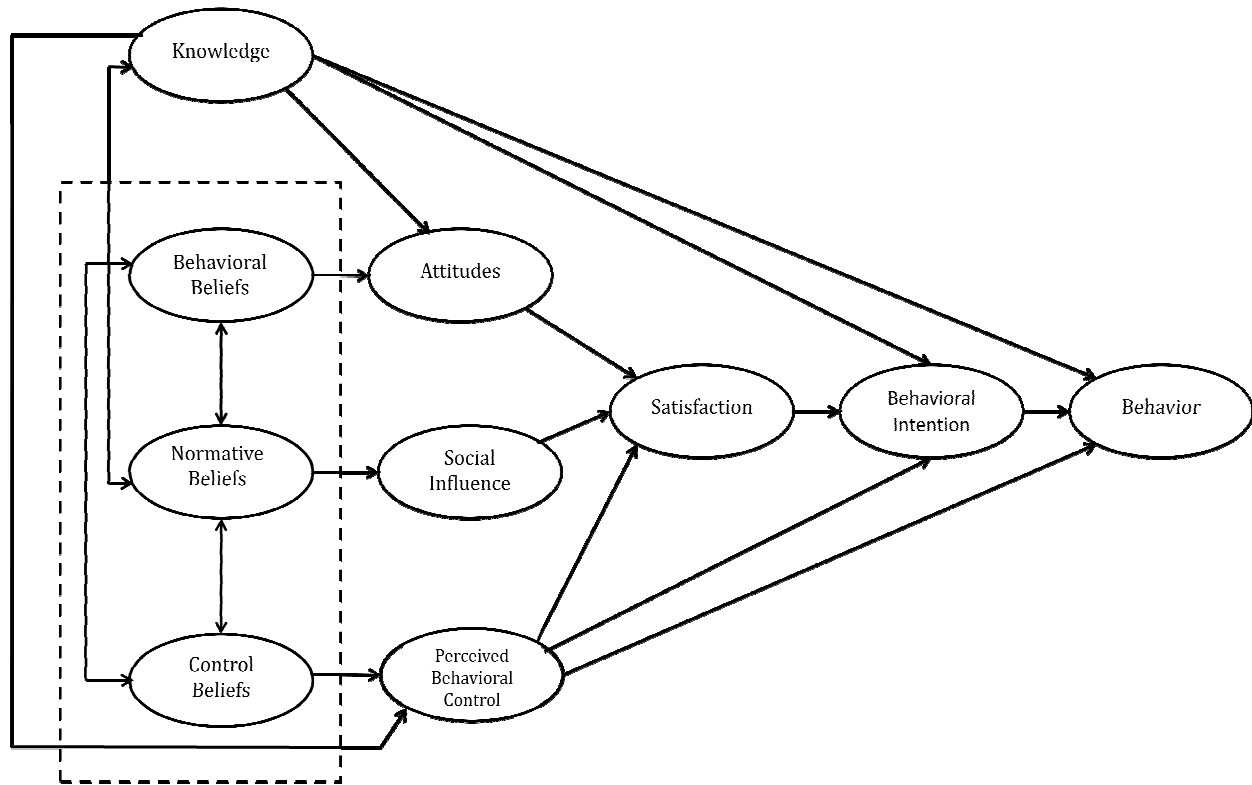


Figure 8.4: A Model to Explain the Ecotourism Behavior of Individuals Visiting Forest-based Attractions in Sri Lanka

8.3 Discussion

Present study developed an ecotourism behavioral model of natural forest recreation areas, integrating satisfaction as an intermediary variable. The proposed model is a modification of Ajzen's (1991) theory of planned behavior and incorporates the theoretical assumptions of the added construct “knowledge” from Sapp's (1991) expanded rational expectations model. The utility of the theory of planned behavior in describing leisure choices and behaviors has been well tested (Ajzen & Driver, 1992; Lam & Hsu, 2004; March & Woodside, 2005; Lee, 2007). This model broadens the understanding on antecedents of human recreational behavior in the

context of ecotourism and especially contributes to consumer behavioral research in ecotourism from the theoretical perspective.

Results of the study suggest that predictive effect of knowledge and mediating effect of satisfaction introduced to the theory of planned behavior are indeed important modifications in predicting behavioral intentions and behaviors of ecotourism. This was evident from knowledge having significant positive direct effects on behavioral intentions and behavior while satisfaction having the strongest direct effect on behavioral intentions. Ecotourism is often described as a knowledgeable form of travel with education, learning and nature appreciation sited as primary motives (Weaver, 2001). Knowledge also plays a key role in attitude formation (Raju et al., 1995). Hence, it can be expected that knowledge to emerge as the most important predictor in future behavioral intentions and behavior in ecotourism.

Berger and Mitchel (1989) suggested that a person acquires knowledge about a particular behavior over time, and a connection exists between the level of knowledge a consumer has and the decisions he/she make. This notion is supported by knowledge having significant direct effects on behavioral intentions and behavior in the present model. In addition, knowledge having direct effect on perceived behavioral control explains the scenario that an individual assessing his/her internal and external resources/capabilities before participating in ecotourism. Having a broader knowledge regarding the behavior in question (i.e. what to expect in a typical ecotourism experience) leads an individual to accurate decisions since it facilitates the process of evaluating his/her internal and external capabilities against possible outcomes.

Satisfaction is at the center stage in most leisure behaviors. Mannell and Iso-Ahola (1987) argued that psychological outcomes from a leisure experience can be measured using satisfaction. In confirmatory with past tourism studies (Chen & Tsai, 2007; Lee et al., 2007;

Yuan et al., 2008) the present study emphasizes satisfaction as an important predictor of ecotourists' intention to revisit and recommend a destination.

According to Ajzen's (1985) TBP, the human behavior is guided by three kinds of considerations namely behavioral beliefs, normative beliefs, and control beliefs. Behavioral beliefs produce a favorable or unfavorable attitude towards the behavior; normative beliefs result in perceived social pressure or subjective norm; and control beliefs channels perceived behavioral control. Although it was initially planned to incorporate these three "belief" constructs to the model, they were left out in order to achieve a parsimonious model. In addition, as a structural equation model becomes complex, it becomes more difficult to fit a model to the data (Schumacker & Lomax, 2004). This is another practical issue that was taken into consideration in trimming the model. Yet, the remaining constructs attitudes, social influence, perceived behavioral control, behavioral intentions, and behavior present the essence of TPB, and these variables have been used by previous researchers to embody TPB (Lee, 2007).

Sapp and Harrod (1989) used the social acceptability construct to further define normative beliefs in TBP. It essentially examines the view an individual has towards social systems or institutions regarding the behavior under investigation. The construct social influence in present model represents both referent groups and social systems. Leisure or tourism behaviors are often associated with groups of people. Hardcore ecotourists travel in small groups while casual ecotourists travel in larger groups. In services such as tourism, people are an essential component since they are a part of the overall service delivery process (Zeithmal et al., 2009). In services, other customers' attitudes, beliefs and actions affect a particular individual's satisfaction derived from the service. The construct "social influences" in the present model having strong effect on satisfaction explains this phenomenon.

Ecotourism activities require certain degree of skills and physical stamina (e.g. canopy walk, hiking on nature trails etc.). Therefore, a person with less such abilities or skills may not be able to fully experience an ecotourism product. This in turn affects the overall satisfaction. Perceived behavioral control in TPB explains an individual's perceived ease or difficulty in performing a behavior. An individual assess his/her internal and external resources/capabilities before making a decision on whether to participate in ecotourism. This scenario is evident in present model with perceived behavioral control having significant positive effect on satisfaction behavioral intentions and behavior.

In the final mode behavioral intentions, satisfaction, attitudes, perceived behavioral control, social influence and knowledge explained 33% of the variance in behavior. The remaining 67% of the variance was due to error or factors that were not included in this study. Hence the proposed model performs moderately well in explaining ecotourism behavior of individuals visiting forest-based attractions in Sri Lanka. The variances of latent constructs attitudes and perceived behavioral control were least explained by their respective predictors. The proposed model did not account for behavioral beliefs and control beliefs that have been suggested as predictors in TPB. This may be a reason for large error variances associated with latent constructs attitudes and perceived behavioral control.

