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Effects of ecotourist pre-purchase and external information search behaviors and strategies on forest-based ecotourism travel decisions in Sri Lanka

Rangika T. Perera

Louisiana State University and Agricultural and Mechanical College

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**EFFECTS OF ECOTOURIST PRE-PURCHASE AND EXTERNAL
INFORMATION SEARCH BEHAVIORS AND STRATEGIES ON
FOREST-BASED ECOTOURISM TRAVEL DECISIONS IN SRI LANKA**

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

Rangika T. Perera

B.Sc., University of Sri Jayewardenepura, Sri Lanka, 2005

M.Sc., Louisiana State University, 2008

May 2011

DEDICATION

I would like to dedicate this dissertation to my beloved parents for their unconditional love and support.

Second of all, my dedication goes to my research advisor, Dr. Richard P. Vlosky, who supported me in many ways to make this a success.

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ABSTRACT

In the 1980s, the term *ecotourism* emerged as a direct result of acknowledgment and reaction by travelers to global ecological practices. In reality, the concept of ecotourism carries wide applications, particularly for bio-diverse countries with unique natural attractions. Sri Lanka qualified as such a country, presenting a significant tourism resource base, that display natural and cultural phenomena, including forests, waterfalls, mountains, exotic flora and fauna, and a heritage equally as ancient and as rich as the Greeks and Romans.

Ecotourism in today's dynamic global environment demands that ecotourism operators face a keenly competitive market in order to present an appealing ecotourism products and services to diverse customers. Therefore, an improved understanding of how tourists acquire knowledge about a destination and its services is important for marketing management decisions, designing of effective communication campaigns, and efficient service delivery.

Consumer pre-purchase information search may be identified as one of the most compelling research fields in consumer behavior. However, scant evidence exists on how information is actually processed, prior to making travel decisions. This proposed model examines the causal relationship among information searching, information processing, destination image, and travel-related search outcomes pertaining to forest-based tourism, using a Structural Equation Modeling approach. The proposed model offers special attention to travelers' information processing consequently influencing travel related outcomes.

In addition, this study identified four distinct market segments, based on ecotourists' utilization of external information sources in visiting forest-based tourism destinations in Sri Lanka: impulsive searchers, active seekers, passive seekers and, provider dependents. In the context of ecotourists actual travel related decisions, such as destination choice, estimated

expenses and the length of stay at the destination, study findings suggest that provider dependents, followed by impulsive searchers are the most productive segments for destination marketers. Service providers are the primary source of information for provider dependents, while impulsive searchers tend to acquire travel related information through word of mouth communication.

CHAPTER 1: INTRODUCTION

In the 1980s, the term *ecotourism* emerged as a direct result of acknowledgment and reaction by travelers to global ecological practices. Ecotourism focuses on the concept of nature-based elements in travel activities, as well as an increased desire to minimize adverse impacts of tourism to the environment. Further, ecotourism was encouraged by extant, concrete evidence that consumers were shifting away from mass tourism. In fact, consumers were seeking experiences of a more individualistic and enriching nature (Wight, 1993; Steward & Sekartjajrarini, 1994; Wall, 1997; Diamantis, 1999). In reality, the concept of ecotourism carries wide applications, particularly for bio-diverse countries with unique natural attractions.

Sri Lanka qualified as such a country, presenting a significant tourism resource base, that display natural and cultural phenomena that include forests, waterfalls, mountains, exotic flora and fauna, and a heritage equally as ancient and as rich as the Greeks and Romans (De Silva, 2000). According to Weaver (2001), publicly managed protected areas provide a vast setting for ecotourism-related activities. The Department of Forest Conservation and the Department of Wildlife Conservation in Sri Lanka alone administer to 501 protected areas. The extent of total, protected area encompasses a staggering 1,767,000 ha, which accounts for 26.5 percent of total land area.

Obviously, Sri Lanka maintains a relatively high percentage of protected land, as compared to other countries in the world. In addition, the country constitutes the greatest protected areas in Asia (wildlifesrilanka.org, 2010). These high-profile protected areas of Sri Lanka considered icons in the sphere of tourist attractions. As an example, Sinharaja primary rainforest, which has been designated a biosphere reserve, as well as a world heritage site. To enhance its accessibility, the small size of the island affords an open door to diverse attractions.

Although the country carries the potential to develop ecotourism, related studies and destination promotion attempts specific to the country have been limited in the tourism marketing literature, particularly in ecotourism. Ecotourism in today's dynamic global environment demands that ecotourism operators face a keenly competitive market in order to present an appealing product and services to diverse customers (Wight, 1993; Steward & Sekartjajrarini, 1994; Wall, 1997; Diamantis, 1999; Higham & Carr, 2002). A sound marketing orientation, specifically tailored is very important for successful marketing of tourism destination (Gronflaten, 2000). One crucial concept of sound marketing consists of an exchange of information regarding a particular product or service (Fesenmaier & Vogt, 1992). According to Gronflaten (2005), travelers tend to gather and utilize information relating to different phases of an entire trip. As a result, efficient information sources are found to play a crucial role in tourism destination marketing. Information for each available alternative and accompanying attributes carry the capability to maximize the final decision of a rational consumer (Pan & Fesenmaier, 2001; Assael, 2004). In order to realize the full potential of tourism marketing, those who market destinations should understand the information demands of various travelers, as well as the sources these travelers search for information.

The objective of this study is to develop an empirical model to correctly identify pre-trip informational search behaviors of eco-travelers as well as define market segments based on traveler behavior relating to information search. In particular, this study will examine these issues as they relate to Sri Lanka's forest-based tourist destinations.

1.1 Problem Statement

With the rising demand for ecotourism in today's dynamic global environment; ecotourism operators may face difficulties in competing with one another to market available

products and services for diverse customers or clients (Wight, 1993; Steward & Sekartjakrarini, 1994; Wall, 1997; Diamantis, 1999; Higham & Carr, 2002). Therefore, an improved understanding of how tourists acquire knowledge about a destination and its services is important for marketing management decisions, the design of effective communication campaigns, and service delivery regarding a certain destination (Srinivasan, 1990; Wilkie & Dickson, 1985, Lo et al. 2002; Gurosy & McCleary, 2004). In other words, understanding travelers' pre-trip information search behavior will guide travel and tourism marketers to influence travelers' actual travel decisions by providing relevant information through appropriate channels (Lo et al. 2002). Destination, in particular, can embrace this approach by producing marketing-oriented information, brochures, maps, videos, magazines, and newspaper advertisements, as well as valid data in the form of editorial communications such as guidebooks, destination publications, magazines and newspaper articles (Vogt & Fesenmaier, 1998).

The production, consumption, evaluation, and decision making process of such a service differs from that of durable goods. Unlike those who purchase goods, service consumers will not seek to benefit from a tangible object. Services will not readily lend themselves to be inventoried, readily displayed, easily patented, or be subject to be returned or resold, there exist no guarantee that the delivered service will match what is planned and promoted (Zeithamal et al. 2009). Therefore, it is noteworthy to mention that consumer information search behavior for services significantly varies from goods (Teare, 1992; Gurosy, 2004). In fact, consumers may feel compelled to be more involved in pre-purchase information searches for services rather than product purchases (Moutinho, 1987). Consumer pre-purchase information search may be identified as one of the most compelling research fields in consumer behavior (Beatty & Smith, 1987).

Researchers were interested in information search behavior and related studies as far back as 1917 (Schmidt & Spreng, 1996; Gurosy, 2004). Since that time, other studies have followed and modified the original idea of consumer pre-purchase information search behavior (Schul & Crompton, 1983; Fodness & Murray, 1998, 1999; Gurosy, 2004; Lo et al. 2002; Luo et al. 2004).

In the realm of tourism and information search behavior literature, Schul & Crompton (1983) examined travel-specific psychographic statements and socio-demographic variables in order to predict and explain the external information search behavior of international travelers. In turn, Fodness and Murray (1998) averred that leisure traveler perceptions of tourist information sources are based on three underlying dimensions: space, time, and operation. Fodness & Murray (1999) further expanded their study to test how a) search contingencies, b) individual tourist characteristics, and c) information search strategies are related to behavioral search outcomes. Gurosy (2004) developed an empirical model that integrates psychological/ motivational, economics as well as information search strategies, to understand traveler information search behavior. Lo et al. (2002) compared business and leisure travelers' information search behavior with a special reference to utilized information sources. In 2004, Luo et al. noted that the Internet, as a newly formed and popular mode of media, greatly increased tourist pre-trip information search behavior. Duncan & Olshavsky (1982) applied a psychological or motivational approach, which combines an individual product class with the task-related variables, such as beliefs and attitudes. An economic approach combines a cost-benefit framework with the economics of information theory (Avery 1996; Stigler, 1961; Urbany, 1986). The economics of information theory basically focuses on a pre-store and in-store search, while integrating economic incentives such as perceived-versus-actual costs, associated with search and noneconomic involvement-based motivations of search (Avery, 1996).

Furthermore, Vogt & Fesenmaier (1998) proposed a conceptual model of information search and source utilization, inclusive of a new, intermediary stage of multiple information needs or roles. Past researchers in the field of tourist information search behavior have greatly focused on nearly 60 variables which are managerially important in designing communication materials and are likely to influence external search strategies (Gursoy & McCleary, 2004). In order to gain the maximum benefit out of the provided information, it is important for destination marketers to understand how consumers process their information. To date, information processing is an important step that has been nearly ignored in tourism literature (Duncan & Olshavsky, 1982; Avery 1996; Stigler, 1961; Urbany, 1986; Vogt & Fesenmaier, 1998; Gursoy, 2004). In other words, scant evidence exists on how information is actually processed by travelers, prior to making their travel decisions. The proposed offers special attention to travelers' information processing consequently influencing travel related outcomes. The methodology modifies existing tourists' pre-trip information search behavior models by primarily addressing information processing as simply intermediary step in the process.

In tourism, quality of the service is often rated by satisfaction (Qu & Tsang, 1998). In turn, satisfaction is measured by any variance between expected and experienced service (Gronroos as cited in Reichel et al. 1999). Consumer satisfaction may be increased however, by narrowing any gap between expected and experienced service. The expectations for quality are determined by marketing communication, word of mouth, customer needs, as well as image (Kotler, 1997). Therefore, destination image plays an important role to differentiate the destination from many other existing destinations (Yilmaz et al. 2009). Past studies have suggested that formal and informal information sources have great influence on destination image formation and, in turn, the influence of destination image on travel related outcomes

(Beerli & Martin, 2004; Etzel & Wahlers, 1985; Crompton, 1979; Echtner & Ritchie, 2003, Gursoy & McCleary, 2004; Baloglu & Mangaloglu, 2001). This study also included the destination image as an element in the traveler decision making process. However, unlike past studies that examined the relationship between information searching and image formation, this study mediated the information searching and image formation by information processing.

Unlike a uni-dimensional process, information search behavior may be conceptualized as a series of interrelated behaviors (Kiel & Layton, 1981; Srinivasan & Ratchford, 1991). Although some authors attempted to study various theoretical and empirical aspects of traveler pre-purchase information search behavior by applying an extensive conceptual and empirical foundation, focused attention in a single model oriented the sequence of steps taken by travelers before making trip related decisions were limited. Nevertheless, notable endeavors have made by Maute & Forrester, 1991; Punj & Staelin, 1983; Sirinivasan & Ratchford, 1991; Moorthy et al. 1997; Schmidt & Spreng, 1996 in the field of product purchasing and Vogt & Fesenmair, 1998; Fodness & Murray, 1999; Gursoy, 2004 in the field of tourism. This study initiates developing and testing an information search model by application of multiple steps an individual will use including information processing and pre-trip destination image before they making travel related final decisions.

A generalization of consumer behavior, including information searching for any product, becomes misleading and biased in any consumer decision making process (Burns & Gertny as cited in Erasmus, 2001). In consideration of ecotourism as a subset of tourism, the author believed that the information search behavior of an ecotourist differs from that of a rational tourist. Therefore, an information search behavior model should be developed and tested specifically for ecotourist.

The researcher believed that the final model may be used as a handy marketing tool, since the model includes important relevant, practical facets of ecotraveler pre-trip information search behavior. Unlike many past studies in which data were collected from tourists who have visited a particular tourism destination, this current study focused on visitors of selected forest-based tourism sites. This researcher believes that interviewing on-site visitors would enhance the accuracy and novelty of data rather than those who visited the destination in the past.

1.2 Research Questions and Study Objectives

1.2.1 Conceptual Model for Ecotourist Information Search Behavior

Drawing from numerous extant classifications, an internal search versus external search classification system is fundamental for collecting information. When a search takes place, a consumer initially orchestrates an internal search, using his or her past experiences to plan the vacation. Most often, consumer memory is insufficient to make decisions. As a result, consumers tend to extend a search to use various external information sources (Schul & Crompton, 1983; Fodness & Murray, 1997). According to the scholars in the field, a vacation traveler's search is predominantly external, and thus involves an added effort, as well as a variety of information sources (Schul & Crompton, 1983, Fodness & Murray, 1997). The current study focuses exclusively on traveler external information search behavior.

Unlike a uni-dimensional process, information search behavior may be conceptualized as a series of interrelated behaviors (Kiel & Layton, 1981; Srinivasan & Ratchford, 1991). This study proposes a model for ecotourist information search behavior by integrating sequence of steps: 1) influential input variables such as cost of information search and source characteristics 2) information searching such as external information search; 3) information processing; 4) a pre-trip destination image and; 5) search outcome.

The construct of the model is based on the following research questions.

Research Question 1

Do costs of information search influence travelers' information searching?

Research Question 2

Do information source characteristics influence travelers' information searching?

Research Question 3

Do costs of information search influence travelers' information processing?

Research Question 4

Do information source characteristics influence travelers' information processing?

Research Question 5

Does traveler pre-trip external information search influence their information processing?

Research Question 6

Does traveler information processing influence their pre-trip destination image?

Research Question 7

Does traveler pre-trip destination image influence their travel related actual search outcomes?

Research Question 8

Does traveler information processing influence their actual search outcomes?

Research Question 9

Does traveler pre-trip external information search influence their actual search outcomes?

Research Question 10

Does traveler pre-trip external information search influence their pre-trip destination image?

Objective 1

Develop and test an empirical model of ecotourist pre-trip information search behavior

1.2.2 Market Segments and Socio-demographic Profiles of Customers

This section of the study presents an exploratory effort to identify appropriate market segments based on the tourists' external information search strategies.

Defining market segments will intensify practical implications of the study. These implications will provide the Sri Lanka Tourist Board, ecotourism destination marketers, and tour operators with insights to guide both communication efforts and marketing strategies.

Research Question 1

Is it possible to categorize homogeneous clusters of ecotourists, based on their pre-trip external information search strategies?

Research Question 2

Is it possible to develop cluster profiles, based on socio-demographic characteristics and outcome behavior of derived clusters?

Objective 2

Identify patterns/clusters or segments of Sri Lanka ecotourists based on their pre-trip external information search strategies. Then develop cluster profiles for derived clusters based on socio-demographic characteristics and outcome behaviors.

1.3 Significance of the Study

In this competitive marketplace, consumer awareness, destination selection, and choice of tourism products primarily depend on the information available to the tourist (McIntosh & Goeldner, Moutinho as cited in Fodness & Murray, 1997). Therefore, proper understanding of traveler pre-trip information search behavior strengthens the competing edge of world-wide tourism service providers. This researcher affirmed that study findings will help destination marketers and destination governing bodies, as well as tour operators, to identify the market segment/niche in order to better cater the market segment by subsequently tailoring the marketing mix. Further, from the marketers' point of view, study findings will help to better organize and design their promotional mix to definitively create the right destination image in the consumer's mind. Apart from influencing actual travel decisions, a destination image will develop the customer's expected service. Perceiving the right service will reduce the gap between experienced service and expected service and in turn, increases customer satisfaction.

The satisfied customer becomes an asset for the tourism industry by ensuring both customer return and positive word-of-mouth. This researcher believes that the study findings will be specifically helpful for a country such as Sri Lanka. Sri Lanka represents an ideal destination for ecotourists, yet lacks unified attention for related educational research and destination promotion, which yield a valid promise for future tourism.

CHAPTER 2: THEORETICAL FRAMEWORK, PROPOSED MODEL AND STUDY HYPOTHESES

2.1 Theoretical Framework: Model Building

Information search behavioral studies in consumer goods marketing reflect a long tradition. Conceptual and empirical attempts were applied by various scholars in the field (Fodness & Murray 1997, 1999; Beatty & Smith 1987; Snepenger & Snepenger 1993; Shaul & Crompton, 1983; Bieger & Laesser, 2004). With regard to the information search behavior, a few key theoretical frameworks may be identified. These models have been used as theoretical framework for many studies thereafter.

- (1) Psychological/motivational approach (Beatty & Smith 1987; Duncan & Olshavsky, 1982): The main concept behind this psychological/motivational approach is that consumer decisions are influenced by a consumer's own internal forces (push factors), as well as by other external forces (pull factors), such as destination attributes (Bieger & Laesser, 2004). This approach is based on consumer motivation theory, which deals with the push and pull factors of consumer decisions (Cha et al., as cited in Bieger & Laesser, 2004).
- (2) Cost/benefit approach (Economics approach): According to this cost/benefit approach, consumer decisions of the information source type, as well as utilization, will be based on the expected cost and benefit of the search (Maeser, 1996). This approach is linked to the processing theory and consumer behavior models (Assael, Bettman as cited in Bieger & Laesser, 2004).
- (3) Process approach: This approach basically focuses on the steps involved in the information search rather than on the action, i.e., A few studies have examined the process of the information search in a combination of different phases: 1) number of

input variables, 2) information searching, 3) information processing, 4) purchase phase, and 5) consumption phase (Bieger & Laesser, 2004). For example, Crompton (1992) suggested three phases of the process in the name of initial consideration set, a late consideration set, and an action and interaction set (Bieger & Laesser, 2004).