CHAPTER 9: PREVIOUS VISITS, TRIP QUALITY, SATISFACTION, AND FUTURE BEHAVIORAL INTENTIONS

Addressing the third objective of the study, a model was developed to investigate the role of previous ecotourism experiences or visits in influencing future behavioral intentions. The relationship between previous visits and future behavioral intentions was examined in a quality-satisfaction domain. In the context of ecotourism, better understanding of such relationships help ecotourism operators to shape the demand for tour products that are more environmentally sustainable, and socially responsible. Structural equation modeling was used to build and test the hypothesized ecotourism behavior model. The modeling procedures and results are described in detail herein along with model implications.

9.1 Data Preparation for Structural Equation Modeling

A total of 547 individuals participated in the survey. After discarding invalid, incomplete, inaccurate and unreliable responses, there were 525 valid or usable questionnaires. Structural equation modeling (SEM) requires adjusting data for missing values, and it assumes multivariate normality, linear relationships among variables, absence of multi-collinearity, and absence of outliers in data. Hence usable questionnaires were further screened for missing values, outliers, linearity and normality using the procedure discussed in previous chapter. After necessary adjustments were made, a total of 522 questionnaires were retained as the final sample.

9.2 Data Analysis

As discussed in the previous chapter, data analysis consisted of initial assessment of the validity of measurement constructs using a principal component exploratory factor analysis. This was followed by SEM procedure to investigate the relationships among previous visits, trip quality, perceived value, satisfaction, and future behavioral intentions.

9.2.1 Model Constructs and Their Measurements

The constructs in the hypothetical model included previous visits, trip quality, perceived value, overall satisfaction, and future behavioral intentions. Variables previous visits, perceived value and overall satisfaction were measured using a single item on a seven-point Likert scale (Table 9.1). Past literature suggests that these variables can be effectively measured by single items (Tian-Cole et al., 2002; Chen, 2007; Yuan et al., 2008). Trip quality and future behavioral intentions represent latent variables, and they were measured using multiple items.

The construct “trip quality” was operationalized by five items in the questionnaire. All items were measured on a seven point Likert scale. To evaluate the validity and reliability of these five items in measuring the latent construct “trip quality”, a principal component factor analysis with varimax rotation was performed. The Kaiser-Meyer-Olkin (KMO) test statistic of 0.841 suggested the sampling adequacy to perform a factor analysis while significance ($p=0.00$) in Bartlett's test of sphericity indicated correlated measured items. According to Hair et al. (2005), factor loadings above 0.6 indicate independent variables identified a priori, are well represented in a particular factor, while variables with factor loadings below 0.4 represent poor representation. Hence, for this study a lower level of 0.5 was used as the cutoff margin. Results confirmed that five items used to measure trip quality are indeed unifactorial i.e. five items measure the same construct (Table 9.1). To assess the reliability of selected items in measuring the latent model construct, the Cronbach's alpha score was computed. It is generally accepted that a value greater than 0.7 for Cronbach's alpha indicates sufficient scale reliability (Cortina, 1993; Gliem & Gliem, 2003). As indicated in Table 8.1, the Cronbach's alpha exceeded 0.7 for the set of five measured items.

Future behavioral intention was the other latent model construct which was measured using multiple items. Initially a set of six items was used to measure future behavioral

intentions. Exploratory factor analysis conducted to assess the validity of measurement items produced two distinct factors with measurement items “interest to participate in ecotourism in the future”, “willingness to participate in ecotourism in one year”, “likelihood of participating in ecotourism in one year”, and “willingness to become a member of an environmental conservation organization” loading on a single factor. Since the measurement item “willingness to become a member of an environmental conservation organization” had a poor loading on the factor (factor loading of 0.449) it was omitted from further analysis.

Table 9.1: Means, Factor Loadings and Reliabilities of Measurement Items

Variable/M Measurement item	Mean \pm Standard Deviation	Factor loading	Variance explained (%)	Cronbach's alpha
Trip quality				
Amenities	3.98 \pm 1.01	0.991	63.96	0.854
Cleanliness	4.40 \pm 0.85	0.855	12.97	
Staff/Volunteers	4.68 \pm 0.93	0.792	10.87	
Education	4.88 \pm 0.97	0.739	7.94	
Information	4.76 \pm 0.99	0.681	4.24	
Future behavioral intention				
Likelihood of recommending the destination to others	5.14 \pm 1.12	0.921	64.42	0.709
Likelihood of revisiting this destination in the future	3.84 \pm 1.01	0.872	27.67	
Future involvement in ecotourism	5.23 \pm 1.19	0.571	7.91	
Past visits				
How many times have you visited forest-based attractions in Sri Lanka?	2.21 \pm 2.01			
Perceived value				
Today's visit offered good value for the money	5.44 \pm 1.07			
Satisfaction				
Overall satisfaction with the visit	5.96 \pm 0.99			

A composite average score was computed for this factor which was named as “future involvement in ecotourism”. To recheck the performance of the new composite variable along with other two measured variables, a factor analysis was performed (KMO statistic = 0.58 and

$p=0.001$ for Bartlett's test). Yielding of a unifactorial solution with satisfactory factor loadings indicated that the three items in fact measured the same construct (Table 9.1). Also the Cronbach's alpha exceeded 0.7 for the three items.

9.2.2 Assessing the Measurement Model

The model was built in Amos and the initial structural equation model to predict ecotourism behavioral intentions is shown in Figure 9.1. Amos estimates both measurement and structural models simultaneously. Each latent variable and its predictors collectively form the measurement model while structural model examines the hypothetical relationships between endogenous and exogenous variables in the model.