2.1.1 Assael's Information Acquisition and Processing Model

Numerous theories and models that deal with tourist pre-trip information search behavior were developed over the years. Assael's information acquisition and processing model (1984) of a product is the base or theoretical framework for the current study. Assael's information acquisition and processing model consists of the multiple stages that an individual will execute to make his/her product purchase decision (Figure 1). This model implies that the information search behavior is not a single step process. The process involves multiple stages before making the purchase decision. The first stage of Assael's model considers the input variables that consumers bring to the purchase occasion. This stage consists of background variables of consumers' socio-demographic characteristics, environmental factors, and a marketing mix which will influence consumers' information acquisition procedures. The second stage is comprised for information acquisition.

Further, this stage discusses active and passive external information sources, as well as internal sources which acquire relevant product information. Third stage highlights the processing efforts, including information details, which have been retained over time for future use. The fourth stage features a brand evaluation, where consumers might prioritize necessary features or acknowledge brand loyalty over alternative brands. The last stage signifies the consumers' actual purchase decisions, based on the first four stages.

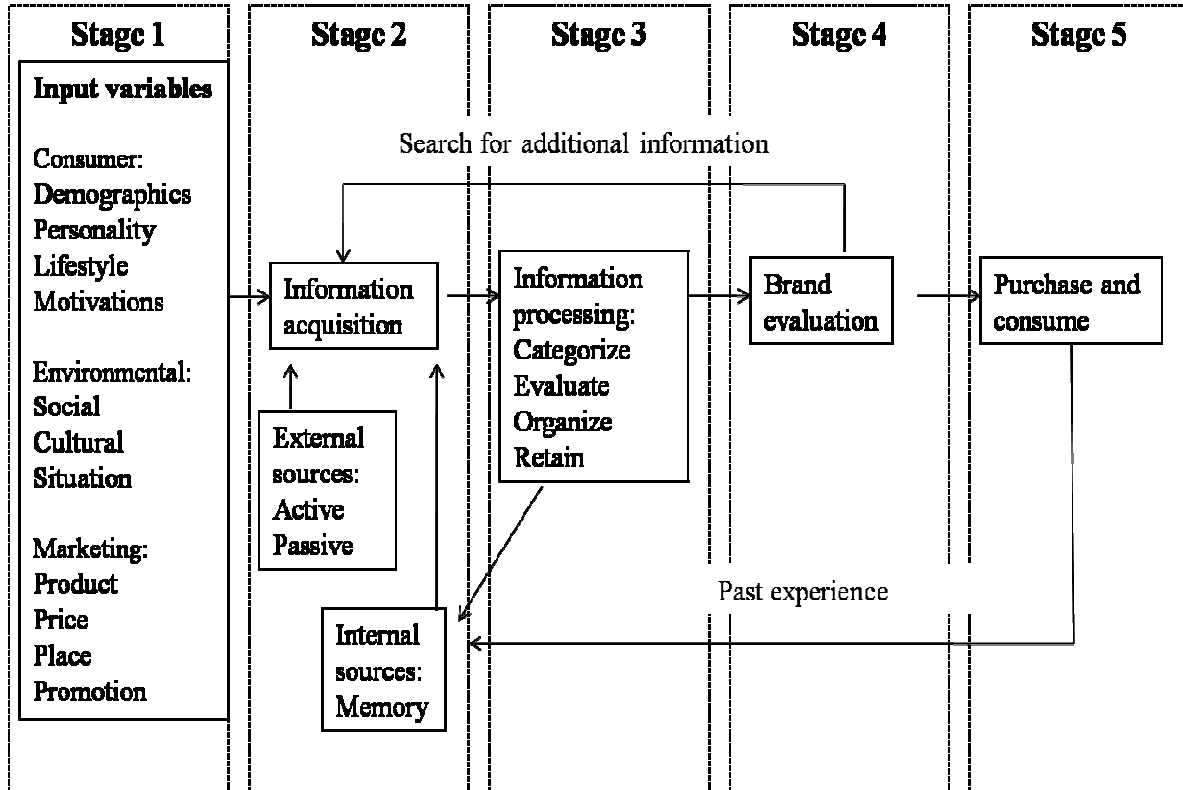


Figure 1: Consumer information acquisition and processing model by Assael (1984)
(Source: Vogt & Fesenmaier, 1998)

2.1.2 Proposed Empirical Model for Ecotourist Information Search Behavior

Models are considered to be valuable tools in many scientific contexts. This study develops and tests an empirical model for tourist pre-trip information search behavior, particularly for tourists who visit forest-based tourism sites.

Consumer behavior includes all the actions consumers take to acquire, use, and dispose of products and services (Mowen & Minor, 1998). A pre-purchase information search, the purchase of a product or service, and the recommendation of the product or service to another person are examples of consumer behaviors. Consumer behavior tends to differ with the product, market, environment, and service (Assael, 2004). Therefore, it becomes essential for marketers to understand their customer or client behaviors in order to tailor products/services, prices, promotions, and distribution channels to fit diverse customer needs.

When we consider the tourism literature, most of the tourist information studies focused on a few ordinary areas. Majority of studies focused on various factors that influence external search behavior. Considerable studies have tested the relationship between information search and search outcomes (Andereck & Caldwell, 1993; Bonn et al. 1998; Etzel & Wahlers, 1985, Woodside et al. as cited in Luo et al. 2004). In addition, the effect of an information search on the destination image is another area in which researchers were interested (Luo, 2004; Baloglu, 1999). Some other scholars in the field have identified the important role played by the destination image in travel decisions (Pearce, 1982; Woodside & Lysonski, 1989). In the tourism literature, hard evidence on the process of the information search behavior and the information processing is minimal.

Identifying the existing gap in the tourism pre-trip information search behavior literature, this study develops a model for ecotourist information search behavior by integrating five steps: 1) influential input variables such as cost of information search and source characteristics; 2) information searching; 3) information processing; 4) pre-trip destination image, and 5) search outcome.

This model differs from existing tourist information search models by incorporating a practical, important step sequence in a single model. Also, the proposed model gives special attention to travelers' information processing and a subsequent influence on pre-trip destination image. The construct of information processing has not been adequately tested in the tourists' information search behavior literature, particularly in relation to ecotourists' information search behavior.

Figure 2 depicts the framework for the proposed model by illustrating all the model constructs (influential input variables, information acquisition external information search,

information processing, pre-trip destination image, and search outcomes) and their influences on one another.

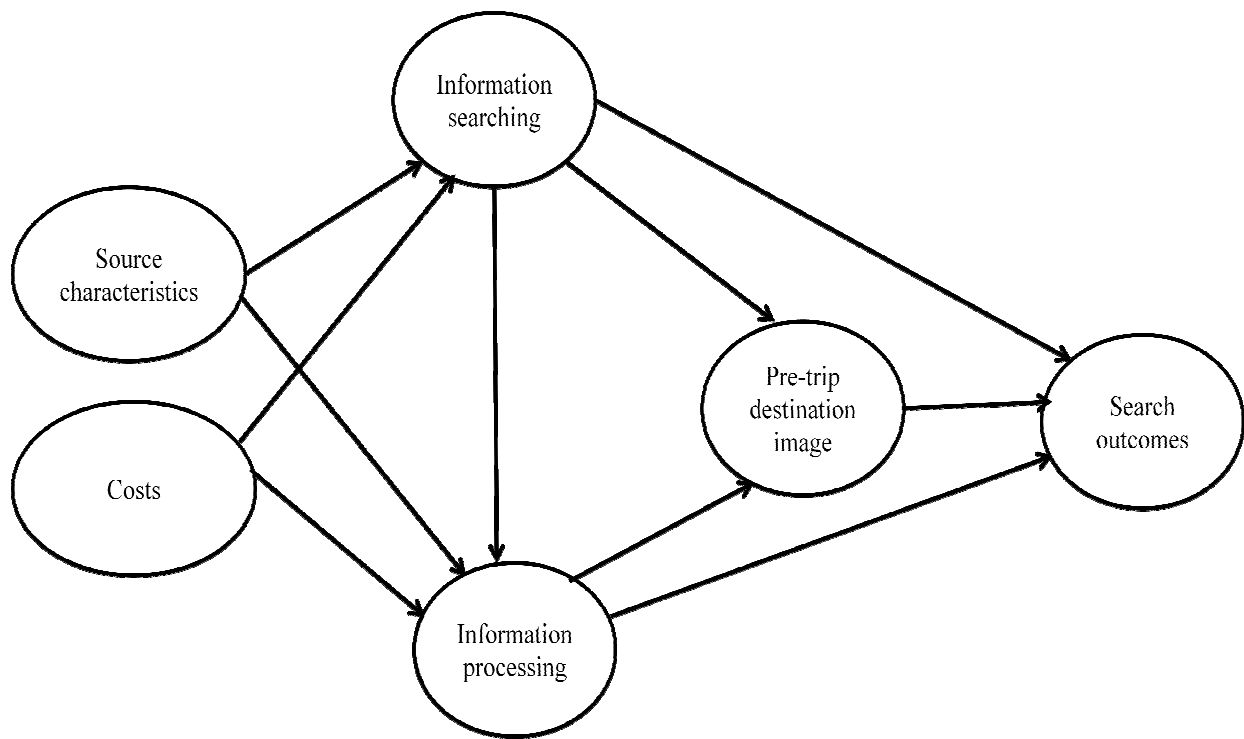


Figure 2: Conceptualized framework for the traveler pre-purchase information search model

Figure 3 describes the proposed model of traveler pre-purchase information search behavior with the underlying dimensions of each construct. This model applies the theoretical framework of consumer information acquisition and processing model proposed by Assael, as shown in Figure 1, as well as the framework of the proposed traveler pre-purchase information search model, as shown in Figure 2. Figure 3 therefore, presents detailed representation of the framework of the proposed traveler pre-purchase information search model.

The proposed model modifies the Assael's original model by a) integrating necessary input variables, and b) adjusting certain variables, based on strong evidence in past tourism literature. All the input variables are carefully selected to include the most important influential factors for traveler information search behavior.

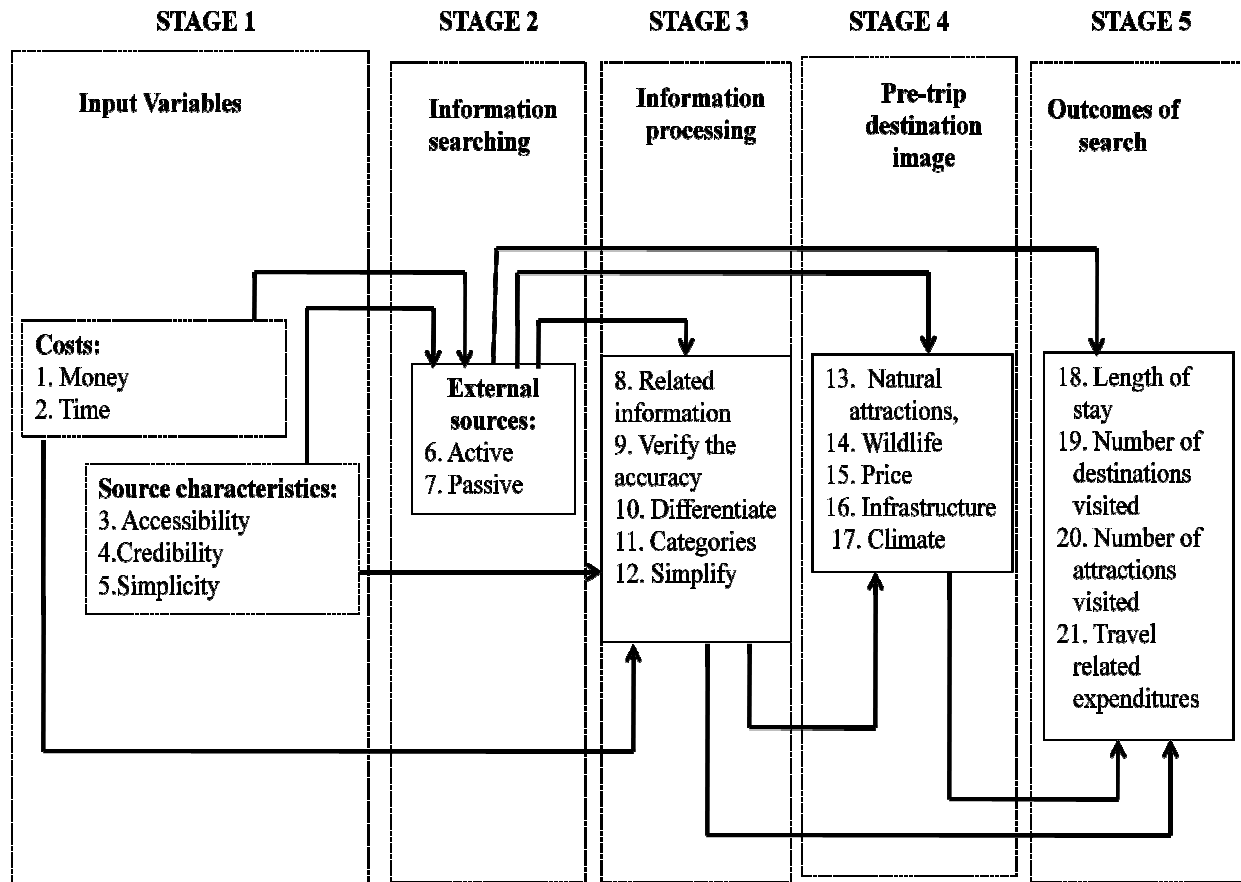


Figure 3: Proposed traveler pre-purchase information search behavior model

For the purpose of this study, each of the primary model components is defined as follows:

- **Input variables:** Variables most likely to influence the external information search of a tourist.
- **Cost:** The total cost associated with information search in terms of time and finance.
- **Information searching:** Information acquisition through various external information sources.
- **Information processing:** Analysis of observed information and evaluation of the destination to assist them for final decisions.
- **Pre-trip destination image:** “The sum of beliefs, ideas, and impressions that a person has of a destination” before travelling the destination (Crompton, 1979).
- **Outcomes of search:** Final decisions made by a tourist regarding a trip, as a result of the information search.

A theoretical model with possible influential input variables and the sequence of steps that one could possibly follow to make travel decisions was proposed. The study primarily focuses on the sequence of steps an individual may follow in relation to the external information search when making travel decisions. Relationships suggested by the model are treated as testable hypotheses. The conceptual model, which illustrates relevant hypotheses and relationships between variables, is depicted in Figure 4.

H₁: The more favorable the information source characteristics, the more extensive the information searching.

H₂: The more favorable the information source characteristics, the more extensive the information processing.

H₃: The higher the costs of information searching, the less extensive the information searching.

H₄: The higher the costs of information searching, the less extensive the information processing.

H₅: The more favorable the external information searching, the more extensive the information processing.

H₆: The higher the information processing, the better understanding of the pre-destination image.

H₇: The higher the information processing, the more favorable the search outcomes.

H₈: The better the pre-trip destination image, the more favorable the search outcomes.

H₉: The more extensive the external information search, the better understanding of the destination image.

H₁₀: The more extensive the external information search, the more favorable the search outcomes.

2.2.3 Model Constructs of the Proposed Model

a) Information Source Characteristics and their Relation to Information Searching

Clearly, features of the information source characteristics affect information search. For example, the consumer search differs between goods and services. Since consumers have greater difficulty in evaluating service quality before a purchase, they might perceive a greater risk in buying intangible-dominant products such as tourist experiences.

Therefore, consumers adopt various search sources or strategies to reduce perceived risk (Engel et al. 1995, Ziethmal et al., 2009).

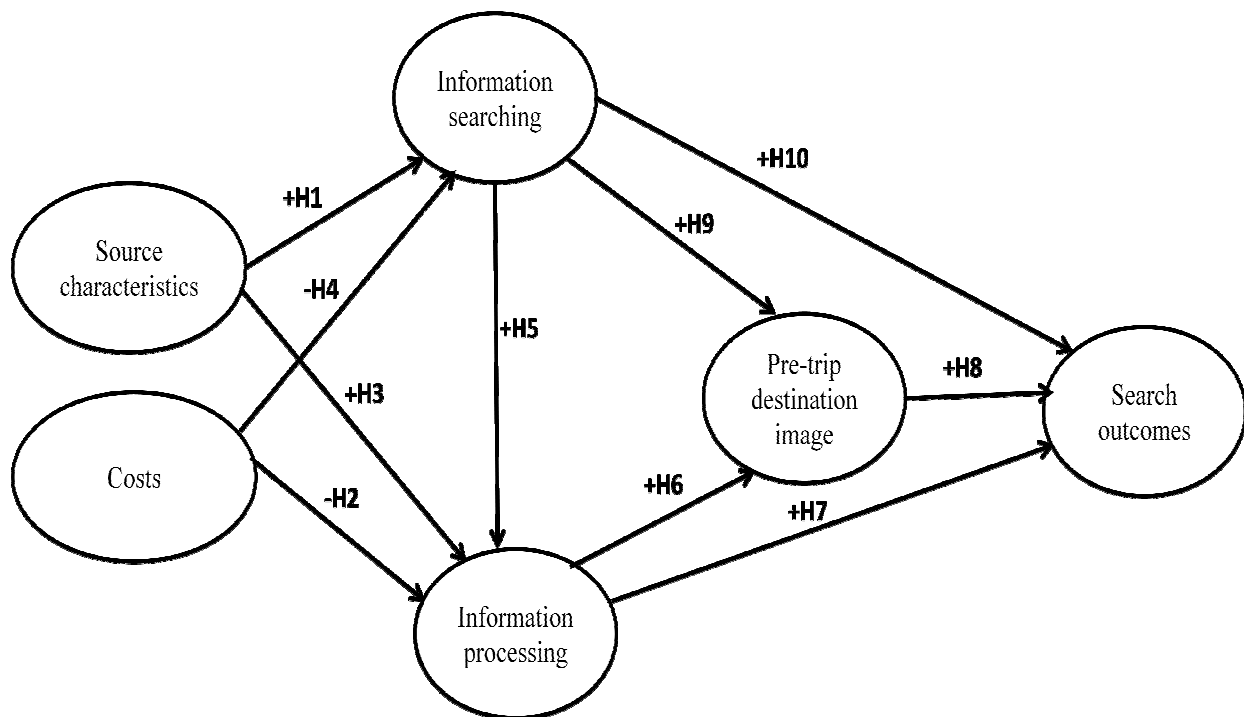


Figure 4: Proposed traveler pre-purchase information search model with relevant hypotheses

An easy access for information is very important in facilitating consumers in using available information. Wilson (1997) found that even a lack of easily accessible sources could lead a consumer away from the information searching; additionally, sources difficult to access may also impose an additional cost to the consumer. According to Phillips & Zorn (as cited in Wilson, 1997), lack of easy access to certain information certainly presents a problem for consumers.

In addition to easy access, reliability of given information is pivotal in relationship marketing, especially in services like hospitality and tourism. Credible information sources may be compared to building blocks in a good provider-consumer relationship. Therefore, information sources must convince consumers to believe their claims for products or services (Wilson, 1997).

A traveler who wants to gather information to plan a vacation may not bother with an extended tutorial or with complex information. Therefore, information sources must be intuitively usable; i.e., simple and comfortable (Malaka & Zipf, 2000).

H₁: The more favorable the information source characteristics, the more extensive the information searching.

b) Costs of Information Search and their Relation to Information Searching

Research finds that the cost-benefit framework, coupled with the cost of information theory indicate that the cost of a pre-purchase information search is not a uni-dimensional construct (Johnson & Payne 1985; Stigler as cited in Wilson, 1997). A cost of information search should not only represent the economic cost, but also should include the indirect, economic cost of time and effort for searching, processing, and evaluating information (Wilson, 1997). The economic cost of information has been widely used by many authors in tourism studies (Fodness & Murray, 1997, 1998, 1999; Schul & Crompton, 1983; Vogt & Fesenmaier 1988; Woodside & Ronkainen, 1980). Two other dimensions, cost of time spent and cost of effort made, have been used in consumer behavior studies (Bettman & Suja, 1987) as well as by tourism researchers (Fodness & Murray, 1997, 1998, 1999; Vogt & Fesenmaier, 1988).

Stigler noted that the cost of information search tends to differ based on income of the potential tourist. He also indicates that the cost of time is higher for individuals with higher incomes (Stigler as cited in Wilson, 1997). Further, Stigler concluded that the human behavior of searching information is an unfavorable action, and information searchers are willing to pay more for more organized and enjoyable information (Stigler as cited in Wilson, 1997).

H₃: The higher the costs of information searching, the less extensive the information searching.

h) Information Processing and its Relation to the Other Proposed Model Constructs

When we consider the tourism literature, we find that hard evidence on information processing is minimal. Most of the studies focused on various factors that influence external search behavior. Considerable studies have tested the relationship between information search and search outcomes (Andereck & Caldwell, Bonn et al., Etzel & Wahlers, Woodside et al. as cited in Luo et al., 2004). In addition, the effect of an information search on the destination image is another area in which researchers were interested (Baloglu, 1999; Weber & Henson, Walmsely & Lewis as cited in Luo, 2004). Some other scholars in the field have identified the important role played by the destination image in travel decisions (Pearce, 1982; Woodside & Lysonski, 1989).

In tourism literature, a deviation of existing pattern of information search behavior towards information processing have been made by Gursoy (2004), who considered that the non-routine shopping decisions and purchasing behaviors, such as visiting a destination, require both a prior learning through explicit information search and the consideration of all available alternatives (Gursoy, 2004). Therefore, it offers opportunities for analytic processing of information (Alba & Hutchinson as cited in Gursoy, 2004). However, in tourism behavior literature, some authors suggested the importance of process perspective that may play in the information search behavior models, therefore, recommended to include the process perspective in future studies (Fodness & Murray, 1999; Beiger & Laesser, 2004). However, hard evidence in tourism literature related to information processing or how travelers process or filter information in order to facilitate final search decisions was no easy to find.

Fields other than the tourism such as psychology and consumer products, have stressed the importance of information processing in their consumer behavior models.

The Engel-Kollat-Blackwell Model of consumer behavior (1995) as well as Bettman's information processing model (1979) suggested a relationship between information searching and processing (Black et al. 2003) Assael's information processing model (1984), represents the theoretical framework of the current study, suggested that information processing represents a separate stage/step that consumers experience in the decision making process.

This current study will consider the role played by information processing in the ecotraveler information search behavior process. Therefore, current study will test all the possible links between information processing and other model constructs. The influence of costs of information search and information source characteristics on information processing, the influence of information searching on information processing, as well as the influence of information processing on the model constructs of pre-trip destination image and search outcomes are suggested by the following hypotheses:

H₂: The more favorable the information source characteristics, the more extensive the information processing.

H₄: The higher the costs of information searching, the less extensive the information processing.

H₅: The more favorable the external information searching, the more extensive the information processing.

H₆: The higher the information processing, the better understanding of the pre-destination image.

H₇: The higher the information processing, the more favorable the search outcomes.

e) Pre-Trip Destination Image and its Relation to the Information Searching and Search Outcomes

Other than certain factors (individual's own needs, motivations, prior knowledge, preferences, and other personal characteristics) which help to build personally perceived images of the destination, travelers develop a pre-trip destination image by processing a continuum of different agents or information sources (Ashworth & Voogd, Bramwell & Rawding, Gartner as cited in Beerli and Martin, 2004; Hanlan & Kelly, 2005).

According to Baloglu (1999), a destination image could be formed by two factors: stimulus factors (including external information and past experience), or by personal factors (referring to the consumers' personal characteristics). This study mainly discusses information search driven by stimulus factors, with particular emphasis on external information search.

Many researchers in the field of travel and tourism noted the connections between the use of information sources and image formation and suggested a positive relationship between external information search and the pre-trip destination image (Baloglu, 1999, Weber & Henson, Walmsely & Lewis as cited in Luo, 2004). In addition, many scholars in the field have identified the importance of a destination image on certain consumer behaviors namely; destination choice and other travel-related outcomes, such as length of stay and travel related expenditure (Tasci & Gartner, 2007). Aldskogius (1977) suggested that a pre-trip destination image serves as a basis for travel behaviors or decisions. There is a proven, positive relationship between perceptions of destination/destination image and travel related decisions (Pearce, 1982; Woodside & Lyonski, 1989). For the purpose of this study, this author presents the following hypotheses.

H₈: The better the pre-trip destination image, the more favorable the search outcomes.

H₉: The more extensive the external information search, the better understanding of the destination image.

g) External Information Search and Actual Search Outcomes

The consumer behavior literature commonly identifies the relationship between information search behaviors and search outcomes. Consumers will extend information search as long as the perceived costs of benefits are much greater than associated cost of the search (Andereck & Caldwell, 1993; Bonn, 1998; Etzel & Wahlers, 1985). Previous studies revealed that sources of information available to frequent information seekers greatly influence the actual travel decisions in terms of high expenditures on travel and tourism (Andereck & Caldwell,

1993; Etzel & Wahlers, 1985, Bonn as cited in Luo et al., 2004). The above arguments also support the study hypothesis of the more extensive the external information search, the more favorable the search outcomes. Therefore,

H₁₀: The more extensive the external information search, the more favorable the search outcomes.

2.2 Identifying the Market Segments and Socio-demographic Profiles of Sri Lankan Ecotourism Market

This section of the study constitutes an exploratory effort to identify appropriate market segments, based on the external information sources used by travelers to make travel decisions. The pragmatic rationale underlying market segmentation is that marketers may better tailor their services for the identified niche, and thus practice de-marketing strategies when necessary. After segmenting the market, this researcher profiles segments for easy recognition. Profiling provides cluster identification on characteristics of interest to managers. Defining market segments and segment profiles will intensify practical implications of the study by providing the Sri Lanka Tourist Board, ecotourism destination marketers, and tour operators with insights to guide marketing communication efforts and strategies. Figure 5 is the graphical representation of the second study objective: identifying patterns/clusters or segments of Sri Lanka ecotourism market, based on ecotravelers pre-trip external information search behavior. As a result, cluster profiles may be developed to identify market segments, based on socio-demographic characteristics and outcome behaviors. Study hypotheses for market segmentation are as follows.

H₁: Ecotravelers differ in their pre-trip information search behavior; homogeneous groups/certain market segments exist among eco-travelers based on their pre-trip information searching (information sources).

H₂: There is a statistically significant difference among ecotravelers, classified by their information search, with respect to socio-demographic characteristics and actual travel decisions.

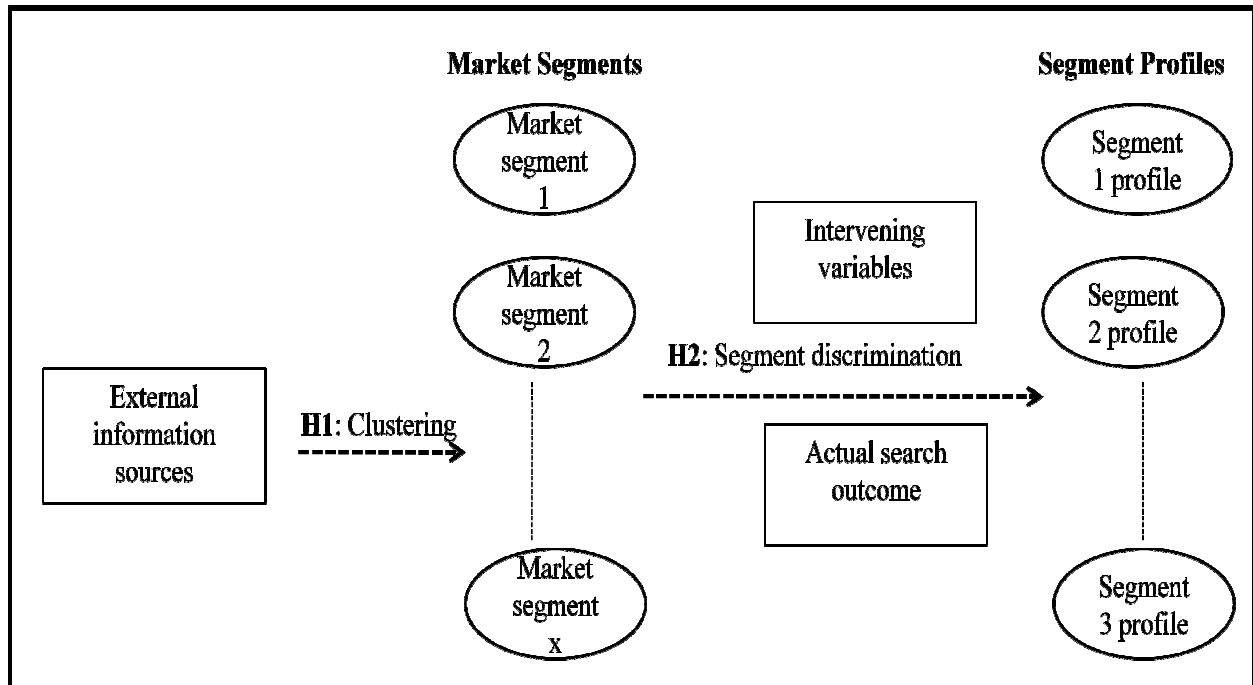


Figure 5: Market segmentation based on the traveler pre-purchase and external information behavior and relevant study hypotheses

CHAPTER 3: LITERATURE REVIEW

A literature review section of the current study consists of three subsections. Subsection one presents literature that deals with the concept of ecotourism and the ecotourism potential in Sri Lanka. The second subsection presents the literature relevant to consumer behavior including traveler pre-trip information search behavior. The last section primarily focuses on literature relevant to the statistical methods used in this study.

3.1 Ecotourism and Potentials in Sri Lanka

First subsection of the literature review consists of an introduction to the term ecotourism, as well as the various aspects of the ecotourism. Further, this section discusses how the concept of ecotourism appeals to a country like Sri Lanka further discussing the country facts in relevant to tourism.

3.1.1 The Tourism Product

Tourism represents an important economic sector in the world. At present, travel and tourism is estimated to account for roughly 10 percent of the world's gross domestic production (GDP) and contributes to approximately 8 percent of total worldwide employment (World Travel and Tourism Council, 2004). According to the World Travel and Tourism Council, contribution of tourism to the world's economy is expected to be even greater (Mak, 2004). Sinclair & Stabler define the tourism product as a "composite product involving transport, accommodation, catering, natural resources, entertainment and other facilities and services, such as shops and banks, travel agents, and tour operators" (Mak, 2004). It is evident that a number of features may be attributed to the tourism product. The first most important feature is the need to travel. A consumer must travel out of the usual environment and spend some time in order to consume the product.

Tourism is a service, and as such, is intangible and cannot be stored. Therefore, a supplier would find it difficult to buildup inventories in advance for a peak demand. Nevertheless, seasonality in tourism is very common and supplies should be adjusted in order to fulfill various seasonal demands. Tourism products cannot be easily compared before a purchase, due to the intangibility and heterogeneity of the service. The other feature of tourism products is that the products may be consumed by international as well as local tourists. Tourism heavily relies on human, man-made, and natural capital for inputs to serves consumers (Mak, 2004). Therefore, destination marketers must increase alertness of tourism products and make necessary adjustments to satisfy their consumers.

3.1.2 Introduction to the “Ecotourism” Concept

Tourism is one of the largest industries in the world, with many economic and social benefits (World Travel and Tourism Council, 2010). Even so, uncontrolled tourism can deliver an adverse impact on any local society and environment. In recent years, detrimental impacts of mass tourism on the environment and economy, as well as society and culture, were evidently becoming an alarming problem. As a result of a world’s acknowledgement of “greener” tourism, alternative tourism models emerged. Nature-based travel, green travel, adventure travel, responsible travel, soft tourism, cultural tourism, and ecotourism are widely regarded concepts that are growing more rapidly than general tourism (Moore & Carter, Valentine, Goodwin, Fennell as cited in Lee 2007). The term *ecotourism* emerged in 1980s as a direct result of the world’s acknowledgment of and reaction to sustainable local and global ecological practices. In this instance, the natural element of holiday activities, together with an increased awareness toward minimizing adverse impacts of tourism on the environment-the boundless consumption of environmental resources-contributed to the demand for ecotourism holidays.

This demand was also driven by concrete evidence that indicated consumers had shifted from mass tourism towards experiences that were more individualistic and enriching (Wight, 1993; Steward & Sekartjakrarini, 1994; Wall, 1997; Diamantis, 1999).

3.1.3 Definitions of Ecotourism

Eventhough the concept of ecotourism has been expanding rapidly over the past two decades, it does not have a universal definition. The term ecotourism has been defined by various scholars and tourism-related institutions with some significant definitional differences (Table 1).

Table 1: Selected definitions of ecotourism

‘Ecotourism is a form of tourism inspired primarily by the natural history of an area, including its indigenous cultures. The ecotourist visits relatively undeveloped areas in the spirit of appreciation, participation and sensitivity. The ecotourist practices a non-consumptive use of wildlife and natural resources and contributes to the visited area through labor or financial means aimed at directly benefiting the conservation of the site and the economic well-being of the local residents.’ (Ziffer, 1989)
‘Ecotourism is a nature tourism that contributes to conservation, through generating funds for protected areas, creating employment opportunities for local communities, and offering environmental education.’ (Boo, 1991)
‘Nature-based tourism that is focused on provision of learning opportunities while providing local and regional benefits, while demonstrating environmental, social, cultural, and economic sustainability’ (Forestry Tasmania, 1994)
‘Ecologically sustainable tourism in natural areas that interprets local environment and cultures, furthers the tourists’ understanding of them, fosters conservation and adds to the well-being of the local people.’ (Richardson, 1993)
‘Nature-based tourism that involves education and interpretation of the natural environment and is managed to be ecologically sustainable. This definition recognizes that natural environment includes cultural components, and that ecologically sustainable involves an appropriate return to the local community and long-term conservation of the resource.’ (Australia Department of Tourism, 1994)
‘Travel to remote or natural areas which aims to enhance understanding and appreciation of natural environment and cultural heritage, avoiding damage or deterioration of the “environment and the experience for others”.’ (Figgis, 1993)
‘Travel to enjoy the world’s amazing diversity of natural life and human culture without causing damage to either.’ (Tickell, 1994)
‘A responsible nature travel experience, that contributes to the conservation of the ecosystem while respecting the integrity of host communities and, where possible, ensuring that activities are complementary, or at least compatible, with existing resource- based uses present at the ecosystem.’ (Boyd & Butler, 1993, 1996)

(Source: Adopted from Diamantis, 1999)

According to Wight (1993), ecotourism is a spectrum with a variety of products rather than considering ecotourism as a specific product (Wight, 1993). More specifically, Wight (1993) mentioned that ecotourism is driven by a demand evolved through customer needs and supply through marketing practices and he defined ecotourism as a spectrum which includes both:

- (1) Supply factors (nature and resilience of resources, cultural or local community preferences, types of accommodation)
- (2) Demand factors (types of activities and experiences, degree of interest in natural or cultural resources, degree of required physical effort)

1. All nature-based form of tourism in which the main motivation of the tourists is the observation and appreciation of nature as well as the traditional cultures prevailing in natural areas.
2. It contains educational and interpretation features.
3. It is generally, but not exclusively organized for small groups by specialized and small, locally owned business. Foreign operators of varying sizes also organize, operate and/or market ecotourism tours, generally for small groups.
4. It minimizes negative impacts upon the natural and socio-cultural environment.
5. It supports the protection of natural areas by
 - generating economic benefits for host communities, organizations and authorities managing natural areas with conservation purposes,
 - providing alternative employment and income opportunities for local communities,
 - increasing awareness towards the conservation of natural and cultural assets, both among locals and tourists.