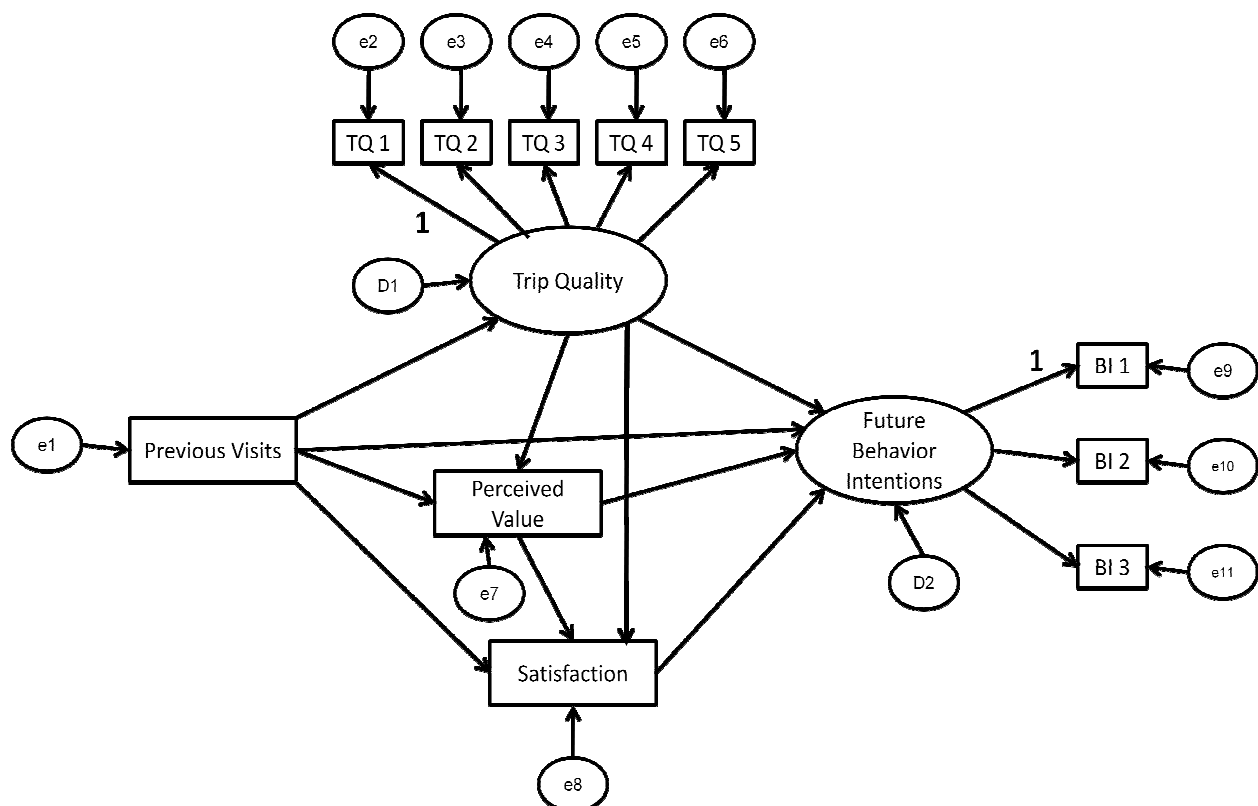


Figure 9.1: Structural Equation Model to Investigate the Role of Previous Visits on Future Behavioral Intentions

In the structural equation model, indicators TQ1, TQ2, TQ3, TQ4 and TQ5 represent education, staff/volunteers, amenities, cleanliness and quality of information respectively. These

indicators were used to measure the latent construct trip quality. Indicators BI1, BI2 and BI3 represent future involvement of ecotourism, likelihood of recommending the destination and the likelihood of revisiting the destination respectively. TQ1 and BI1 were treated as fixed parameters.

In measurement model fitting, SEM performs a confirmatory factor analysis to assess whether the observed variables chosen by the researcher to represent a latent construct actually represent it. A good measurement model should adequately account for both convergent and discriminate validity. In convergent validity it is assessed whether there's a convergence between similar constructs or indicators that were used to measure latent constructs.

According to Hair et al. (2005) convergent validity requires evidences of item reliability, construct reliability and average variance extracted. Convergent validity of each factor was tested by examining the standardized factor loadings. Factor loadings of 0.50 or higher, preferably 0.70 or higher for indicator variables is deemed acceptable. For indicator variables used in this analysis, factor loadings exceeded 0.5 for all indicator variables except for FB1. In addition, *t-values* above 2.0 indicate the statistical significance of associated factor loadings. As indicated in Table 9.1, *t-values* for all standardized factor loadings of measurement items were significant at 0.01 significance levels.

According to Hair et al. (2005), Composite Reliability (CR) and Average Variance Extracted (AVE) are important indices in testing the reliability of the constructs. CR values in excess of 0.7 considered acceptable while the minimum threshold for AVE is 0.5. CR and AVE scores were computed for the two latent variables using standardized regression weights for respective indicator variables and results are summarized in Table 9.2. As shown in Table 9.2.

Accordingly CR and AVE scores for both latent constructs “trip quality” and “future behavioral intentions” exceeded minimum threshold values, indicating satisfactory convergent validity.

Table 9.2: Convergent and Discriminant Validity of Measurement Scales

Variable	Factor loadings	Standardized factor loading	t-value	CR	AVE
Trip quality					
TQ 1	1.000	0.665	-	0.862	0.561
TQ 2	1.061	0.736	14.81**		
TQ 3	1.469	0.904	17.26**		
TQ 4	1.096	0.822	16.21**		
TQ 5	0.876	0.571	11.87**		
Future behavior intention					
BI 1	1.000	0.371	-	0.753	0.532
BI 2	2.286	0.891	8.34**		
BI 3	2.018	0.811	8.04**		

** $p < 0.01$

Discriminant validity indicates the extent to which latent constructs differ from each other. Discriminant validity was tested by comparing the AVE for the two latent constructs with the estimated squared correlation between the two constructs (Fornell & Larcker, 1981). To demonstrate good discriminant validity, the AVE should be greater than the squared correlation for the model constructs under investigation. The estimated correlations between model constructs are provided in Table 9.3. The AVE values for “trip quality” and “future behavioral intention” were 0.56 and 0.53 respectively. The squared correlation between the two latent construct was estimated to be 0.54. Based on the evidence, the latent construct “trip quality” met the criterion for adequate discriminant validity while “future behavioral intention” nearly met the criterion. Hence it was presumed that the measurement model met discriminant validity.

Table 9.3: Estimated Correlations between Model Constructs

	Previous visits	Trip quality	Perceived value	Satisfaction
Trip quality	0.149			
Perceived value	0.096	0.21		
Satisfaction	0.07	0.21	0.51	
Future behavioral intention	0.33	0.74	0.27	0.28

9.2.3 Assessing the Structure Model Fit

Structural model tests the causal relationships between theoretical constructs specified in the model. The proposed conceptual model investigates the relationships among five constructs (Figure 9.1). Structural model fitting in Amos generate numerous model fit indices and some commonly reported model fit indices are summarized in Table 9.4.

Table 9.4: Overall Structural Model Fit Indices

Indices	Index value	Decision criteria	Decision
Chi-square test			
Chi-square	80.731	$p > 0.05$	Rejected
Chi-square /d.f.	2.181	< 5	Accepted
Goodness of fit indices			
GFI	0.973	> 0.9	Accepted
AGFI	0.952	> 0.9	Accepted
PGFI	0.545	> 0.5	Accepted
NIF	0.964	> 0.9	Accepted
Alternative indices			
CFI	0.980	> 0.9	Accepted
RMSEA	0.048	< 0.05	Accepted
RMR	0.035	< 0.05	Accepted

The Chi-square goodness of fit test (χ^2) indicated a value of 80.731 with 37 degrees of freedom (d.f.). Although non-significance is desired for χ^2 test, it was significant ($p=0.001$). The χ^2 test is sensitive to sample size and for larger samples, it usually gives significance. The χ^2 value divided by its degrees of freedom is considered a more appropriate test for larger samples (Hair et al. 2005). A χ^2 /d.f. ratio of less than five is generally accepted. For the hypothetical model, χ^2 /d.f. ratio was 2.181, and indicated a good model fit. Other goodness of fit indices and alternative indices reported in Table 9.4 indicated good model fit under their respective decision criteria. These evidences suggest that sample data and structure model has a good fit. Furthermore, modification indices suggested no significant improvements to the model and hence, this was accepted as the final model.

8.2.4 Path Analysis

Path analysis method is useful in testing theoretically meaningful relationships among variables that are often difficult to specify in regression models (Schumacker & Lomax, 2004).

Figure 9.2 shows the structural equation model with parameter estimates.