Figure 6: General characteristics of Ecotourism
(Source: Adopted from WTO and UNEP publications on Ecotourism and related issues, 2002)

According to Steward and Sekartjajrarini (1994), definitional structure of ecotourism is based on two approaches: (1) The activity-based perspective of ecotourism and (2) The industry-based perspective of ecotourism.

Eventhough Ecotourism doesn't have a universal definition, most definitions share general characteristics of the concept (Figure 6). For further understanding of the concept of Ecotourism Rosemary Black's (no date) principles of ecotourism are presented in Figure 7.

- 1) Focuses on personally experiencing natural areas in ways that lead to greater understanding and appreciation
- 2) Integrate opportunities to understand natural areas into each experience
- 3) Represents best practice for ecologically sustainable tourism
- 4) Positively contributes to the ongoing conservation of natural areas
- 5) Provides constructive ongoing contribution to local communities
- 6) Is sensitive to, interprets, and involves different cultures, particularly indigenous culture
- 7) Consistently meets clients expectations
- 8) Marketing is accurate and leads to realistic expectations

Figure 7: Rosemary Black's eight principles of Ecotourism
(Source: Rosemary Black (no date), All about Ecotourism)

3.1.4 Where Ecotourism Stands in a Tourism Market Structure?

Ecotourism can be described as an alternative market segment to mass tourism (Mieczkowski, 1995). Figure 8 provides a reflection of how ecotourism fits into the larger tourism market place. Both adventure tourism and ecotourism are shown as sub-components of nature tourism. Any type of tourism that relies on nature based elements and activities can be recognized as a nature based tourism (Fennel as cited in Weaver, 2001). Ecotourism is constrained by the requirement to have a learning component and sustainable practices (Weaver, 2001). The primary motivation of Ecotourism is the observation and appreciation of nature and culture while adventure tourism is rather the physical exercise and challenging situations in natural environments, though both aspects are sub-components of nature tourism (WTO, 2001).

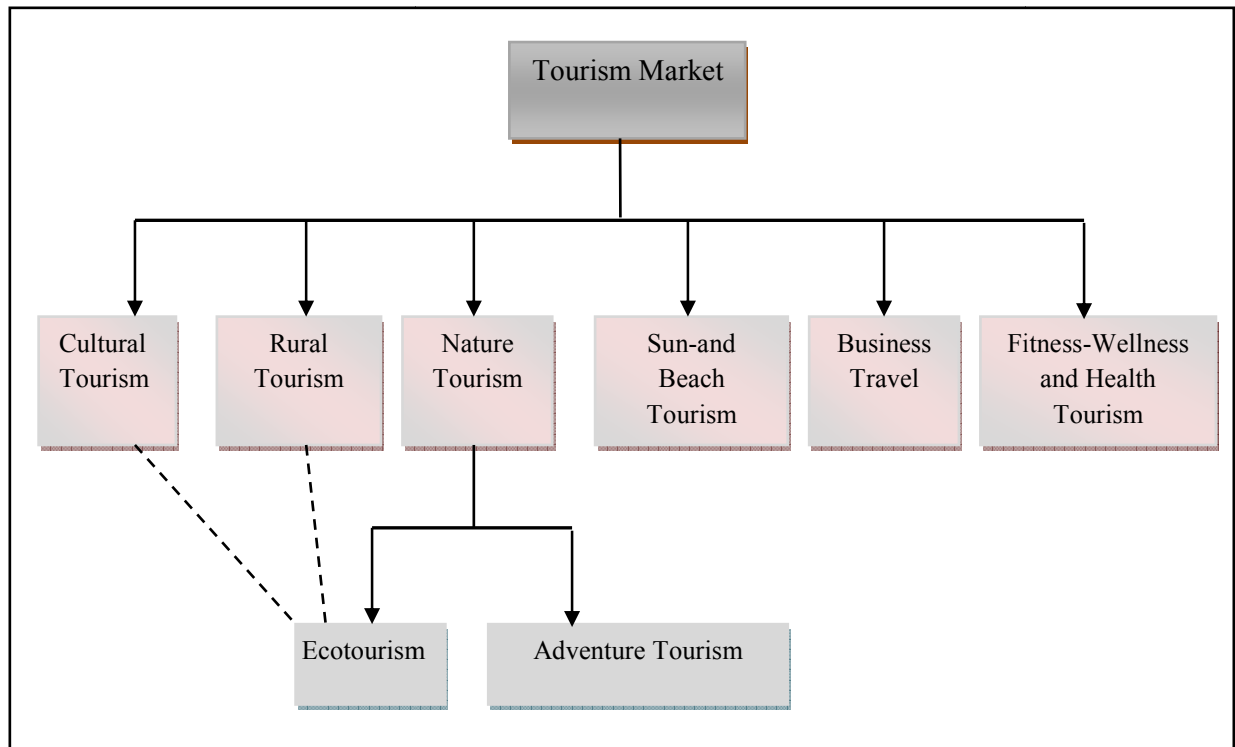


Figure 8: Structural framework of the tourism market and placement of ecotourism in the market structure
(Source: WTO, modified by Strasdas, 2001)

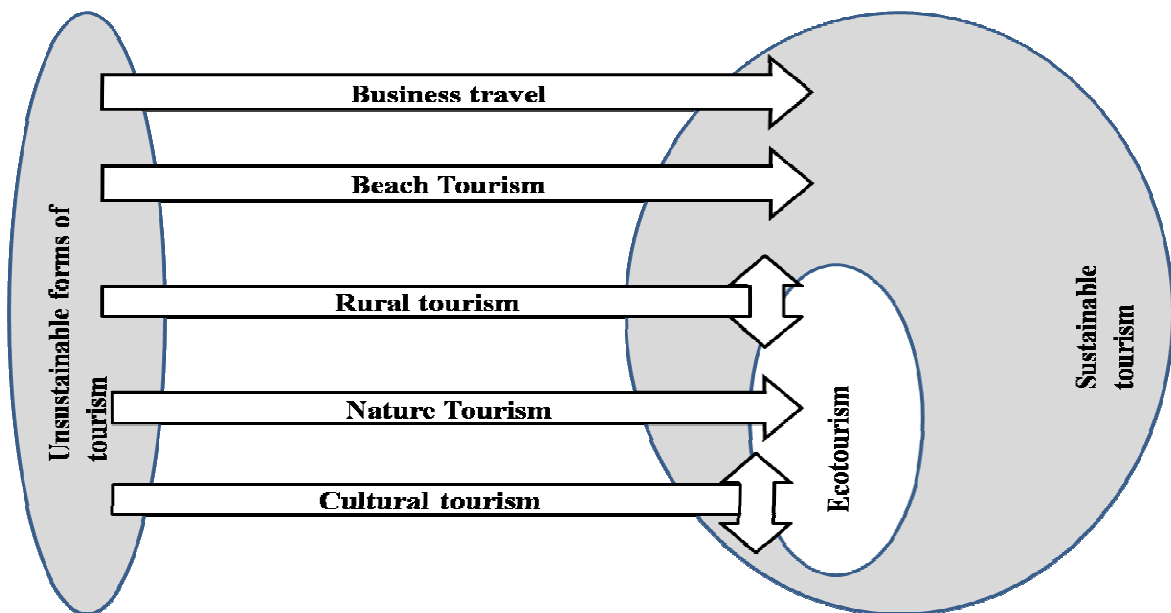


Figure 9: Role of ecotourism as a sustainable development tool
(Source: Strasdas, 2001, drawn by M. Meier)

The emphasis on sustainability recognizes the ecological and cultural elements as a key guiding principle in the management of ecotourism activities (Dowling, Blamey, Sano as cited in Diamantis, 1999). Figure 9 shows the role played by ecotourism in the field of sustainable tourism. Recent developments towards ecotourism guidelines, principles and ecotourism certification have created a general consensus on the basic requirements of ecotourism (UNEP, 2002).

3.1.5 Destination image

The destination image, as a recent addition to the field of tourism, has proven to be an important influential factor of tourism behavior (Pearce, 1982; Hunt as cited in Echtner & Ritchie, 2003). Therefore, the destination image plays an important role in many of the tourism behavior models (Schmoll, 1977; Moutinho, 1984; Woodside & Lysonski, 1989). According to Reynolds (1965), formation of the image may be described as the “development of a mental construct based upon a few impressions chosen from a flood of information”. Consumers gather information from a wide variety of sources including destination promotional materials (travel brochures, posters), referring friends, family, travel consultants, or travel agents, through general media (TV/magazine/radio), from regulatory bodies, or even browsing e-net.

Gunn (1988) described how the individual process of various information sources will formulate the destination image. He further explained the destination image formation passes through several phases. The phase 1 image formation primarily depends on non-commercial information sources such as general media (TV/radio/magazines), friends and family, and school education; Gunn (1988) identified the image formulated at phase 1 as an “organic image. At phase 2, commercial information sources such as travel consultants, travel guides, and destination promotional materials (travel brochures, posters) are involved.

The image formulated at the phase 1 can be altered or modified by the information gathered at phase 2. The image formulated at the phase 2 is labeled as an “induced image”. Finally, at phase 3 of image formation, according to Gunn (1988), consumers may modify the formulated image after visiting the destination through actual experience.

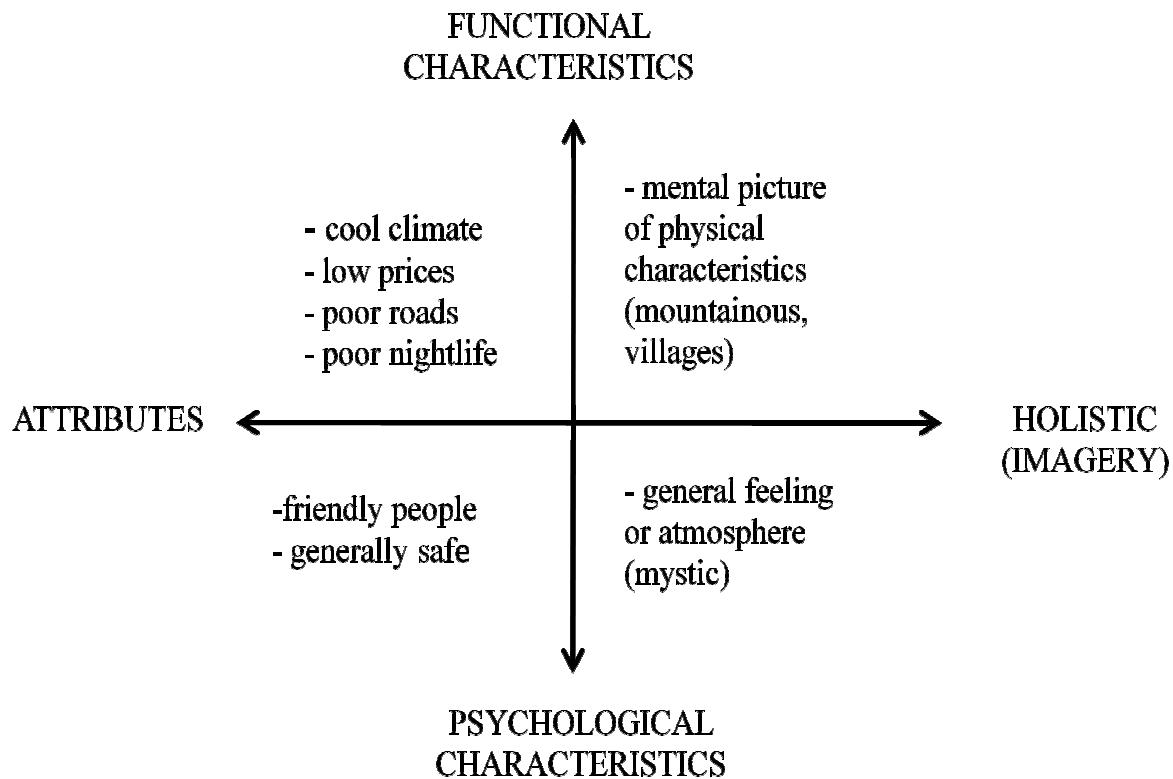


Figure 10: An illustrative example of four components of the destination image (Source: Echtner and Ritchie, 2003)

Using the framework of a retail store image, Echtner & Ritchie in 2003 developed an image conceptualization for Nepal as a destination. A measurement of the image, which encompasses different aspects of the destination image, is presented in Figure 10. As illustrated, a destination image encompasses perceptions of individual functional attributes such as price, climate, night life, and road conditions. The destination image also includes psychological attributes in regard to friendliness of the staff and general safety. Coupled with a destination image, a functional holistic image provides overall, measurable characteristic/s of the

destination, providing a mental picture of the destination. Finally, a psychological holistic image completes an overall impression about the destination.

3.1.6 How an Ecotourist is Distinguished from a Mass Tourist

According to the World Tourist Organization (2001), “tourists are people who are travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited”. Although the definition of a tourist seems similar to that of an ecotourist, an ecotourist enjoys and seeks to learn from the nature and culture visited, while maintaining a responsible attitude. Clarity about the facts that distinguish ecotravelers from other type of travelers becomes important to a traveler who wishes to visit as an ecotourist as well as managers and marketers for an ecotourism destination.

In past tourism literature, many researchers successfully identified those facts that distinguish ecotravelers from other traditional types of tourists. In general, the types of travel sites, criteria of on-site activities, and traveler motivation have been used to distinguish ecotourists from traditional tourists (Ballantine & Eagles, 1994; Blarney, 1997). For example, Tobias & Mendelsohn (as cited in Lee 2007) indicated that a tourist who simply entering a nature-based site an ecotourist. Other authors considered that tourists those who engaged in particular activities in accordance with ecotourism principles or participating in certain tours were ecotourists (Diamantis, 1999; Ceballos-Lascuráin, Eagles as cited in Lee 2007). Ballantine & Eagles (as cited in Lee 2007) applied motivational information to identify ecotourists. The continuum identified by Crossley & Lee (1994) to distinguish ecotourists from mass tourists is called a “primitive nature to entertainment,” which is characterized by certain variables, such as tourist’s characteristics, trip preferences, and benefits sought (Crossley & Lee, 1994).


	PRIMITIVE NATURE (Ecotourists)		
	Discriminant characteristics	Crossley and Lee (1994)	HLA/ARA (1994)
	Uncrowded	Visited uncrowded destinations off the beaten path	Not touristy/crowded
	Remote, wilderness	Experienced remote and unspoiled nature	wilderness experience/setting
	Learning about wildlife, nature	Increased knowledge about wildlife	Study or learn about nature
	Learning about natives, cultures	Interacted with native people	Study or learn about culture
	Community benefits	Supported economic benefits to local communities	a
	Viewing plants and animals	Saw usual plants and animals	Wildlife viewing (plants and animals)
	Physical challenge	Increased confidence through challenging adventure	Participating in physically challenging programs
	Shopping	Engaged in good shopping opportunities	a
	Dining	Enjoyed good food and drink	a
	Attractions	Enjoyed visiting famous attractions	Visiting popular attractions
	Nightlife	Enjoyed nightlife entertainment	a
	ENTERTAINMENT (Mass Tourists)		

Figure 11: Discriminant ecotourism benefits-sought continuum

HLA/ARA (1994) survey- HLA consultants and ARA consulting joint survey for North American ecotourism market

a - These elements were not investigated in HLA/ARA (1994) survey.

(Source: Adopted from Wight (1996) references)

Two years later in 1996, Pamela A. Wight strengthened the Crossley & Lee findings by reproducing many of their results. Crossley & Lee (1994) found out that benefits listed at the primitive nature end of the continuum (Figure 11) highly distinguished ecotourists from other tourists.

3.1.7 Sri Lanka

Ceylon was the former and widely known name of Sri Lanka. At present, officially it is known as the Democratic Socialist Republic of Sri Lanka (Sri Lanka: Fact sheet, 2007).

Sri Lanka lies in the Indian Ocean close to peninsular India separating from the Palk Strait. Sri Lanka is an island country which has a land area of 25,332 square miles (65, 610 square km), of which 1.8% is inland water (Sri Lanka: Fact sheet, 2007), and has a maximum length and a maximum width of 268 miles (432 km) and 139 miles (224 km) respectively (Sri Lanka: Fact sheet, 2007).

The south central region in the country is mountainous and rises to an elevation of 2,502 m. Mountainous are surrounded by broad lowland plains at an elevation of (0-75 m) above sea level. From the mountainous regions, nine major rivers and 94 other rivers flow across the lowlands into the Indian Ocean (UN country profile, 1997).