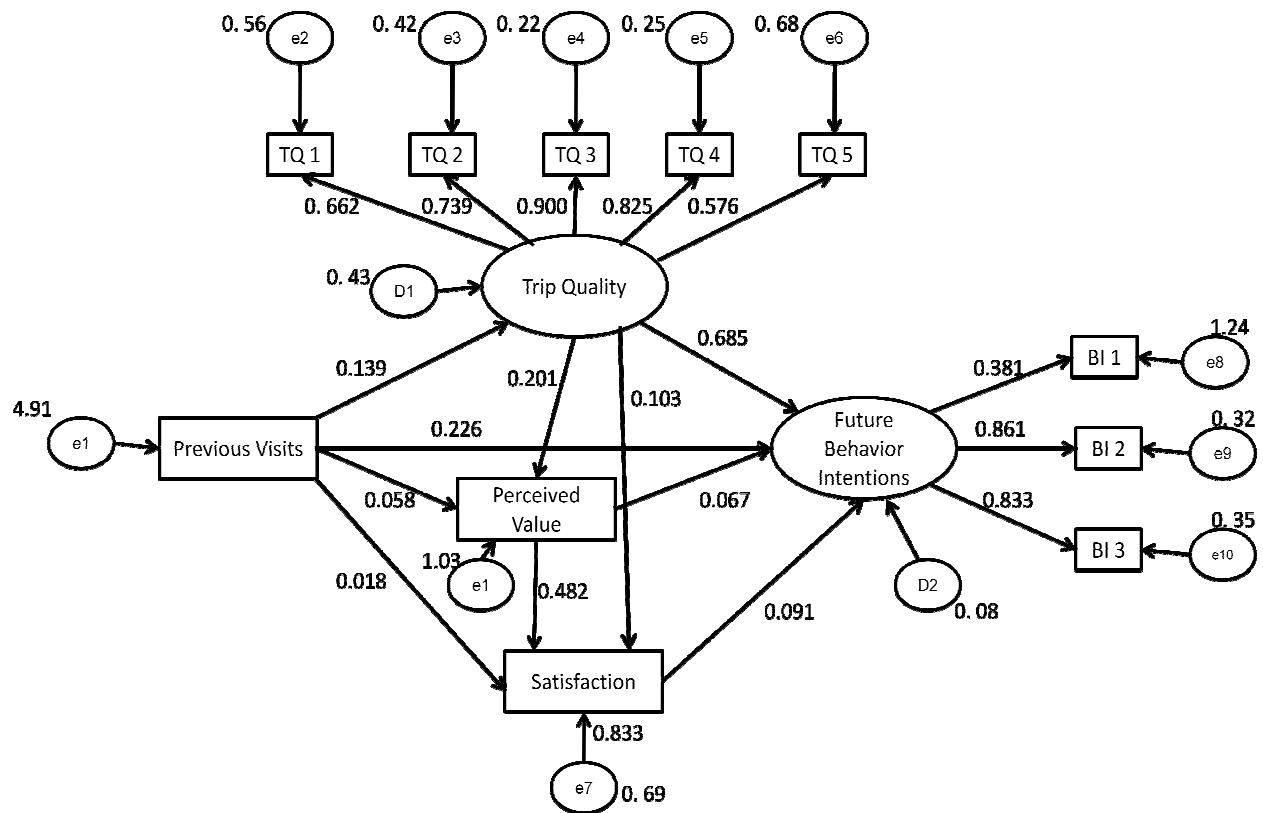


Figure 9.2: The Structural Equation Model with Parameter Estimates

A model construct can directly or indirectly influence another. Standardized coefficients on unidirectional arrows or paths as indicated in Figure 9.2 represent either the strength of direct influence of an exogenous variable on an endogenous variable, or that of an endogenous variable on another. When the influence of one variable on another is not mediated by any other variables in the model, it is called a direct effect. When one or more variables mediate the effect between two variables of interest, they are referred to as indirect effects. Direct effects and indirect effects collectively form total effects. Other than path coefficients/standardized regression weights,

Figure 9.2 further reports measurement errors for each observed variable and disturbances. The effects of measurement error terms and disturbances were initially fixed to constants.

Table 9.5 summarizes the direct, indirect and total effects between all the model constructs. Positive parameter coefficients indicated positive relationships between variables. As indicated, four paths indicated direct effects only while the rest had indirect effects involved. The total effect of previous visits on future behavioral intentions was 0.334. The positive direct effect of previous visits on future behavioral intentions was estimated to be 0.226 while the indirect effect through trip quality, perceived value and satisfaction was 0.108. The total effects of trip quality, perceived value and satisfaction on future behavioral intentions were 0.717, 0.091, and 0.110. Apart from its positive direct effect of 0.685, trip quality influence future behavioral intentions indirectly through two pathways (trip quality→ perceived value→ satisfaction→ future behavioral intentions and trip quality→ satisfaction→ future behavioral intentions). Hence previous visits and trip quality can be identified as important antecedents of future behavioral intentions to engage in ecotourism. Similarly, for the endogenous variable “satisfaction”, perceived value and trip quality seems to be the crucial predecessors with higher positive total effects.

Table 9.5: Direct, Indirect and Total Effects between Model Constructs

Path		Direct effect	Indirect effect	Total effect
Trip quality	← Previous visits	0.139	-	0.139
Perceived value	← Previous visits	0.058	0.028	0.086
Perceived value	← Trip quality	0.201	-	0.201
Satisfaction	← Previous visits	0.018	0.056	0.074
Satisfaction	← Perceived value	0.482	-	0.482
Satisfaction	← Trip quality	0.103	0.097	0.200
Future behavioral intention	← Previous visits	0.226	0.108	0.334
Future behavioral intention	← Perceived value	0.067	0.044	0.110
Future behavioral intention	← Satisfaction	0.091	-	0.091
Future behavioral intention	← Trip quality	0.685	0.031	0.717

The next step of the analysis involved hypotheses testing. Ten hypotheses were formulated in the model specification stage and these hypothetical relationships collectively formed the hypothetical model to explain the role of previous visits in predicting future behavioral intentions. Standardized path coefficients along with their t-statistics were used for hypothesis testing.

Table 9.6 summarizes the standardized path coefficients and hypothesis testing results. Significant relationships were observed between previous visits and trip quality, trip quality and perceived value, perceived value and satisfaction, trip quality and satisfaction, previous visits and future behavioral intentions, satisfaction and future behavioral intentions, trip quality and future behavioral intentions. Hence seven out of ten hypotheses tested using the structural model were accepted at $p < 0.05$ significance level (H_1 , H_2 , H_5 , H_6 , H_7 , H_8 , and H_{10}). Four paths were significant at $p < 0.001$ level. Alternative hypothesis H_3 , H_4 , and H_9 were rejected at $p < 0.05$ significance level. Accordingly, alternative hypotheses for embedded causal paths in the model H_{14} , H_{15} , and H_{16} were also rejected.

Table 9.6: Hypothesis Testing with Standardized Path Coefficients

Path			Standardized coefficient	t-statistic	p value
Trip quality	←	Previous visits	0.139	2.996	0.003**
Perceived value	←	Previous visits	0.058	1.346	0.178
Perceived value	←	Trip quality	0.201	4.290	0.000**
Satisfaction	←	Previous visits	0.018	0.476	0.634
Satisfaction	←	Perceived value	0.482	12.500	0.000**
Satisfaction	←	Trip quality	0.103	2.491	0.013*
Future behavioral intention	←	Previous visits	0.226	5.275	0.000**
Future behavioral intention	←	Perceived value	0.067	1.632	0.103
Future behavioral intention	←	Satisfaction	0.091	2.195	0.028*
Future behavioral intention	←	Trip quality	0.685	7.377	0.000**

* $p < 0.05$ and ** $p < 0.01$

The magnitude of standardized coefficient reflects the strength of relationship.

Accordingly, trip quality had the strongest significant relationship with future behavioral intention (standardized coefficient = 0.685, $p < 0.001$). Perceived value also showed a strong positive relationship with satisfaction (standardized coefficient = 0.482, $p < 0.001$). In addition, relationships between trip quality and perceived value, and previous visits and future behavioral intentions showed relatively strong positive relationships. In Figure 9.3, paths indicated in solid continuous arrows reflect significant relationships, while paths indicated in dashed lines reflect deleted paths. In essence, Figure 9.3 provides evidences for four important pathways where previous visits influence future behavioral intentions:

- (i) Previous visits → trip quality → perceived value → satisfaction → future behavioral intentions
- (ii) Previous visits → trip quality → satisfaction → future behavioral intentions
- (iii) Previous visits → trip quality → future behavioral intentions
- (iv) Previous visits → future behavioral intentions