The average annual temperature is about 30°C in lowlands and about 20°C in highland areas (FAO, 2006). The average annual rainfall exceeds 1,270 mm in most parts of the country (FAO, 2006). Most of the rainfall is received from the Southwestern monsoon and a fair amount is received through the Northeastern monsoon, which only a moderate amount of rainfall is received through inter-monsoon periods (FAO, 2006).

3.1.8 Sri Lanka and Tourism

Sri Lanka is blessed with immense natural beauty including with an equitable climate and altitudinal variation within short distances (De Silva, 2004). The land base of Sri Lanka consists of a coastline extending over 1,585 km with a great diversity: warm blue coastal waters, coral reefs and sandy beaches, old forests full of diverse and unique wild life, wetlands, and hilly central region with gushing waterfalls and varying ecological systems (De Silva, 2004).

According to the World Tourism Organization (2001), Sri Lanka has 49 sites classified as unique attractions in addition to 91 rare attractions, 7 world heritage sites, and 6 of 300 known ancient monuments in the world, make Sri Lanka highly competitive for tourism.

Further, the small size of the island (65,610 sq. km) affords easy accessibility within several hours to diverse attractions in the country.

3.1.9 Current Situation of the Sri Lankan Tourism Industry

Traditionally, Sri Lanka's tourism industry has been oriented towards "sun and beach" tourism and well-known and for its remarkable landscape and hospitality. Sri Lanka has many more diverse tourist attractions than those of currently popular tourist destinations in the South Asian region. In the 1990s, understanding the importance of the tourism industry to the country's economy the government of Sri Lanka initiated restoration of the tourism sector. Introduction of the Tourism Master Plan reflects the biggest result of the government's effort to strengthen the tourism sector. Other than that, attractive incentives such as preferential tax rates and duty-free imports of raw materials and equipments were provided by the Sri Lanka Board of Investments to attract foreign investors in to the sector (Mathews as cited in Wei Lio, no date).

In regard to tourism's contribution to total Foreign Exchange (FE) earnings in 2009 was 2.6 percent, tourism remained 6th position in ranking behind to the private foreign remittances "(26.6 percent), tea (26.2 percent), textile and garments (9.5 percent), transportation services (6.9 percent) and rubber based products (3.1 percent) respectively (Sri Lanka Tourist Board, 2010).

Europe-west was the single largest source of tourism to Sri Lanka, accounting for 275,796 of tourist arrivals, followed by Asia-South with 63,600 tourist arrivals, Asia-North East with 27,723 arrivals, Asia-South East (23,646), Australia with 15,159 arrivals, Europe-East with 6,204 arrivals, Middle East with 4, 821, and others with 1,608 arrivals (Table 2) (Sri Lanka Tourist Board, 2009).

According to the Sri Lanka Tourist Board statistics, international tourist arrivals rose from 312,026 arrivals in 2008 to 314,215 arrivals in 2009 (Table 3).

Table 2: International tourist arrivals by regions (1999, 2007, 2008, and 2009)

Region	% Change						
	1999	2007	2008	2009	07/99	07/08	08/09
America-North	18,477	28,355	24,311	24,948	53.5	-14.2	2.6
Asia-North East	27,723	33,832	27,688	31,439	22	-18.2	14
Asia-South East	23,646	18,425	17,443	16,890	-22.1	-5.3	-3.2
Asia-South	63,006	148,360	127,911	126,205	183.5	-13.7	-1.3
Australasia	15,159	22,924	21,839	26,068	51.2	-4.7	19.4
Europe-West	275,796	194,448	167,187	170,123	-30	-14.2	1.8
Europe-East	6,204	25,573	29,440	26,310	312.2	15.1	-10.6
Middle East	4,821	13,554	16,776	23,741	181.1	23.8	41.5
Others	1,608	8,537	5,880	2,166	430.9	-31.1	-63.2
World	436,440	494,008	438,475	447,890	-13.2	-11.2	-2.1

(Source: Sri Lanka Tourist Board: Annual Report-2009)

Table 3: International tourist arrivals by country (2008 and 2009)

Region	2008		2009		
	Total arrivals	Percentage share		Total arrivals	Percentage share
India	85,238	19.4	India	83,634	18.7
U.K.	81,331	18.5	U.K.	81,594	18.2
Maldives	31,564	7.2	Maldives	31,916	7.1
Germany	30,625	7	Germany	29,654	6.6
Australia	19,536	4.5	Australia	23,239	5.2
Russia	15,797	3.6	France	15,886	3.5
U. S. A.	14,053	3.2	U. S. A.	14,241	3.2
Netherlands	13,030	3	Russia	11,834	2.6
France	10,594	2.4	Netherlands	11,291	2.5
Canada	10,258	2.3	Japan	10,926	2.3
Total	312,026	71.1	Total	314,215	69.9

(Source: Sri Lanka Tourists Board: Annual Report: 2009)

In 2009, India, UK, Maldives, and Germany were the major tourism producers. Those four countries alone account for approximately 50 percent of the total tourist arrivals to Sri Lanka (Sri Lanka Tourist Board, 2010). The other important tourism generating markets are France, U.S.A., Russia, Netherlands, and Japan in the East Asia (Sri Lanka Tourist Board, 2009).

3.1.10 Sri Lanka Tourism Industry: SWOT Analysis

➤ Strengths

- Small island country with an ideal tropical climate for tourism
- High biological diversity, both flora and fauna
- Protected areas with undisturbed nature which are ideal destination for ecotourism
- Smallness of the country allows easy access to different destinations
- Hospitality oriented culture favor tourism
- Post war condition in the country increased the safety and security of tourists
- High tendency in private sector involvement in both sun and beach tourism as well as ecotourism

➤ Weaknesses

- There is no consensus as to which indicators are the most appropriate for measuring sustainability within the ecotourism sector, or within tourism as a whole.
- Little is known about benchmark and threshold values that should be designated for the indicators that are selected to monitor sustainability.
- Sustainability is a long term prospect, but the financial and political realities that underlie budget allocations for the costly process of sustainability monitoring are inherently short term.
- Administrative fragmentation and do not have a good coordination among government agencies, private operators, NGO's etc.
- Lack of Research and Development , specially on destination marketing
- Internal road transportation system is not up to the standard in some areas.

➤ Opportunities

- Wide-ranging nature reserve and diverse cultural heritage create Sri Lanka a great potential to cater up market ecotourists.

➤ Threats

- The total replacement of traditional economic activities such as fishing and farming.
- Local communities therefore become dependent on unreliable tourist dollars.
- Development of mass tourism and luxury tourism also have common ramifications such as;
 - social polarisation,
 - inflation of property prices,
 - increased cost of living,
 - deculturation.
 - congested traffic,
 - increased environmental pollution
 - unsightly development

3.1.11 Sri Lanka and Ecotourism

The concept of ecotourism has wide applications, particularly for biodiversity-rich countries with unique natural attractions. Ecotourism in Sri Lanka is a niche market that is yet to be reached in growth potential. Compared to other alternative tourism sectors (natural tourism and cultural tourism), ecotourism is the fastest growing tourism subset in the country to divert tourists from sun and beach attractions towards natural/cultural attractions (Wei Lai, no date). Sri Lankan government has initiated several attempts to promote ecotourism in the country. A National Ecotourism Policy Plan is one promotion, formulated to promote Sri Lanka as a unique, ecotourism destination (Mathews as cited in Wei Lai, no date). In recognition of the benefits of ecotourism to island nations such as Sri Lanak, the Ministry of Tourism declared the year 2000 as the “Year of Ecotourism”.

In 2001, the 13th Pacific Asia Travel Association Ecotourism Conference and Travel Mart was held in Colombo. The government supported the notion that these events and activities would benefit Sri Lanka as an ecotourism destination (Wei Lai, no date). In addition to the government support to promote ecotourism in the country, a few small-scale, private, tourism operators established forest-based destinations for the ecotourism market. For example, the Woodlands Network was established in 1994; since that time, the network has attracted an increasing number of foreign independent tourists, mostly from Germany, who prefer to learn about the customs, culture, environment, and history of the country (Wei Lai, no date).

3.1.12 Sri Lanka: Resource Base for Ecotourism

Sri Lanka has a natural and cultural ecotourist resource base, inclusive of forests, mountains, endemic flora and fauna, ancient ruins, and a heritage contemporary to that of the Greeks and Romans, second to none in the world (De Silva, 2000). There are many national parks and sanctuaries in Sri Lanka that offer an opportunity to observe real wild life and habitat. Today, Sri Lanka preserves include 12 national parks, 51 sanctuaries, and three strict natural reserves (Yala SNR, Knuckles SNR and Ritigala SNR) (De Silva, 2000).

The bio-diversity in Sri Lanka (per square kilometer of surface area) is said to be higher relative to the other countries in Asia (travel-srilanka.eu). Sri Lanka is one of the 25 bio-diversity hotspots in the world, with a high index of endemism. There are some 751 known species of amphibians, birds, mammals, and reptiles, according to the figures from the World Conservation Monitoring Centre (2004). Out of this, 21.7 percent are endemic, existing in no other country) with 11.9 percent now threatened by extinction. Sri Lanka is a home to at least 3,314 species of vascular plants, of which 26.9 percent are also endemic (Table 4) (World Conservation Monitoring Centre, 2004).

Favorable geography and climate, easy access for natural attractions, high bio-diversity, wild flora and fauna, and natural beauty of the country combine to provide Sri Lanka with a tremendous potential for ecotourism practices, for over shadowing other countries in the region. Yet, even though the country has a great potential to develop ecotourism, research specific to the country remains limited in the ecotourism marketing literature.

Table 4: Wildlife and plant diversity of Sri Lanka, 2004

	Wildlife	Vascular plant species
Total species	751	3314
Endemic species	163	890
Threatened species	89	280

(Source: www.rainforests.mongabay.com, 2006)

3.1.13 Sri Lanka: Forest-Based Destinations for Ecotourism

Sri Lanka has high diversity of rain forests. In 2002, the closed canopy forest cover of the country is about 22.4 % of the total land area (Ministry of Env. and Natural Resources, 2002).

Sri Lanka's forests are classified into five distinct types based on the climate and existing species (Table 5). The different climatic zones allow tropical as well as temperate trees to flourish. The abundant undergrowth and tall trees are common in wet zone tropical forests while arid scrubland and galipot palms are prominent in the dry northern and eastern regions of the island.

According to Weaver (2001), publicly managed protected areas have an overwhelming setting for ecotourism related activities. Designated 501 protected areas in Sri Lanka are administered by the Department of Forest Conservation and the Department of Wildlife Conservation. Flora and Fauna Protection Ordinance has recognized Sri Lanka's protected areas under five categories namely, strict nature reserves, national parks, nature reserves, jungle corridors, and sanctuaries. Total extent of protected areas is 1,767,000 ha which accounts for 26.5 percent of total land area.

Table 5: Forest classification in Sri Lanka

Forest type	Dominant communities or species	Bio-climatic zone
Wet Evergreen Forest (Tropical Rainforest)	Dipterocarpus (low and mid altitudes)	Low and Mid Country Wet zone
	Mesua-Doona-Shorea (mid altitudes)	
	Camnosperma- Zeylanica (Adam's Peak range)	
	Vitex-Wormia-chaetocarpus-Anisophyllea (low altitudes)	
Tropical Montane Forest	Syzgium -Colophyllum-Gordonia-Michelia (widespread)	Montane Wet Zone
	Stemonoporus (Adam's Peak range)	
Intermediate Evergreen Forest	Intermediate between Wet evergreen and Dry Mixed Evergreen	Low and Mid Country Intermediate Zone, and Montane Intermediate Zone
Dry Mixed Evergreen Forest	Manikara-Drypetes-Chloroxylon (wide spread)	Dry Zone
	Alseodaphne - Berrya - Diospyros (more humid conditions)	
Semi-Evergreen Thorn Forest	Manikara hexandra, Salvadora persica, Dichrostachys cinera, Acacia Spp.	Arid Zone

(Source: Wijesinghe et al., 1993 in FRA 2000)

Sri Lanka maintains a relatively high percentage of protected areas than many other countries in the world and it is the highest recorded in Asia (wildlifesrilanka.org, 2010). Also, Sri Lanka has a high profile protected areas which can be considered as an iconic tourists attractions. Sinharaja primary rainforest, for example, has been designated as a biosphere reserve as well as a world natural heritage site. Most visited national parks and sanctuaries in Sri Lanka are illustrated in Figure 12.



Figure 12: Most visited national parks and sanctuaries of Sri Lanka
(Source: FAO, 2000)

a) Sinharaja Forest Reserve

Sinharaja is the largest remaining span of tropical lowland rainforest, which once covered the entire south-western quarter of Sri Lanka. Sinharaja is one of the remaining virgin forests in the world. Today, it covers an area of 11,187 ha and extends over Galle, Matara and Ratnapura districts, and includes virgin rain forests. It is located between $6^{\circ} 21' - 6^{\circ} 27'$ Northern Latitudes and $80^{\circ} 21' - 80^{\circ} 38'$ Eastern longitudes. Spreading over an altitudinal range of 210 m to 1180 m above mean sea level (msl), Sinharaja consists of lowland and sub-montane tropical wet evergreen forests and sub-montane grasslands. The magnificent rain forests, with their variety of lush vegetation, support a rich composition of birds, including many of the island's endemics. Sinharaja was designated a World Biosphere Reserve in 1978 and a World Natural Heritage Site in 1988 (De Silva, 2000).

b) Yala National Park

Yala National Park is Sri Lanka's most famous and most visited national park, attracting hundreds of thousands of travelers worldwide. The park consists of five blocks covering 377 square miles. The park is located in an arid climate and one edge of the park is consisted for North Eastern coastal fringe. Visitors can observe different vegetation types varied from monsoon forests (both humid and dry) to thorn forests to deciduous forests within the park area (ceylonluxury.com, 2010). This is a designated area for wild life and visitors can enter the park with advanced booking or purchasing tickets at the entrance (Tariq, 2005). Freely lingering elephants, sambhur, buffalo, deer, wild boar, snakes, lizards, crocodiles, birds and many other animals can be seen for those who enter the park (Tariq, 2005).

Activities that visitors can undertake in the national park are nature based and they range from leopard watching, bird watching, caving, cycling, mountain biking, hiking or trekking, off-road adventures, rock climbing to safaris. Most activities inside the park are administered in accordance with the ecotourism principles by specially trained trekkers. Visitors to the park will usually accompanied by an experienced Department of Wildlife Conservation trekker who can provide educational information. When touring the park, visitors follow the map tracks and they must stay inside the vehicle at all times, except a few designated spots, to ensure minimum impacts to wildlife and the environment (Tariq, 2005).

c) Horton Plains National Park

Horton Plains is an ideal destination for hikers and nature lovers and it is located in the highlands of the country. Kirigalpotta & Thotupola, the second and the third highest mountains of the country, can be found within the borders of the park. Area of the Horton Plains extends over 3160 hectares and is characterized by montane cloud forests and wet montane grasslands.

Mist and clouds along with cold climate are common due to the hilly geography. Horton Plains have been identified as the best elephant habitats in the country (srilankareference.org, 2010). Despite wildlife and Montana vegetation, a primary attraction of the area is the 1000m escarpment known as the “world’s end”. Horton Plains functions as a watershed for two major rivers in the country known as “Kelani” and “ Mahaweli” (Wickramagamage and Alagan, no date).

3.2 Consumer Behavior

Much of the text in this subsection is devoted to a better recognition of terms related to consumer behavior including information search behavior and how they can be useful in developing better marketing strategies.

3.2.1 Buyer Decision Process

The goal of marketing is to induce consumers to choose them from many available options. Consumers tend to apply various choice strategies for different products and services. A consumer’s buying process is a multi-step process. Consumer’s buying process starts with the recognition of needs and wants (Figure 13). According to Maslow’s hierarchy consumer needs are positioned in one of five categorical needs: 1) physiological needs (hunger, thirst), 2) safety and security needs (security, protection) 3) social needs (sense of belonging, love), 4) esteem needs or ego needs (self-esteem), and 5) self-actualization needs (Figure 14) (Ziethmal et al. 2009). Once the need is recognized the consumer engages in different strategies to choose the ideal product/service. Detailed information is the most common choice that consumers select when buying products/services to fit personal needs. Information search is more apparent in services than goods, due to unique service characteristics such as intangibility, heterogeneity, perishability, and simultaneous consumption and production (Rodie and Martin, 2001).