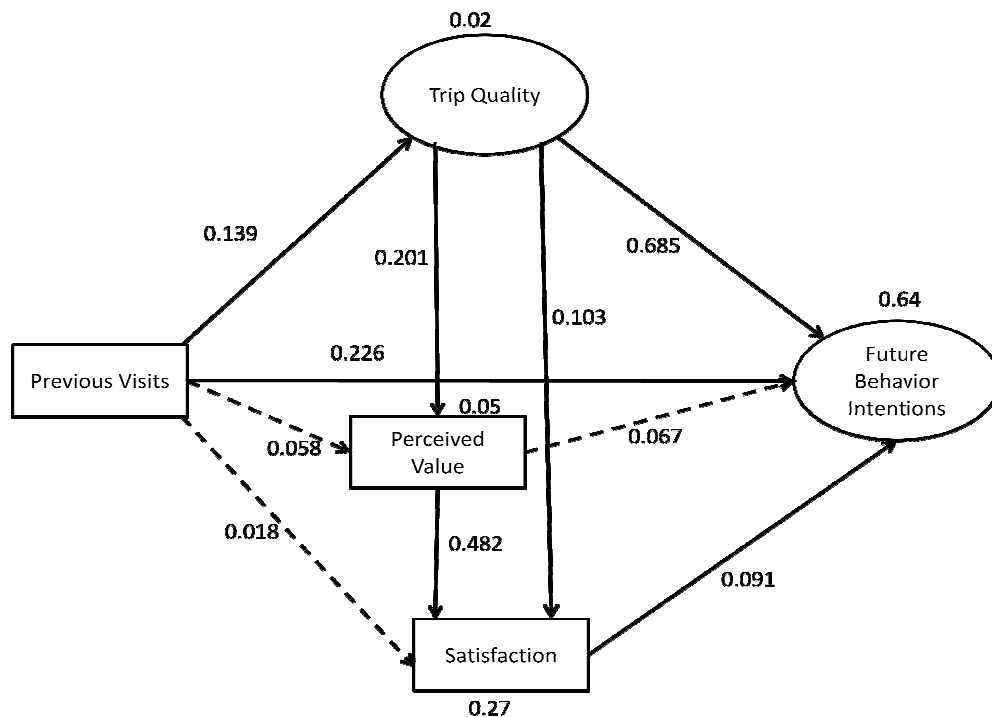


Figure 9.3: Path Diagram with Causal Relationships

Furthermore, squared multiple correlations associated with endogenous model constructs are also indicated. Accordingly, previous visits, trip quality, perceived value, and satisfaction explain 64% of the variance in future behavioral intentions. This suggests that the proposed model satisfactorily explains future behavioral intentions using its predictors.

9.3 Discussion

The structural model developed in this study examined the ecotourist behavior by exploring causal relationships among previous visits, trip quality, perceived value, satisfaction, and future behavioral intentions. Interrelationships among quality, satisfaction, and behavioral intentions have been previously examined by numerous travel research scholars (Compton & Love, 1995; Baker & Compton, 2000; Tian-Cole et al., 2002). The relationship between previous experiences/visits and future behaviors is also well documented (Morwitz, 1997; Ouellette & Wood, 1998). This study investigated the mediating role of trip quality, perceived value and satisfaction in the relationship between previous visits, and future behaviors. The model expands the understanding of antecedents of future behavioral intentions, and especially contributes to consumer research in ecotourism from the theoretical perspective.

An important finding of this study was that trip quality tends to highly influence future behavioral intentions. The direct influence of trip quality was found to be much stronger than the indirect influence through perceived value and satisfaction. These results contradict the findings of Chen and Tsai (2007) who reported insignificant or uncertain effect of trip quality on future behavioral intentions. In this empirical model, the trip quality was considered analogous to “quality of performance” described in Baker and Crompton (2000), and only the attributes that are under the control of ecotourism provider/operator were measured in the perspective of visitor. Ecotourism being a unique and knowledgeable form of tourism, one can expect trip

quality to be less important in predicting future behaviors. For instance, hardcore ecotourists are more demanding for experience with wildlife and nature, and less demanding for service quality or comfort (McKercher, 2001). For hardcore ecotourists, satisfaction derived from participating in ecotourism activities is of greater importance than the satisfaction derived from superior service quality. However, quality attributes are more important for causal ecotourists who in general, account for the greater share of ecotourism market. In the previous chapter, profiling of visitors to forest-based attractions in Sri Lanka revealed that the majority falls in to the category of soft-core or causal ecotourists. This may explain the strong positive relationship observed between trip quality and future behavioral intentions.

In this study, the attributes measured to determine trip quality included conservational or educational activities, staff/volunteers, amenities/infrastructure, cleanliness and quality of information. Wildlife observation which may be an important factor was not included as an attribute since in most circumstances it is out of the control of ecotourism operator, especially in self-guided tours. On the other hand, as suggested by Tian-Cole et al. (2002), nature or wildlife observation is so pervasive in visiting a forest-based attraction that it permeates into all aspects of the experience. The selected attributes represented essential components of a typical ecotourism product. Even the attribute “amenities/infrastructure” can be referred to access roads, bird watching platforms, educational facilities and eco-lodges etc. in the context of ecotourism. Hence it is likely that, even for hardcore ecotourist, trip quality can serve an important precursor of future behavioral intentions.

The observed strong positive relationship between previous visits and future behavioral intentions in the model supports Hilgard and Bower’s concept of “generalization phenomenon” or the “carryover effect” in making similar choices (Hilgard & Bower, 1966, in Pearce,

1982). Such a relationship between previous visits and future behaviors has been documented in previous works (Williams et al., 1992; Morwitz, 1997; Ouellette & Wood, 1998; Yuan et al., 2008). Previous visits having direct and indirect effects on future behavioral intentions through quality-satisfaction domain further buttresses Pearce's (1982) argument of tourism experience percolating beyond a particular tourism destination and having impacts on pre-visit, visit and post-visit evaluation stages. Relatively strong positive relationships observed between trip quality and perceived value, as well as between perceived value and satisfaction in the model further reconfirms the moderating role of perceived value between service quality and satisfaction established by previous works (McDougall & Levesque, 2000; Gallarza & Saura, 2006, Lee et al., 2007). The tested model further emphasizes perceived value as a critical antecedent of satisfaction.

According to the model, perceived value showed no significant relationship with future behavioral intentions. This may be explained by visitors to forest-based attractions having environmentally oriented attitudes, and are more interested in having a quality experience. It appears that although perceived value plays a mediatory role between trip quality and overall satisfaction, deriving a better value for money may be secondary. Previous visits also showed a significant relationship with trip quality. This may be explained by visitors with previous experiences of visiting forest-based attractions in Sri Lanka tend to perceive that current trip would provide better quality or experience with ample opportunities to observe wildlife.

The study findings have several implications for recreational managers and ecotourism operators. In confirmatory with past tourism studies (Chen & Tsai, 2007; Lee et al., 2007; Yuan et al., 2008) the present study suggests previous visits, trip quality, satisfaction and perceived value as important predictors of ecotourists' intention to revisit and recommend the destination

as well as their propensity to engage in ecotourism in the future. Among these, trip quality is of special importance. In the context of forest-based recreation in Sri Lanka, recreational managers and ecotourism operators can better predict ecotourists' future revisit, recommend and participation intentions by assessing their subjective judgment of the trip quality. Visitors' revisit and recommendation intentions directly affect the ecotourism destination of interest, while visitor's intentions to involve in ecotourism in the future affect the ecotourism industry as a whole.

The model suggests that trip quality is an antecedent of perceived value, while perceived value significantly influences satisfaction. This calls for recreational managers and ecotourism operators to enhance the quality of their ecotourism products in such a way to give better value for the price. Enhancing trip quality may require building infrastructure to facilitate wildlife observation, improving on-site education, interpretation, information, and introduction of ecotourism activities. Pricing strategies for ecotourism products should consider creating better value for customers. Ecotourism operations that provide quality experiences at a good price are likely to have satisfied and growing visitor base. In a typical ecotourism experience, the extent to which an ecotourist can observe the wildlife or nature without disturbances can have stronger effect on overall satisfaction than anything else, especially for a hardcore ecotourist. Hence, incorporating effective wildlife management and visitor controlling strategies are also important.

CHAPTER 10: GENERAL DISCUSSION AND CONCLUSIONS

Developing ecotourism in general has several broad implications. Since local communities are involved in planning and implementation of ecotourism projects, it will be a solution for rural unemployment and poverty. Ecotourism involves numerous stakeholders, and any benefit arising from ecotourism will be spread through a wider section in the society. Apart from these broader impacts, specific research implications are discussed in this chapter along with major findings.

10.1 Findings to Research Hypotheses and Their Implications

This research consisted of three components. The first component attempted to profile visitors to forest-based attractions based on their motivations and behaviors. The other two components dealt with developing two models; an ecotourism behavior model in forest-based recreation areas, and a model to explain the role of previous visits or experiences with ecotourism in future behavioral intentions. Major findings to research hypotheses and their potential implications are discussed for each research component separately.

10.1.1 Developing Motivational and Behavioral Profiles

The research question “Is it possible to distinguish different types of visitor groups based on their motivational and on-site behavioral characteristics?” predominantly guided this section of the study. Defining the ecotourist based on type of sites visited or on-site activities criteria have been contested by some authors (Tao et al., 2004; Kerstetter et al., 2004). Supporting this view, results of this study identified four different types of tourists based on their behavioral and motivational characteristics i.e. ecotourists, picnickers, egoistic tourists, and adventure tourists. The motivations of travel to forest-based attraction for these groups vary considerably. Majority of individuals visiting forest-based attractions in Sri Lanka do not fall within the boundaries of

ecotourist based on their motivations of travelling. This underlines the inappropriateness of defining ecotourists based on type of sites visited or on-site activities criteria.

Research findings suggest that forest-based sites in Sri Lanka attract a sizeable ecotourism market (28% of the sample). A typical individual in the ecotourists segment in Sri Lanka represents a relatively young, recent high-school or university graduate or a university student. Hence the ecotourist segment is characterized by well-educated but low income nature and found to be unattractive businesswise. However, this can be seen as a positive for the ecotourism industry in the long run as it hints a tendency among young generation to laud ecotourism as an outdoor activity that entails both the passion for nature and learning. Furthermore these individuals are likely to have better employment opportunities in the future with their higher education levels. Although ecotourists segment is not the most lucrative segment at present, recreational managers should value them because of their environmentally friendly behavior, willingness to voluntarily participate in conservation activities as well as their potential to serve as “mediators of change” in educating other less-desirable visitor groups. A high income sub segment exists inside the ecotourists segment although it is not sizeable enough to target.

Present study results indicated a growing trend among individuals, especially among domestic travelers to use visiting a forest-based attraction as an opportunity to spend time with their families or friends. These individuals represented the largest visitor segment identified as “picnickers”, which accounted for 40% of the sample. Therefore, this is the dominant visitor type to forest-based attractions in Sri Lanka. Since their motives and behaviors are not entirely compatible with ecotourism, park managers should take necessary measures to change their attitudes and behaviors in accordance with ecotourism.

The segment identified as “egoistic tourists” seems to be the ideal market segment to target from both environmental sustainability and business perspectives since it included high income, well-educated individuals with environmentally desired behaviors. For recreational managers and ecotourism operators, this creates new prospects for revenue generation by identifying the activities that egoistic tourists are interested in, and providing those recreational opportunities. In addition, enhanced interpretation, information delivery, and education would help these visitors to build positive environmental attitudes and enthusiasm.

Other Implications of developing motivational and behavioral profiles of visitors include establishing tourist access zones based on segment profiles. Different tour packages can be arranged based on visitor’s purpose of visit, and the nature of experience they desire. Hardcore tourists can be allowed to more undisturbed areas of forests for unique experience with nature, while soft or passive eco-tourists should be allowed only on buffer zones, or relatively disturbed zones, but with sufficient recreational opportunities. Different pricing strategies can be used for different segments.

10.1.2 Developing an Ecotourism Behavioral Model

From the proposed ecotourism behavior model, it is attempted to describe one’s intention or participation in ecotourism using sociological and psychological dimensions. The proposed model fitting satisfactorily to the data suggests that knowledge, attitudes, social influence, and perceived behavioral control mediated by satisfaction determine a person’s ecotourism behavior.

The model suggests that knowledge is an important direct precursor of behavioral intention and behavior. Knowledge is also a key variable in attitude formation, which also has an indirect effect on behavior. The revealed relationship has several implications. Positive environmental attitudes will lead to environmental friendly behavior. Ecotourism is particularly

known as a knowledgeable form of travel to nature. Given that better knowledge on environment and ecotourism lead to environmentally responsible leisure behavior, onsite education and environmental interpretation should be viewed as an important component of any forest-based tourist attraction. Although the majority of visitors to eco-destinations are passive or soft ecotourists, continuous onsite education and interpretation will encourage visitor's environmentally responsible behavior, regardless of which visitor segment they belong to. State agencies managing forest-based ecotourism destinations in Sri Lanka should take necessary measures to strengthen education and interpretation services at destinations through recruiting local tour guides, proper training of interpreters, and making available educational materials (such as booklets and brochures on key environmental features of the destination) and information centers on sites.

The hypothesis of “social influence positively and directly affects satisfaction and affects behavioral intention and behavior indirectly” was accepted in the model. The model component social influence essentially looked at how the society influences a person's environmentally responsible leisure behavior. The idea is that if a person's close relatives, significant others, and societal beliefs approve a certain behavior, the individual is likely to engage in that behavior based on his motivation to comply. If the trend in the society is to be more environmentally oriented, an individual will also be indirectly forced to comply with popular social beliefs. This suggests strong environmental awareness activities aimed at building positive environmental ethics in the society would bring out individual environmentally responsible behaviors, even that person is less knowledgeable about the environment. Hence public awareness on environment, ecotourism, and its benefits is important. State and private sector tourism operators/institutes

should communicate the environmental message in their tourism advertising campaigns, as well as in different stages of the tourism value chain (eg: travelling, accommodation etc.).

In addition, social influence component in the model further suggests that if the behavior is endorsed by social institutions or popular opinion, an individual is likely to engage in that behavior. In the environmental and tourism context, an ideal example would be the environmental certification. At present, sustainable tourism certification systems such as Tourism Sustainability Council (TSC) and Green Globe certify tourism operations and hotels against environmental performance standards. Such endorsed operations will have a favorable position in environmentally conscious consumer minds, giving them a competitive advantage in the industry. Therefore, steps should be taken to introduce and popularize environmental certification in the tourism industry to encourage sustainable tourism practices.

Perceived behavioral control essentially takes into account the internal and external resources a person has to engage in a particular behavior. It shows how a behavioral intention is affected by an individual's perceptions on his/her ability to perform a given behavior. The model confirmed the hypothesized positive direct effects of perceived behavioral control on behavioral intentions and behavior, as well as its indirect effect through satisfaction. This also has many implications for destination managers. It has been observed that a person's environmental or ecological behavior is significantly affected by control factors such as money, time, and ability. For example, even if a person has favorable environmental attitudes and social pressure, he/she may not engage in recycling if it is prohibitively costly to implement. In the context of promoting ecotourism, it is necessary to bring critical controlling factors into a manageable level so that the market share could be expanded. Ecotourism is typically designed for small groups who are less demanding for facilities. Accommodations at eco-lodges are comparatively less

expensive. These attributes of ecotourism should be effectively conveyed to target markets. Different ecotourism packages should be designed to fit different budgets, time constraints, as well as different physical ability levels. In marketing terms, this calls for ecotourism product differentiation. Such customized tour packages will lead to increased satisfaction, and this will in turn result in repeated visitations and destination recommendations to others.