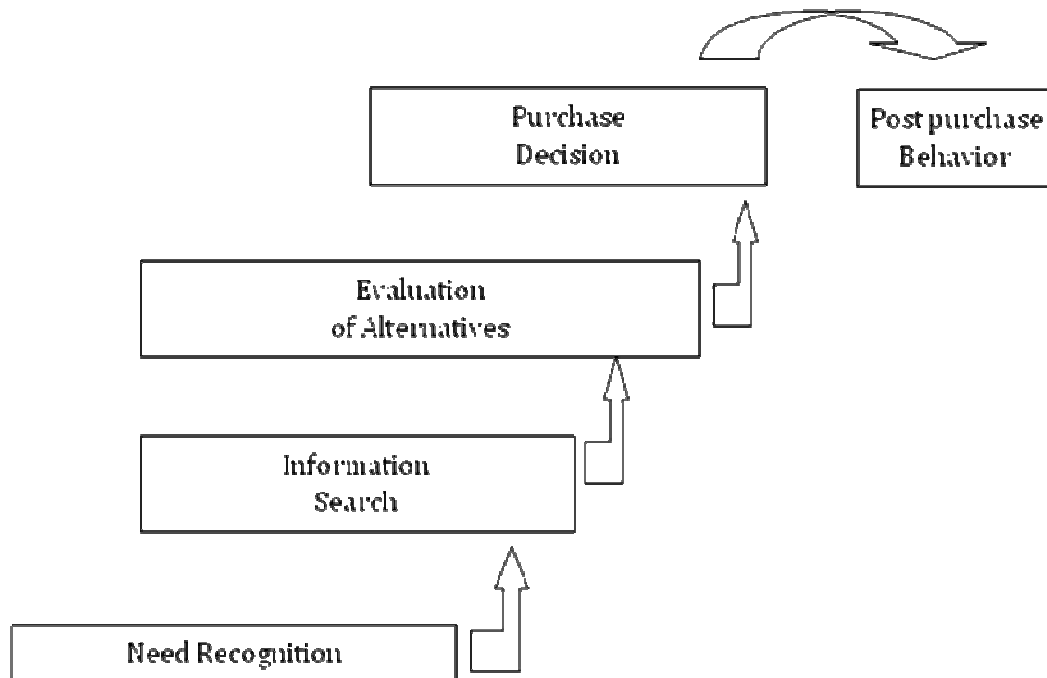


Figure 13: Multi step buyer decision process
 (Source: Kotler et al., 2003, Consumer markets and Consumer Buying Behavior)

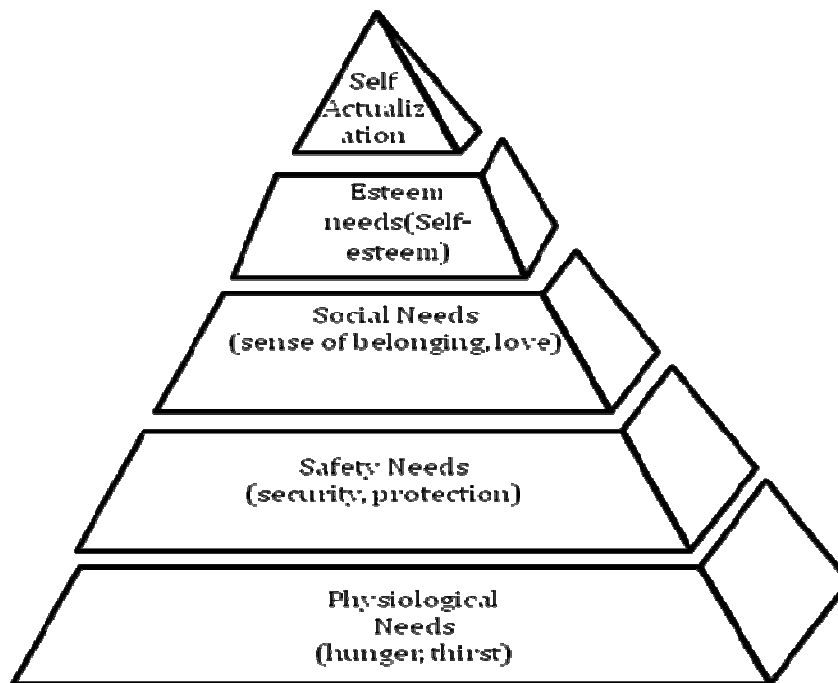


Figure 14: Maslow's hierarchy of needs
 (Source: Kotler et al., 2003, Consumer markets and Consumer Buying Behavior)

Evaluation of alternatives provides the next step in the consumer's buying process to choose the best fit out of many alternatives. According to Assael (1984), consumers tend to engage in covert "cost-benefit" analysis when selecting a decision making procedure. Following evaluation of alternatives, a consumer makes the purchasing decision. Interestingly, consumers pay all or part of the purchase price for a service, even before they experience it. This is very true in certain services such as vacation tours and home remodeling (Zeithmal et al. 2009). The final step of the buying process is post-purchase evaluation. This will be retained in consumer's mind as an internal memory, to be used in future purchases (Assael, 1984).

3.2.2 Product Properties and Consumer Behavior

The consumer is the spirit of effective services marketing. Therefore, the primary objective of service marketers is to develop and provide offerings that satisfy customer needs and expectations. Basically, there are two categorical properties in consumer products: 1) properties that a consumer can determine before purchasing a product such as search qualities and attributes, and properties that may be discerned only after purchase or during consumption, such as experience qualities and attributes. Consumer tangible products such as clothing or furniture are high in search qualities while intangible products or services are high in experience qualities. There is another category called credence qualities, which includes characteristics that a consumer may find difficulties in evaluating the product/service even after purchase and consumption (Zeithmal et al. 2009). As illustrated in Figure 15, products high in search qualities are relatively easy to evaluate and products high in credence qualities are most difficult to evaluate (Mitra et al., 1999, Zeithmal et al. 2009). Products high in experience qualities lie between these two evaluations. Figure 15 is evident that services are more difficult to evaluate than goods, particularly in advance of the purchase (Murray, 1991).

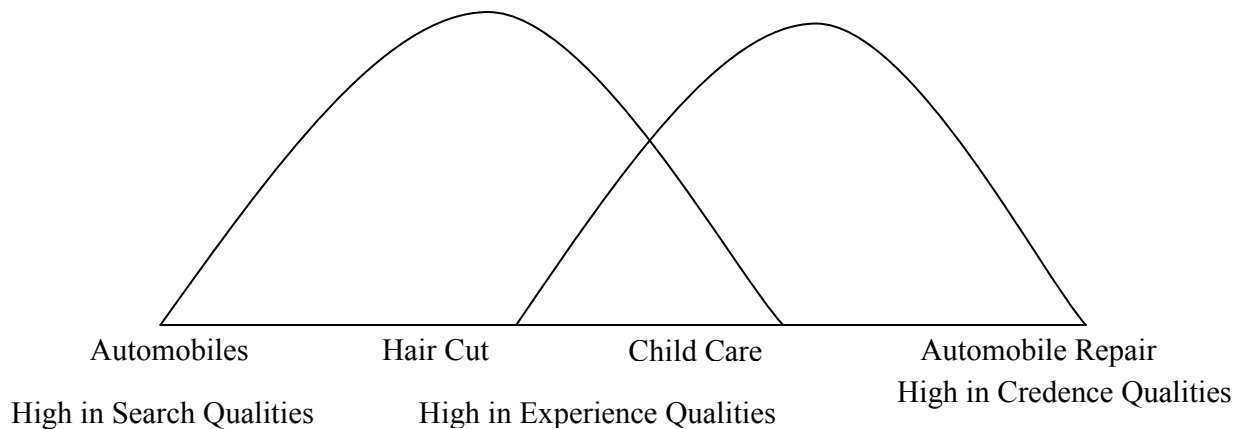


Figure 15: Continuum of evaluation for different types of products
(Source: Zeithmal et al., 2009, Services Marketing)

The production, consumption, evaluation, and decision-making process of a service differ from that of a durable good. Unlike purchasers of goods, service consumers do not benefit from anything tangible. Further, services cannot be inventoried, readily displayed or communicated, easily patented, or be returned and resold (Zeithamal et al. 2009). In addition, there is no guarantee that the service delivered matches what was planned and promoted (Zeithamal et al. 2009). When the product reaches the right end of the continuum or when the product departs from high search qualities, consumers rely more on different cues and processes to evaluate the product (Zeithmal et al. 2009). It has been argued that information may be treated as one of the most important cues which determine consumer behavior (Assael, 1995). Consumer information search behavior for services is significantly different from information search behavior for goods (Teare, 1992; Gurosy, 2004). Consumers are often compelled to be more involved in pre-purchase information searches for services than for product purchases (Moutinho, 1987). Therefore, providing consumers with accurate and reliable information in all aspects of a particular service will enable customers to access more informed purchasing decisions. Also, these decisions can drive changes in markets and the types of products/services which are provided (dtsc.ca.gov, 2010).

3.2.3 Pre-purchase Information Search Behavior

Consumer pre-purchase information search has been one of the most continuing literature streams in consumer behavior literature (Beatty & Smith, 1987). A consumer pre-purchase information search can be defined as “ Information seeking and processing activities which one engages in to facilitate decision making regarding some goal objects in the market place” (Kelly 1968 in Bloch et.al., 1986). Table 6 represents a framework to explain the determinants, motives, and outcomes of pre-purchase searches (Bloch et.al. 1986). A framework for consumer information search explains the drivers in a pre-purchase information search.

Table 6: Determinants, motives, and outcomes of pre-purchase search

Determinants	Involvement in the purchase
	Market environment
	Situational factors
Motives	To make better purchase decisions
Outcome	Increased product and market knowledge
	Better purchase decisions
	Increased satisfaction with the purchase
	outcome

(Source: Adopted and modified from Bloch et al., 1986)

Marketing and consumer behavior researchers have examined consumer’s pre-purchase information search behavior since at least 1917 (Copeland, 1917). Today, most consumer information processes and decision making models include pre-purchase information search as one of the key components (Engel, Blackwell & Miniard 1993; Olshavsky, 1985). Since that time, many studies have been carried out on consumer pre-purchase information search behavior (Fondness & Murray, 1998, Gurosy, 2004; Lo et al. 2002; Luo et al. 2004).

3.2.4 Pre-Trip Information Search Behavior in Tourism Industry

Tourism is a service industry where management focuses on productivity and quality of the service (Otto & Ritchie, 1996). Quality of the service is often rated by satisfaction (Qu & Tsang, 1998). Satisfaction is measured by the difference between expected and experienced service (Gronroos as cited in Reichel et al. 1999, Zeithmal et al. 2009). Consumer satisfaction is increased by narrowing the gap between expected and experienced service. Expected quality of the intangible service is determined by marketing communication tangibles, word of mouth, image, and customer needs, while experienced quality is determined by the technical and functional quality mediated by the image (Kotler, 1997). Information sources are one of the marketing communication tangibles that consumers use to perceive a service quality. Consumers tend to engage in an extended search when purchasing higher priced, and more complex services, which intrinsically create a greater perceived risk (Beatty & Smith, 1986), such as overseas travels.

Different facets should be ascribed to the traveler's pre-purchase information search behavior, with special attention to marketing communication, which influences the expected quality. Information searching is necessary to select a destination and for on-site decisions such as selecting accommodation, transportation, and tours (Filiatrault & Ritchie, 1980; Jenkins, 1978; Perdue, 1985; Snepenger et al., 1990). Destinations, in particular, embrace this approach by producing marketing-oriented information such as brochures, maps, videos, magazines, and newspaper advertisements, as well as participating in editorial communications including guidebooks, destination publications, magazines and newspaper articles (Vogt & Fesenmaier, 1998). Like many other fields such as consumer behavior and marketing, conceptual and empirical attempts in information search behavior are extensive in tourism literature

(Etzel & Wahlers, 1985; Fodness & Murray, 1997, Raitz & Dakhil, 1989; Schul & Crompton, 1983; Snepenger & Snepenger 1993; Woodside & Ronkainen, 1980). In the tourism literature, Schul & Crompton (1983) examined the travel-specific psychographic statements and socio-demographic variables used to predict and explain the external information search behavior of international travelers. Fodness & Murray (1998) proposed that leisure traveler perceptions of tourist information sources are based on three underlying dimensions: space, time, and operation. Also, travelers can be divided into homogenous groups based on the combination of information sources used. Fodness & Murray (1999) expanded their study to test how search contingencies, individual tourist characteristics, and information search strategies are related to behavioral search outcomes. Woodside & Ronkainen (1980) found that only about 20 per cent of travelers to South Carolina utilize travel agents, motor clubs, and tour operators to help plan their trips. They also noted that overseas, first-time travelers to a destination were prone to using travel agents and tour operators more frequently (Woodside & Ronkainen, 1980). Snepenger et al. (1990) studied the information search strategies of first time visitors to Alaska. Their study indicated that a large segment of first-time visitors to Alaska utilized travel agents as the main source of external information. Fesenmaier & Vogt's study (1992) on the use of information at state welcome centers suggested that a majority of travelers stopping at the welcome centers did not utilize any external information sources prior to their trip. Lo et al. (2002) compared the business and leisure travelers' information search behavior with special reference to the information sources they use. In 2004, Luo et al. found how the Internet, as a new form and popular mode of media, increased tourist pre-trip information search behavior. Ultimate conclusion of these findings implied that travelers usually engage in external information search, before they make their travel decisions.

3.2.5 Importance of Market Segmentation and Customer Profiles

Consumer behavior includes all the actions consumers take to acquire, use, and dispose of products and services (Mowen & Minor, 1998). Pre-purchase information search, the purchase of a product or service, and the recommendation of the product or service to another person are some examples of consumer behaviors. Consumer behavior tends to differ with the product, market, environment, and service (Assael, 2004). Therefore, to understand consumer behavior, it is essential for marketers to develop appropriate market segmentation strategies, and to tailor services, prices, promotions, and distribution channels to fit diverse customer needs. Market segmentation is a widely accepted marketing tool in services including tourism to divide large market in to homogenous market groups based upon similarities exists among group members.

On the other hand, firms are constantly differentiating their products/services to meet the needs of diversifying customers. Most of the time, mass marketing is not sufficient to be succeeded in the competitive market place. When customers are grouped in according to their varying needs and wants, marketing opportunities may increase. Therefore, marketers must analyze the needs and wants of different customer groups or market segments to identify the niche. Also, segments or target markets should be large enough and accessible to the business to supply a solid customer base. Market segmentation allows firms efficient use of existing resources by selecting and focusing on the most responsive segments over the others and with a greater chance of success. Also, segmentation helps to identify hidden customer needs and make improvements to existing products by differentiating products and services or redesign new products and services to meet targeted customer's specific needs and desires.

On the other hand, learning more about competitors helps to improve a company's competitive positioning by accurately differentiate the company from the competitors.

One way a company can reduce the competition is by targeting a well identified narrow market and establishing a niche. Identifying a niche refines pricing to maximize revenue by targeting price premiums (marketsegmentation.com, 2010).

Derived market segments may be profiled using a variety of factors, including socio-demographics such as age, gender, education, income, and certain other characteristics which are important for marketers. Identifying a profile for each segment will allow understanding of how to reach each segment, by allowing marketers to visualize the people that they are trying to reach. Ultimately market segmentation increases customer satisfaction and loyal customer retention. Segmentation optimizes a company's marketing resources to allow the most impact for the investment. Therefore, market segmentation is a proven way of improving profitability.

3.3 Major Statistical Methods Employed in this Study

Cluster analysis along with the Structural Equation Modeling (SEM) was the major statistical tools employed in the current study.

3.3.1 Structural Equation Modeling (SEM)

Since the introduction of Structural Equation Modeling (SEM) in marketing, the concept has been used extensively in measurement and hypotheses testing in various empirical models (Bagozzi, Oliver & Bearden, Shimp & Kavas as cited in Bagozzi and Yi, 1988). SEM may be defined as a “multivariate technique combining aspects of multiple regression and factor analysis to estimate a series of interrelated dependence relationships simultaneously” (Hair et al. 1998). SEM consists of a logical five-step process: 1) model specification, 2) model identification, 3) model estimation, 4) model testing, and 5) model modification.

Prior to data analysis, a researcher must construct the implied theory based on relevant theories, information, and research (Schumacker & Lomax, 2004).

This initial step in SEM is known as model specification. Although SEM permits the implications of a causally structured theory to be expressed, the analysis itself does not contribute to the establishment of causality (Grace & Bollen, 2005). In SEM, a single indicator variable is sufficient to represent an independent or dependent latent variable (Schumacker & Lomax, 2004). However, a single indicator variable would not be recommended as a reliable and a valid measurement for a latent variable (Schumacker & Lomax, 2004). In other words, if we use a single indicator variable to measure a latent variable, we must assume that typically, the latent variable is perfectly measured by the single indicator variable. If the single observed variable is not reliable, it will not sharply define the latent variable. Further, a single indicator variable cannot model the error term, which should set as fixed. Therefore, it is always recommended to use multiple indicator variables to measure latent variables (Schumacker & Lomax, 2004). In model identification, SEM identifies model parameters based on the sample data contained in the sample covariance matrix (S), as well as, the theoretical model implied by the population covariance matrix (Σ). Model estimation means the estimation of model parameters specified in the model as closely as possible to the sample covariance matrix (S). A perfect model fit can be observed with a $\chi^2 = 0$ when $(S - \Sigma) = 0$ (Elements in sample covariance matrix S – Elements in population covariance matrix $\Sigma = 0$) (Schumacker & Lomax, 2004).

Most available software provides several fitting functions to minimize the difference of $(S - \Sigma)$. Once the parameters are estimated for the given model, a researcher should test the model to see how well the obtained data fit the hypothesized model. A model fit can be tested using either a global-type omnibus test for the entire model fit, or a test to examine individual parameters of the model (Schumacker & Lomax, 2004). Lastly, model modification is carried out if the fit of the implied model is not strong enough as it would be.

Model modification re-specifies the model, and retests the model fit globally or individually to see whether the model fit in the newly re-specified model.

3.3.2 Model Fit Assessment in SEM

SEM technique was designed to find a statistically significant model that also has a practical meaning in the real world (Shumaker & Lomax, 2004). Numerous criteria have been used by different researchers to assess the model fit (McDonald & Ho, 2002). A researcher can typically evaluate the following three criteria to assess the model fit.