10.1.3 The Model to Explain the Role of Previous Visits on Future Behavioral Intentions

Past visits, satisfaction, trip quality, and perceived value attributes are often related to post consumptive evaluation of a product or a service. According to the model, higher satisfaction and perceived values influence positive behavioral intentions. Given such empirical relationship, it is important to provide an optimum ecotourism experience to customers because their future behavioral intentions are affected by satisfaction and perceived value. The impact of perceived value on behavioral intentions through satisfaction suggests that ecotourism experience should worth the money spent by participants. Therefore, pricing strategies for ecotourism products should consider creating better value for customers. Since variety of factors from travelling to onsite experiences can affect satisfaction, related implications are to improve infrastructure such as roads (both onsite and offsite) and accommodation, measures to ensure visitor safety, visitor controlling policies (because one's experience may be negatively affected if the place is overcrowded with incompatible travelers), as well as develop onsite interpretation, and services through undertaking proper staff training.

An important finding from the empirical model is that trip quality strongly influences future behavioral intentions. In the context of forest-based recreation in Sri Lanka, recreational managers and ecotourism operators can better predict ecotourists' future revisit, recommend, and participation intentions by assessing their subjective judgment of the trip quality. Given the

empirical relationships among previous visits, trip quality, perceived value, and satisfaction, ecotourism operations that provide quality experiences at a good price are likely to have satisfied and growing visitor base.

10.2 Study Limitations and Lines for Future Research

In this study, the data collection was carried out over a four month period from October to January in 2009-2010. There was a need for accelerated data collection due to time constraints. Hence the sample captured in this study represents only a section of the visitors to forest-based recreational sites in Sri Lanka. Furthermore, most of the data came from interviews conducted during the period December to January. Visitation rates were particularly high in December to January due to the holiday season. Data collected at least in a one year period would have yielded a more accurate cross-section of visitors to forest-based attractions in Sri Lanka. Such information is especially useful in visitor profiling studies to develop accurate visitor profiles for marketing purposes. Therefore, further research is needed with long term data to verify the compatibility of visitor profiles developed in the present study. Since long term data depicts a more accurate and diverse cross-section of visitors, ecotourism behavior modeling with long term data will further improve their accuracy of predictions.

Foreign visitors are significantly important for wildlife parks and forest-based attractions in Sri Lanka, especially in terms of revenue. The sampling technique employed in the present study did not capture enough foreign visitors, and some of the foreign visitors intercepted were not interviewed due to the language barrier. For the present study, developing questionnaires in multiple languages was prohibitively expensive. Due to the low number of foreign respondents, their demographic information such as income was not used since they exhibited large deviations from income data for local visitors. Future research can be conducted with surveys printed in multiple languages to capture a better cross-section of foreign visitors to forest based attractions.

Furthermore, present study revealed that ecotourists in Sri Lanka tend to vary significantly from those in Europe or North America in terms of demographics, as well as in attitudes. This may also signify the effect of cultural factors on ecotourism behavior. Hence, it is recommended to develop separate visitor profiles for foreign visitors so that different marketing strategies can be adopted for foreigners and locals according to their characteristics.

A systematic random sampling technique was employed in this study and every one-in-three visitors leaving the park were administered the questionnaire. Adoption of a shorter sampling interval was necessary to collect sufficient data during the four month period. One possible consequence of adopting a shorter sampling interval is that it can capture members of the same visitor group with more or less similar interests. Hence it is recommended in future studies to increase the sampling interval to capture a more diverse sample.

Proposed models in this study were developed to explain the ecotourist behavior. However, information from all visitors who visited study sites was used in behavior modeling. Hence, they essentially explain the behavior of individuals visiting forest-based attractions in Sri Lanka, rather than the behavior of true ecotourists. Numerous ecotourism scholars have contested defining ecotourists based on the type of sites visited or on-site activities criteria (Tao et al. 2004, Kerstetter et al. 2004). Although behavior profiling procedure was successful in identifying the ecotourist segment based on motivations and on-site behaviors, number of individuals fell into the category was not sufficient to be used in SEM analysis. Future studies can be conducted to better explain genuine ecotourist behavior by initially developing visitor profiles with sufficiently large samples and then testing the models on ecotourist segment. Similarly, the applicability of models to explain the behavior of other visitor segments can also be tested.

Present study was solely focused on visitors to forest-based attractions in Sri Lanka. In fact most studies on ecotourism have been based on national parks or wildlife refuges (Uysal et al., 1994; Tian-Cole et al., 2002; Kerstetter et al., 2003; Lee, 2007). The concept of ecotourism goes beyond forest-based sites, and may include any nature-based or culturally significant destination. Future studies can include other ecotourism operations associated with marine and other aquatic ecosystems, as well as ecotourism operations focused on rural and cultural attractions. However, this study results can be generalized satisfactorily for visitors to forest-based attractions since the study sites selected included variety of forest types.

In the proposed ecotourism behavior model, behavioral intentions, satisfaction, attitudes, perceived behavioral control, social influence, and knowledge explained 33% of the variance in ecotourism behavior. This indicates that other factors not included in the model may also contribute in forming behaviors. Therefore, future research may incorporate factors such as respondents' personal characteristics, emotional factors, destination image, as well as formers of attitudes, social influence and perceived behavioral control suggested in TPB model.

The model developed to explain the effect of past visits on future behavioral intentions on the other hand showed a satisfactory performance with predictive model constructs accounting 64% of the variance in future behavioral intentions. In this hypothesized model, satisfaction and perceived value were measured in single overall measures. There's an ongoing debate on the appropriateness of using a single overall measure rather than multiple items to measure satisfaction and perceived value. Some studies have successfully utilized multiple items to measure satisfaction (Tian-Cole et al., 2002). Future studies can also experiment with improving the proposed model by using multiple items to measure satisfaction and perceived value.

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APPENDIX: SURVEY INSTRUMENT



Survey of Visitors to Forest-based Ecotourism Destinations in Sri Lanka



The purpose of this research is to identify factors that influence a person to participate in ecotourism and the impact of those factors on the actual ecotourism behavior among travelers visiting forest-based ecotourism destinations in Sri Lanka. Your participation is important to the success of this study. Participation is voluntary and your responses will be kept confidential.

Please use the information pertaining to your current trip to answer questions in this survey.

SECTION 1: Understanding of ecotourism concepts (Q1-6)

Please circle the response which best indicate your level of agreement to the following statements.

	Strongly disagree		Neither agree nor disagree				Strongly agree
Ecotourism promotes sustainability.	1	2	3	4	5	6	7
Ecotourism minimizes the impacts of tourism activities on the natural environment.	1	2	3	4	5	6	7
Ecotourism provides positive experiences for both visitors and hosts.	1	2	3	4	5	6	7
Ecotourism provides financial benefits and empowerment for local people.	1	2	3	4	5	6	7
Ecotourism builds environmental and cultural awareness and respect.	1	2	3	4	5	6	7
Ecotourism provides direct financial benefits for conservation.	1	2	3	4	5	6	7

SECTION 2: Behavioral beliefs (Q 7- 11)

Please circle the response which best indicate your level of agreement. I believe;

	Strongly disagree			Neither agree nor disagree		Strongly agree	
Participation in ecotourism would help me better understand the natural environment.	1	2	3	4	5	6	7

Participation in ecotourism would contribute to sustainable development.	1	2	3	4	5	6	7
Ecotourism would give me the opportunity to observe flora and fauna in detail.	1	2	3	4	5	6	7
Participation in ecotourism gives me the opportunity to contribute to conservation of nature.	1	2	3	4	5	6	7
Participating in ecotourism is a way to show my environmentally responsible behavior.	1	2	3	4	5	6	7

SECTION 3: Social influence on behavior (Q12-20)

Please mark the response which best indicate how you feel about following statements (skip the statements that are not applicable for you):

	Strongly disagree			Neither agree nor disagree			Strongly agree
My colleagues would think I should participation in ecotourism	1	2	3	4	5	6	7
In general, my decision to participate in ecotourism is greatly affected by my colleagues.	1	2	3	4	5	6	7
My friends would think I should participation in ecotourism	1	2	3	4	5	6	7
In general, my decision to participate in ecotourism is greatly affected by my friends.	1	2	3	4	5	6	7
My family members would think I should participation in ecotourism.	1	2	3	4	5	6	7
In general, my decision to participate in ecotourism is greatly affected by my family.	1	2	3	4	5	6	7
People who are important to me would approve participation in ecotourism	1	2	3	4	5	6	7
In general, my decision to participate in ecotourism is greatly affected by people who are important to me	1	2	3	4	5	6	7
The popular opinion in the society is to choose ecotourism	1	2	3	4	5	6	7

SECTION 4: Controlling factors & Attitudes (21-34)

Please circle the response which best indicate your level of agreement for the following statements:

	Strongly disagree			Neither agree nor disagree			Strongly agree
Participation in ecotourism is expensive	1	2	3	4	5	6	7
My income level affects my ability to participate in ecotourism	1	2	3	4	5	6	7
Participating in ecotourism is time-consuming	1	2	3	4	5	6	7
The spare time I have affects my ability to participate in ecotourism	1	2	3	4	5	6	7
Participating in ecotourism demands stamina	1	2	3	4	5	6	7
My stamina affects my ability to participate in ecotourism	1	2	3	4	5	6	7
Availability of information on travel destination is important in participating in ecotourism	1	2	3	4	5	6	7
Information availability on the destination affects my decision to participate in ecotourism	1	2	3	4	5	6	7
It is important to conserve the natural heritage of the places I visit	1	2	3	4	5	6	7
Participation in ecotourism is environmentally friendly	1	2	3	4	5	6	7
Participation in ecotourism is an educational experience	1	2	3	4	5	6	7
Participation in ecotourism is enjoyable	1	2	3	4	5	6	7
Participation in ecotourism is an interesting activity	1	2	3	4	5	6	7
Ecotourism is an affordable form of travel	1	2	3	4	5	6	7

SECTION 5: Ability to perform the behavior (Q35-38)

Please select the most appropriate response for you for the following statements. I have;

	Strongly disagree			Neither agree nor disagree			Strongly agree
Enough time to participate in ecotourism	1	2	3	4	5	6	7
Enough money to participate in ecotourism	1	2	3	4	5	6	7
Enough stamina to participate in ecotourism	1	2	3	4	5	6	7
Enough information to participate in ecotourism	1	2	3	4	5	6	7

SECTION 6: Quality, Satisfaction & Perceived value (Q39-46)

Please select the most appropriate response for the following statement.

	Very dissatisfied			Neither satisfied nor dissatisfied			Very satisfied
Overall satisfaction of the ecotourism experience	1	2	3	4	5	6	7

Please select your level of agreement for the following statements.

	Strongly disagree			Neither agree nor disagree			Strongly agree
This tourism product offered good value for money	1	2	3	4	5	6	7
This tour experience worth the time I spent	1	2	3	4	5	6	7

Please rate following attributes at the ecotourism destination you visited today.

	Very Poor			Average			Excellent
Education and Conservation	1	2	3	4	5	6	7
Staff/Volunteers	1	2	3	4	5	6	7
Amenities/infrastructure	1	2	3	4	5	6	7
Cleanliness	1	2	3	4	5	6	7
Information	1	2	3	4	5	6	7

SECTION 7: Future behavioral intentions (47-52)

Circle the response which best indicate how you feel about following statements.
Your

	Very low						Very high
Interest to participate in ecotourism	1	2	3	4	5	6	7
Willingness to participate in ecotourism in one year	1	2	3	4	5	6	7
Likelihood of engaging in ecotourism in one year	1	2	3	4	5	6	7
Willingness to become a member of an ecotourism organization or an environmental organization	1	2	3	4	5	6	7
Likelihood of recommending the destination to others	1	2	3	4	5	6	7
Likelihood of revisiting this destination in the future	1	2	3	4	5	6	7

SECTION 8: Actual onsite behavior (Q53-61)

Please select the most appropriate response for you.
During the tour, I

	Strongly disagree			Neither agree or disagree			Strongly agree
Followed the instructions/guidelines provided before the tour	1	2	3	4	5	6	7
Observed nature and wildlife thoroughly	1	2	3	4	5	6	7
Stayed at an eco-lodge/eco-friendly hotel	1	2	3	4	5	6	7
Listened and paid attention to the interpretation	1	2	3	4	5	6	7
Wore clothes that were appropriate for a forest ecosystem	1	2	3	4	5	6	7
Did not feed or disturbed wildlife	1	2	3	4	5	6	7
Did not damage plants	1	2	3	4	5	6	7
Helped to maintain the local environmental quality	1	2	3	4	5	6	7
Supported the local community through spending money at local stores	1	2	3	4	5	6	7

SECTION 9: Trip information (Q62-78)**What was the motivation of your trip? Please indicate your level of agreement.**

	Strongly disagree			Neither agree or disagree			Strongly agree
To be in a natural setting	1	2	3	4	5	6	7
Observed nature and wildlife thoroughly	1	2	3	4	5	6	7
To observe the ecological landscape	1	2	3	4	5	6	7
To be with my (our) family or friends	1	2	3	4	5	6	7
To improve my physical health	1	2	3	4	5	6	7
To use free time	1	2	3	4	5	6	7
Did not damage plants	1	2	3	4	5	6	7
To learn more about new things or nature	1	2	3	4	5	6	7
To get away from crowd and noise	1	2	3	4	5	6	7
To memorize the past experience	1	2	3	4	5	6	7
To educate the children	1	2	3	4	5	6	7
To be with others who enjoy the same	1	2	3	4	5	6	7
To Search for self ego/gratification	1	2	3	4	5	6	7
To have an adventurous experience	1	2	3	4	5	6	7
To improve my physical health	1	2	3	4	5	6	7
To conduct a survey or research	1	2	3	4	5	6	7
To pursue the fashion/following the trend	1	2	3	4	5	6	7

What's the duration of this trip?

- One day ☐
- Two days ☐
- Three days ☐
- More than three days ☐

How often do you engage in ecotourism?

- Less than once a year ☐
- Once a year ☐
- Twice a year ☐
- More than twice a year ☐

How much did you spend during this trip (please provide a rough estimate per person)?

- Less than Rs. 1000 ☐
Rs. 1001-3000 ☐
Rs. 3001-5000 ☐
Rs. 5001 or more ☐

How many times have you visited this ecotourism destination? _____

Have you visited any other forest-based ecotourism destinations in Sri Lanka? Yes
No

If YES, please indicate the number of visits:

SECTION 10: Demographics

Please circle/check the appropriate.

Gender: Male Female
Marital status: Married Unmarried Divorced Separated Never married
Age:

- 18 - 25 years ☐
26 – 35 years ☐
36 – 45 years ☐
46 or older ☐

Your highest level of education:

- High-school or below ☐
Bachelors' degree ☐
Some graduate education ☐
Graduate degree ☐

Your monthly income (please indicate the currency):

Your country of residence:

Your occupation (eg. Medical doctor, teacher, student):

Thank you for taking time to complete this questionnaire. Please return it to the hotel management/front desk or to your tour operator/organizer.

VITA

Kushil Priyan Perera was born in 1977 in Colombo, Sri Lanka. After successfully completing the General Certificate of Education Advanced Level examination (GCE A/L), he was selected to follow Forestry and Environmental Science Special Degree at the University of Sri Jayewardenepura, Sri Lanka. For his undergraduate thesis, Priyan investigated some wood properties of three plantation timber species in Sri Lanka. He received the Bachelor of Science Forestry and Environmental Science degree on August 2004 with First Class honors. In the Fall of 2005 he enrolled at Louisiana State University (LSU) to pursue a master's degree in forestry, concentrating on forest products marketing. While progressing towards the completion of his master's degree in forestry, Priyan joined the Department of Environmental Studies at LSU to pursue another master's degree (non-thesis) in environmental sciences. After completing the master's degrees in forestry in 2008, he began perusing the doctoral degree in forestry. Priyan graduated with a master's degree in environmental sciences in 2009. His doctoral dissertation research is focused on modeling various antecedents of ecotourism behavior and profiling ecotourists on motivational and behavioral grounds.