- 1) The non-statistical significance of the chi square test and the root mean square error of approximation (RMSEA). Chi-square statistics and RMSEA are considered to be global fit measures (Shumaker & Lomax, 2004). Chi square statistics is one of the most commonly used statistics to assess the model fit (Lee, 2009). Chi-square compares the theorized model's co-variance matrix with the observed co-variance matrix (Shumaker & Lomax, 2004, Lee, 2009). A value of (<0.05) for RMSEA suggests a acceptable model fit. Table 7 indicates numerous model fit statistics and their acceptable fit values.
- 2) Statistical significance of the parameters estimated for the model paths. Statistical significance of the parameters is assessed by checking the critical t-value of the relevant parameter. Critical t-values are computed by dividing the parameter estimates by its respective standard errors (Shumaker & Lomax, 2004). Typically SEM softwares' compare computed t-values with the tabulated t-value of 1.96 at the .05 level of significance (Shumaker & Lomax, 2004).
- 3) The magnitude and the direction of the parameter estimates. An individual can assess the positive or negative coefficient suggests by the model makes a theoretical meaningful sense.

Table 7: Model fit criteria and acceptable fit interpretation

Model fit criterion	Acceptable level	Interpretation
Chi-square	Tabled χ^2 value	Compares obtained χ^2 value with tabled value for given df
Goodness-of-fit (GFI)	0 (not fit) to 1 (perfect fit)	Value close to 0.95 reflects a good fit
Adjusted GFI (AGFI)	0 (not fit) to 1 (perfect fit)	Value adjusted for df, with 0.95 for good model fit
Root-mean-square-residual (RMR)	Researcher defines level	Indicates the closeness of Σ to S matrix
Root-mean-square-error of approximation (RMSEA)	<0.05	Value less than 0.05 indicates a good model fit
Tucker-Lewis index	0 (no fit) to 1 (perfect fit)	Value close to 0.95 reflects good model fit
Normed fit index	0 (no fit) to 1 (perfect fit)	Value close to 0.95 reflects good model fit
Normed chi-square	1.0-5.0	Less than 1.0 is a poor model fit; more than 5.0 reflects a need for improvement
Parsimonious fit index	0 (no fit) to 1 (perfect fit)	Compares values in alternative models
Akaike information criterion	0 (no fit) to negative value (poor fit)	Compares values in alternative models

(Source: Adopted from Shumaker & Lomax, 2004)

3.3.3 Why Conduct SEM?

Joreskog was first investigated a method for the simultaneous maximization of several variable functions and formulated a method to analyze a model covariance structure (Joreskog as cited in Fornell & Larcker, 1981). Realizing the advantages of this statistical method, later research applied this method in various disciplines. SEM allows social scientists to perform path analytic modeling with greater flexibility, and therefore has advantages over other statistical methods, such as principal components analysis, factor analysis, discriminant analysis, or multiple regression analysis (Fornell, 1987). SEM utilizes multiple observed variables, unlike basic statistical methods which use only a limited number of variables. Using multiple observed variables enables researchers to develop sophisticated theories in their scientific disciplines. In

other words, SEM allows complex theories to be modeled and tested. The other most important reason for SEM to be more popular is its explicit consideration of measurement error terms in the model (Hair et al. 1998, Schumacker & Lomax, 2004). SEM includes observed variables, and latent variables, as well as error terms in a single model.

Advanced SEM tests interactional effects among variables other than the direct affects. This will help researchers to test advanced theories and models over other basic statistical methods. Last but not least importance of SEM necessitates the user-friendly software packages. At present, many SEM software packages are not only windows-based, but also are easy to use with drop-down menus and drawing programs, such as AMOS from SPSS (Schumacker & Lomax, 2004).

CHAPTER 4: RESEARCH METHODS

This chapter basically discusses the means of data collection, method of site selection, size of the sample, sampling distribution, and statistical methods used in this current study.

4.1 Research Instrument

A survey questionnaire was used as the research instrument. Since long questionnaires are somewhat difficult to administer, most of the time they will include all the necessary items which enhance statistical properties (Augillar, 2007). According to Dillman et al. (1993), the response rate can be relatively low when a questionnaire includes items related to personal information, such as name and residence.

Non-response bias in sampling is evident in survey research. This lack of information occurs when a researcher fails to obtain responses from a representative sample of the population or there are missing member responses. Sample members are deemed to be missing members or non-respondents when they refuse to respond, the researcher is unable to reach the respondent, or the respondent is unable to respond (Yu & Cooper, 1983). Improved research design has been identified as a remedy to reduce non response bias (Churchill, Kish & Hess as cited in Yu & Cooper, 1983).

The survey instrument was developed with the consideration of above facts in mind. This survey was pre-tested using 5 local tourism experts, 8 academia, and a pilot sample of 25 undergraduate students studying at a local university in Sri Lanka. The questionnaire was revised and finalized, based on feedback from the pre-test. The final version of the questionnaire is presented in Appendix 1. Survey items in the questionnaire were carefully designed to include necessary questions to cover study objectives. In addition to the basic questions regarding ecotourism concepts, the survey questionnaire is comprised of several sections.

Those sections of the survey were designed to address research questions identified by the author by means of a thorough examination of the peer-reviewed literature. The first section of the questionnaire consists of questions related to input variables; cost of information search, and information source characteristics. Information source characteristics as having four constructs, as well as cost of information search as having three constructs. The second section of the questionnaire focuses on external information sources while, the third section focuses on information processing techniques. Most of the indicator variables to measure model constructs were extracted from past literature; some were specifically designed for the purpose of current study. Six survey items were designed to measure external information search, while five items measured information processing techniques.

The second research question of this study examines the influence of traveler information processing on the pre-trip destination image. Third fourth section of the questionnaire was designed to measure destination image, using five items. The third research question is to examine the effect of the destination image on travel-related search outcomes. Travel-related search outcomes were measured using five underlying constructs found in the fifth section of the questionnaire while sixth section includes questions related to the trip information, i.e., trip duration, trip purpose, estimated expenses etc. The last section of the questionnaire gathered the respondent's socio-demographic information. The questionnaire includes scale, fixed, and open-ended questions to allow respondents to express those thoughts and ideas that were not covered by the fixed format questions. The scales of measurement are nominal, ordinal, and interval. In addition, the 5-point scaling questions, anchored by 1 = strongly disagree to 5 = strongly agree, measured the respondents' level of agreement with various aspects of the survey that addressed information searching, information processing, pre-trip destination image, and search outcomes.

4.2 Study Sites

The current study selected three publicly-managed, forest-based, protected areas in Sri Lanka with diverse ecological variations and differing ecotourism settings. The three selected study sites were, Sinharaja Rain Forest, Horton Plains National Park, and Yala Wildlife Sanctuary. Sinharaja Rain Forest is located between 6° 21' - 6° 27' Northern Latitudes and 80° 21' - 80° 38' Eastern Longitudes. Spreading over an altitudinal range of 210 m to 1180 m above mean sea level (msl), Sinharaja consists of lowland and sub-montane tropical wet evergreen forests and sub-montane grasslands.

Yala National Park is the Sri Lanka's most visited national park. The park is located in an arid climate and one edge of the park is consisted for North Eastern coastal fringe. Visitors can observe different vegetation types varied from monsoon forests (both humid and dry) to thorn forests to deciduous forests within the park area (ceylonluxury.com, 2010). The second and third highest mountains of the country namely Kirigalpotta & Thotupola respectively are found within the borders of the Horton Plains National Park. The area is characterized by montane cloud forests and wet montane grasslands. Mist and clouds along with cold climate are common due to the hilly geography. Horton Plains have been identified as the best elephant habitats in the country (srilankareference.org, 2010). A detailed discussion of the ecology, geography and climate of selected study sites may be found in Chapter three.

According to Sri Lanka Tourist Board statistics (2010), in 2009, visitor records of the Yala National Park and Horton Plains National Park evidenced a considerably high visitor records relative to the other extant forest-based destinations in Sri Lanka (Table 8). The author believed that selecting destinations with high foreign as well as domestic visitor arrivals may facilitate to obtain a more representative sample across domestic and foreigner travelers.

In addition, choosing destinations with substantially high visitor records may provide an opportunity for a speedy data collection.

Table 8: Visitation and revenues from selected national parks in Sri Lanka, 2009

National Park	No. of Foreign Visitors	Revenue (USD)	No. of Domestic Visitors	Revenue (USD)	Total Revenue (USD)
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)

4.3 Sample Size

The nature of the analysis to be performed and the research budget are two important determinants of the study sample size (Mugo, no date). In SEM, larger sample sizes are recommended to maintain the power of the statistical test, as well as to obtain stable parameter estimates and standard errors (Schumacker & Lomax, 2004). Past literature suggests that many researchers prefer a sample size of 200 to 400 for structural equation modeling applications (statisticssolutions.com, 2010; Gursoy, 2004).

As a rule of thumb, the sample size should be 10 to 20 times more than the number of variables in the model (statisticssolutions.com, 2010; Gursoy, 2004; Schumacker & Lomax, 2004). A minimum sample size should be at least 100 to ensure appropriate use of SEM and to minimize the chance of getting good or perfect goodness-of-fit indices, due to a small sample size (Gursoy, 2004, Schumacker & Lomax, 2004).

A sample size of over 400 may be problematic due to poor goodness-of-fit-indices (Gursoy, 2004; Boomsma as cited in Schumacker & Lomax, 2004). Since the current study utilizes 20 variables in the model, and the sample size will be 20 times more than the number of variables in the model, a sample size of 400 was expected.

4.3 Sampling Method

The sample population consisted of domestic and international travelers from age 18 years or above, who visited the three study sites during October 2009 to February 2010. The study interviewed every third tourist exiting from the sites. The sampling design was determined, based on the number of tourists per day during the study season, destination statistics/annual reports, and weather conditions.

4.4 Methodology for Distinguishing Ecotourists from Other Type of Travelers

As discussed in the Chapter 3, many researchers successfully identified facts that distinguish ecotourists from traditional types of tourists. However, past tourism literature provides no consensus as to which indicators are the most appropriate for distinguishing ecotourists. In the past, the types of travel sites, on-site activities, and traveler motivation were generally applied to distinguish ecotourists from traditional tourists (Ballantine & Eagles, 1994). Out of these techniques, this current study selects the type of travel sites as a justifiable indicator to identify ecotourists. An indicator of the type of travel sites to distinguish ecotourists, in other words, may be specifically defined as “a tourist entering a nature-based site can be considered as an ecotourist” (Tobias & Mendelsohn, as cited in Lee 2007). This study selected three publicly-managed, forest-based, protected areas, namely Sinharaja as a natural world heritage site, Yala wildlife reserve, and Horton Plains National Park for its data collection.

The following elements are incorporated into this indicator.

Criterion 1: A growing number of academic publications use publicly-owned protected areas for ecotourist study (Butler & Boyd, Ceballos-Lascurain as cited in Weaver, 2001); further, past tourism literature indicates that public protected areas comprise a dominant setting for ecotourism activity throughout the world (Weaver, 2001). Other than this, popular ecotourism publications, popular as tour guides, explain the protected area settings for ecotourism operations (Daniel, LaPlanche as cited in Weaver, 2001).

Criterion 2: According to the World Conservation Union, a protected area may be defined as “an area of land and/or sea especially to the protection and maintenance biological diversity, and of natural and associated cultural resources, and managed through legal and other effective means”. As the definition implies, the mandate of most nature-based protected areas includes recreational activities that focus on the appreciation of the natural environment. In addition, protected area management usually imposes stringent restrictions, not only on the number of participants at a time, but also on the types of interactions, thus fulfilling the ecotourism principle of minimizing negative impacts upon the natural and socio-cultural environment.

Criterion 3: Designated world heritage sites, for example, the Sinharaja Forest Reserve, require that an adequate site interpretation be made available for education/learning purposes. Visitors to the forest reserve are usually accompanied by an experienced trekker who can provide educational information thus fulfilling the ecotourism principle of educational and interpretation features.

Criterion 4: In addition, a percentage of tourism revenues from user fees will cover park operating and management costs, thus fulfilling the ecotourism principle regarding protection of

natural areas, by generating economic benefits for authorities managing natural areas with conservation purposes (Lindberg & Sproul, 1996).

Based on the above discussion of criteria, those who enter selected three study sites, Sinharaja natural world heritage site, Yala Wildlife Reserve, and Horton Plains National Park, were considered to be ecotourists, for the purpose of the current study.

4.5 Methodology for Identifying Segments of Sri Lanka's Ecotourism Market

For the purpose of clustering respondents, based on their information search behavior, a cluster analysis method was employed. The purpose of clustering is to categorize subjects into homogeneous groups, based on similarities and differences. Researchers often use clustering to study different behaviors of groups for the same variable. Furthermore, grouping of numerous subjects into a few groups expands the ability to explore of group characteristics, rather than those of each individual (Hair et al., 1998, Ozanne & Vlosky, 2003). Cluster analysis has wide implications in marketing research. It is often used to identify market segments in the marketing environment. For instance, Ozanne & Vlosky (2003) used cluster analysis to identify consumer market segments, based on consumer perceptions on forest certification.

4.6 Methodology for Developing and Testing an Empirical Model of Ecotourist Information Search Behavior

The primary objective of this study is to develop and test an empirical model of ecotourist information search behavior. LISREL, AMOS, and EQS are three popular statistical packages for doing Structural Equation Modeling (SEM) and this study uses AMOS (Analysis of Moment Structures) distributed by SPSS, an-easy-to use structural equation modeling software, to test the hypothetical model. AMOS helps to create more realistic models by estimating, assessing, and presenting the specified model in a path diagram to show hypothesized relationships among variables (spss.com/amos, 2010).

Figure 16 represents the commonly used symbols in path diagrams. Path diagrams are not only graphical representations of the hypothesized model, but also provides necessary input files for the test and fit the model into the particular software package (Raykov & Marcoulides as cited in Pugesek B. H. et al., 2003).

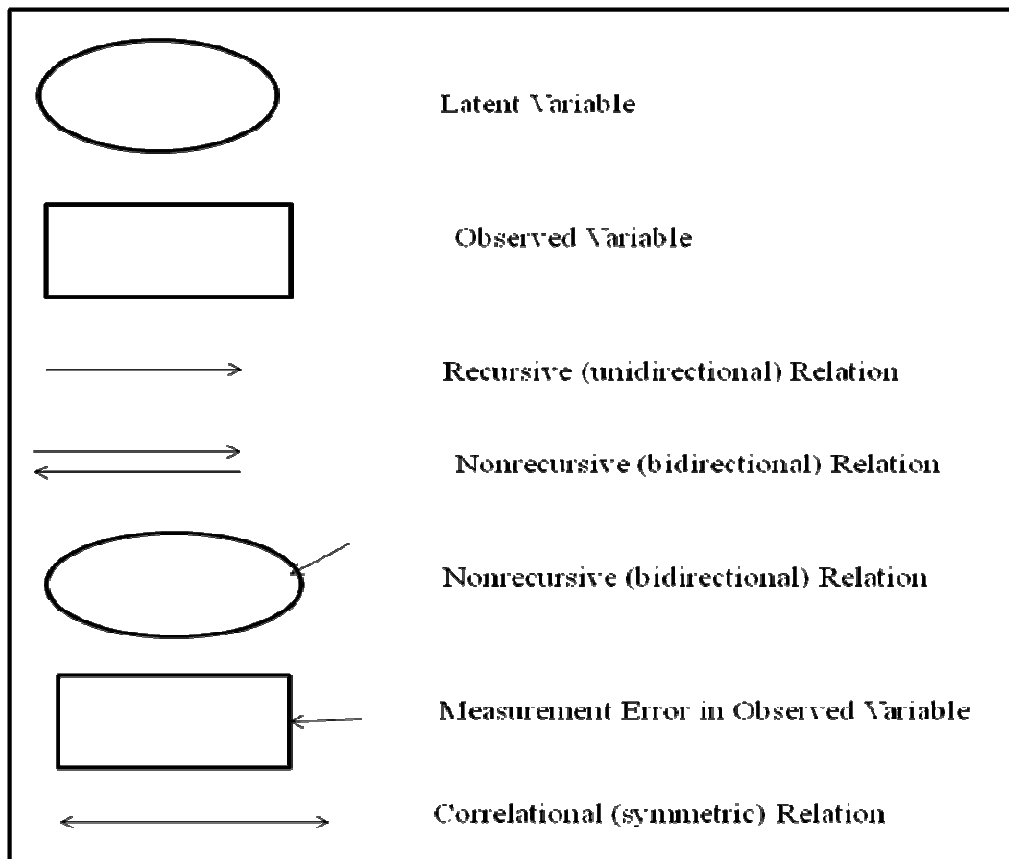


Figure 16: Commonly use graphical denotations to represent SEM

Analysis of the hypothesized structural model consists of two steps: 1) specify the relationships among the constructs or latent variables; and 2) statistically test the hypothesized structural model to determine its consistency with the data (Marcoulides & Hershberger as cited in Pugesek B. H. et al., 2003). Analysis of the adequacy of the indicator variables, model hypotheses, and model consistency with the data are described in Chapter 6 under data analysis and results.

4.6.1 Measurement Model

Measurement variables are sometimes called manifest variables, indicator variables, or reference variables. There is no standard or specific way to determine measurement variables. Based on past literature in many other related fields such as human behavior, information search behavior, and pre-trip information search behavior of tourist, underlying indicator variables were adapted to measure latent variables in the hypothesized model. In SEM, the adequacy of the latent variables and their indicator variables were confirmed by confirmatory factor analysis (CFA) prior to use them in the model. Measurement model is referred to as a “null model”. In null model, co-variances among latent variables are assumed to be zero.

A null model depicts all the latent variables, indicator variables and error terms. However, it does not depict the direct affects among latent variables. Measurement model of the hypothesized model is shown in Figure 17. Finally, an estimated measurement model was evaluated for convergent and discriminant validity, as well as for overall model fit (MacCallum, 1995; Schumacker & Lomax, 2004; Bagozzi & Yi, 1988; Fornell & Larcker, 1981; Lam and Hsu, 2004). Both convergent and discriminant validity are used to explain construct validity among model constructs. Therefore, convergent and discriminant validity work together; evidence for both suggests the construct validity. Construct validity can be proven by achieving both convergent and discriminant validity; yet neither one does not support the construct validity of model constructs.

In the measurement model, each latent variable may be expressed as a linear combination of observed variables.

$$F1 = \alpha_1 X_1 + \alpha_2 X_2 + \dots + \alpha_n X_n$$

Where; F = Factor
 α = factor score coefficients
 X = indicator/ measurment/manifest variable

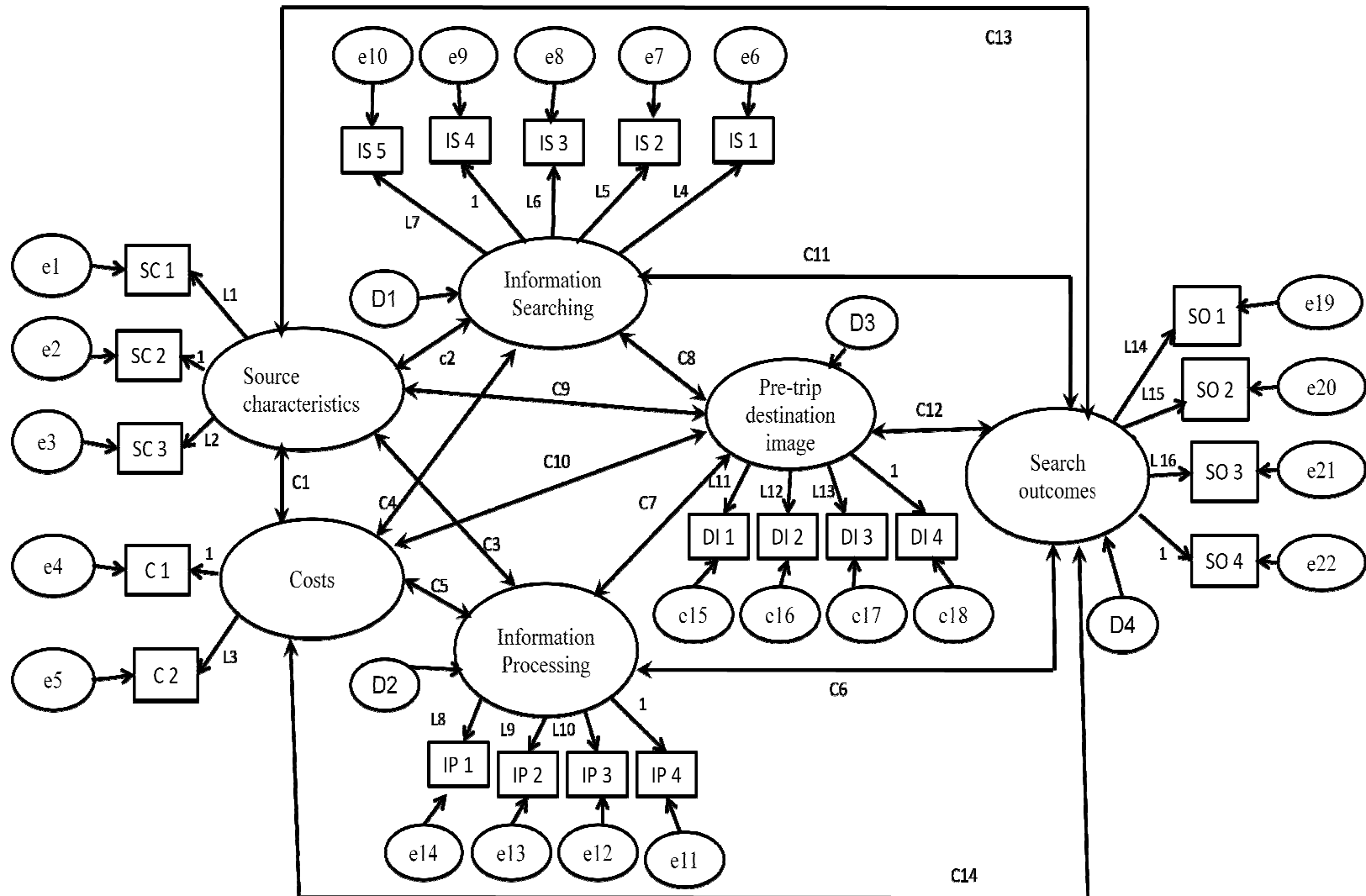


Figure 17: Measurement model of the hypothesized model

4.6.2. Structural Model

The structural model defines the pattern of relations among the unobserved factors or latent constructs which were logically proven in Chapter 3. The structural part of the model has six constructs or latent variables, namely 1) information source characteristics, 2) costs of information search, 3) information searching, 4) information processing, 4) pre-trip destination image, and 5) search outcomes. Last four constructs in the model (information searching, information processing, pre-trip destination image, and search outcomes) are dependent variables, while the first two constructs, information source characteristics and costs of information search, are independent variables.

Dependent variables can be identified as endogenous variables. Typically they are hypothesized as affected by other variables present in the model (MacCallum, 1995; Schumaker & Lomax, 2004). Endogenous variables may or may not affect another variable (MacCallum, 1995; Schumaker & Lomax, 2004). As indicated by Figure 18, information searching, information processing, pre-trip predestination image and, search outcomes may affect one another.

In the model, independent variables or model constructs may be identified as exogenous constructs. That is, an exogenous construct is hypothesized not to be affected by another construct in the model (MacCallum, 1995; Schumacker & Lomax, 2004). For example, information source characteristics are not affected by any other variables presence in the model. However, according to MacCallum (1995), exogenous constructs may directly influence one or more endogenous constructs. A structural model is a contrast to a measurement model. Contrary to the measurement model, the structural model depicts all the direct affects among endogenous and exogenous latent variables.

A structural model does not include error terms (MacCallum 1995; Schumacker & Lomax, 2004). Arrows connecting exogenous latent variables to endogenous variables are denoted by gamma values and arrows connecting endogenous variables are denoted by beta values (MacCallum 1995, Schumacker & Lomax, 2004). Exogenous variables are similar to independent variables in a regression analysis, and endogenous variables are similar to dependent variables in a linear regression. One endogenous variable can cause an effect on another endogenous variable. Figure 18 depicts the hypothesized structural model in a schematic diagram.

In a structural model, prediction equations may be written as follows:

$$\text{Information processing} = \beta_1 \text{information acquisition} + D_2$$

Where;

β = regression coefficients

D = unexplained error

Two types of matrices, Gamma matrix and Beta matrix, can be observed in SEM (Joreskog & Sörbom, 1993; MacCallum, 1995; Schumacker & Lomax, 2004). Both matrices represent the regression coefficient between variables. A gamma matrix represents the regression coefficients that link dependent and independent constructs (latent variables), while the Beta matrix specifies the regression coefficients that link dependent constructs. Each of these matrixes illustrates each and every proposed hypothesis.

4.6.3 Measurement Variables of Model Constructs

In SEM, the measurement variables represent the scale items of each construct that wishes to be measured. Measurement variables for this current study were adopted from past tourism behavior literature. Some of the measurement variables were adopted from past consumer behavior studies to measure similar constructs.

Measurement variables adopted from consumer behavior studies were modified based on the relevant tourism behavior studies.

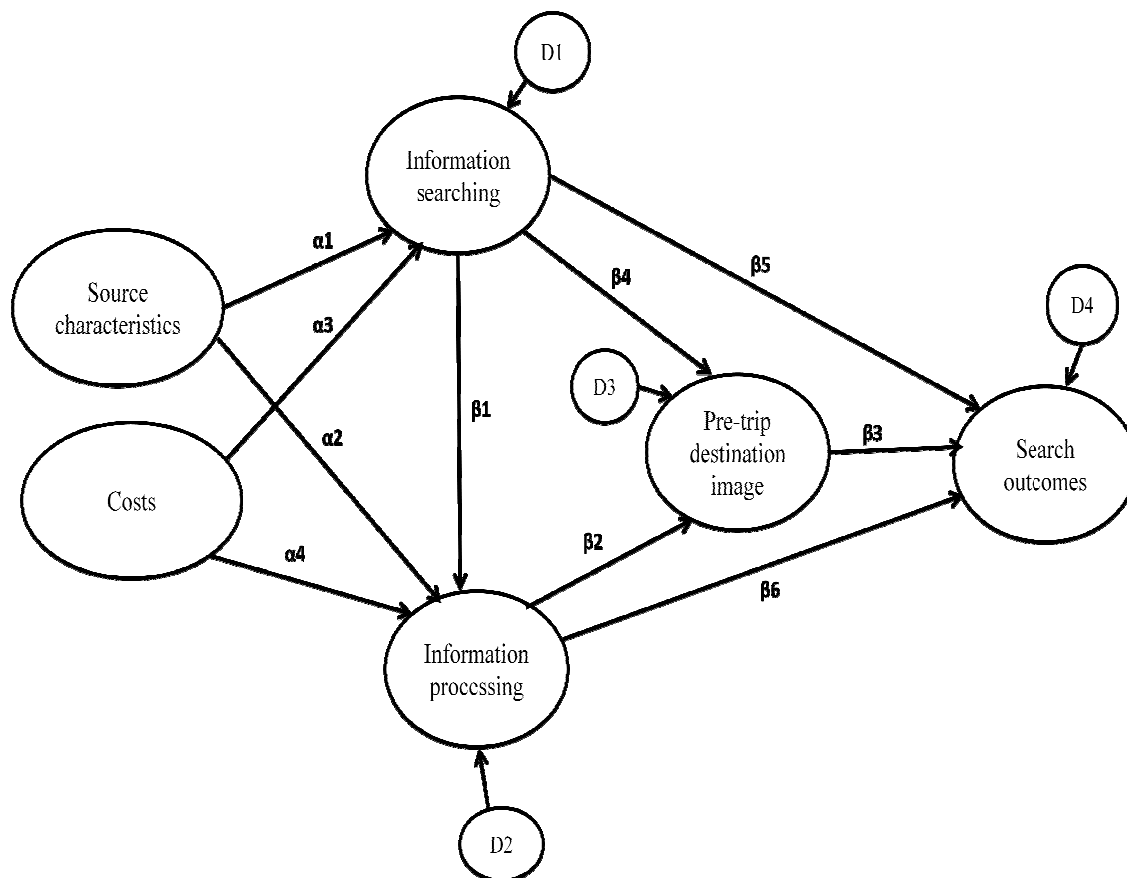


Figure 18: Structural model of the hypothesized model

a) Costs of information search

As discussed in Chapter 2 (2.2.3 Model constructs of the proposed model), model building section of this study measures costs of information search in terms of time and money. Items in the survey used to measure costs of information search are: 1) The amount of time it requires, does not affect my ability to search information before travel (C1), and 2) My income level does not affect my ability to search information before travel (C2).

b) Information source characteristics

Information source characteristics were measured using three dimensions. Detailed reviewing of the past tourism behavior literature suggested that accessibility, credibility, and

simplicity of information were accurately measure the construct of information source characteristics (in Chapter 2, 2.2.3 Model constructs of the proposed model). The study designed three items in the survey to capture information source characteristics are as follows: (1) Easy access for information encourages me to make use of them (SC 1), (2) I am likely to collect information only from credible sources (SC 2), (3) I always prefer to use simple information than something complicated (SC 3).

c) External Information Search

For most tourism decisions, the search is predominantly external and involves considerable time and a variety of sources and channels (Schul & Crompton, 1983; Fodness & Murray, 1997). Therefore, integrating external information sources in the information search behavior model is essential, especially for services, as the primary way to become familiar with the intangible service that consumers will experience. An external search effort may be defined as the “degree of attention, perception, and effort directed toward obtaining environmental data or information related to the specific purchase under consideration” (Beatty & Smith, 1987).

The objective of information searching must be consumption-related to distinguish the phenomenon from other types of learning not related to consumption (Schmidt & Spreng, 1996). International leisure travelers often search information by means of a variety of sources and channels, and thus spend more time than retail purchasers on extended searches before making travel decisions (Schul & Crompton, 1983). In other words, international leisure travelers acquire information from secondary and tertiary information sources and involve more sources of information than consumer products may observed from a retail store.

The sources of information that are used during external search can be classified into several types, such as market-controlled (advertising, product/service information package,

product brochures), reseller information (catalogs by sellers, information charts, consultants), third party independent organizations (TV, newspapers, magazine articles), interpersonal sources (friends, acquaintances), and direct inspection (observation, inference). Model building section of this study measures external information search by a series of questions, representing five dimensions of search: 1) market controlled, 2) reseller information, 3) third party independent organizations, 4) interpersonal sources, 5) internet, and 6) direct observations. Recent studies found that more consumers tend to use internet and online resources to gather information (Gursoy & McCleary, 2004). Luo et al. (2004) suggested that internet as a popular media for searching information among travelers. Therefore, other than the five major dimensions suggested by Beatty & Smith (1987), this study included an additional question, to measure the internet utilization by consumers. Items used to measure external information searching are: 1) When I make my travel decisions, I am likely to rely on third party independent organizations (TV, newspapers, magazine articles) (IS 1), 2) When I make my travel decisions, I am likely to rely on e-net (IS 2), 3) When I make my travel decisions, I am likely to rely on interpersonal external information sources (i.e., friends and family or travel consultants) (IS 3), 4) When I make my travel decisions, I am likely to rely on market controlled (advertising, product/service information package, product brochures) (IS 4), 5) When I make my travel decisions, I am likely to rely on reseller information sources (i.e., catalogs by sellers, information charts, travel offices, government offices) (IS 5), 6) When I make my travel decisions, I am likely to rely on direct inspection (observation, inference) (IS 6).

d) Information Processing

Once consumers acquire information, they process them in order to facilitate their purchase decisions (Assael, 2004).

The principal function of information processing is to differentiate the products/services in ways that are useful for decision-making.

Table 9: Ellis' eight steps in information searching

Method	Description
Starting	The methods users adopt to start searching, such as asking other users
Chaining	Chaining the notes and abstract of the literature to their existing resource base
Browsing	Using semi-directed or semi-structured methods to search information
Monitoring	Keep searching for the latest information
Differentiating	Differentiating the sources of information and filtering all the information observed
Extracting	Selecting related information among the information sources
Verifying	Verifying the accuracy of information
Ending	Concluding the search behavior

(Source: Adopted from Ellis, 1989)

One explanation for consumer information processing is to simplify the incoming information to deal with complex situations without requiring more effort (Gursoy, 2001). According to Assael (2004) and Ellis (1989), consumers use a variety of processing strategies, prior to purchasing a product. According to Ellis (1989), information search behavior is consisted of 8 steps and they are listed in the Table 9. In Ellis' eight-step model, steps 5, 6, as well as step 7 describe diverse processing strategies of a rational consumer. Therefore, steps 5, 6, and 7 were adopted to measure the traveler information processing strategies.

Some authors argued that information categorization helps to differentiate various products and services from one another (Gursoy, 2004). Use of information categorization to differentiate products/ services is well discussed in both in psychology and consumer behavior

(Smith & Medin, Alba & Hutchinson, Brucks, Cohen, Sujan as cited in Gursoy, 2004). Basically, categorization maximizes the within-category similarity and minimizes the between-category similarity (Mervis & Rosch, Murphy, Murphy & Medin as cited in Gursoy, 2004. Information categorization, therefore, becomes a measurement variable of information processing, for this current study.

Five items were proposed to measure information processing: 1) When I make my travel decisions, I am likely to select related information among the information sources (IP 1), 2) When I make my travel decisions, I am likely to verify the accuracy of information (IP 2), 3) When I make my travel decisions, I am likely to differentiate the sources of information (IP 3), 4) When I make my travel decisions, I am likely to categorize information I received (IP 4), and 5) When I make my travel decisions, I am likely to simplify all the information I get from information sources such as travel agents, guidebooks, etc. (e.g., instead of remembering all the details, I simply say the destination is a good/bad and/or expensive / inexpensive) (IP 5). The first, second, third, items were extracted from the Ellis' 8 steps of information search behavior, while the fourth and fifth items were directly extracted from the information search behavior study conducted by Gursoy, in 2004.

e) Pre-trip Destination Image

A critical examination of previous studies related to the measurement techniques of destination images revealed that researchers relied on structured methodologies (Echtner & Ritchie, 2003).

Table 10 shows the different attributes of the destination image that have been used in more than six studies in the past tourism literature. Based on Table 10, attributes to measure destination image were selected for the current study. Attributes related to mass tourism and

attributes which explain the after visit destination image were ignored. In other words, attributes which are related to the concept of ecotourism and pre-trip destination image were extracted to use in this study.

Table 10: Attributes widely used by researchers to measure destination image

Measurable attribute	Number of studies measuring the attribute	Significance for the present study
Scenery/natural attractions	13	Yes
Cost/price levels	9	Yes
Climate	8	Yes
Tourist sites/activities	8	No, much related to mass tourism
Nightlife and entertainment	8	No, much related to mass tourism
Sports facilities/activities	8	No, much related to mass tourism
National parks/wilderness activities	7	Yes
Local infrastructure/transportation	7	Yes
Architecture/building	7	No, much related to mass tourism
Historic sites/museums	6	No, much related to mass tourism
Beaches	6	No, much related to mass tourism
Hospitality/friendliness/respectiveness	11	No, after visit destination image
Different cuisine/food and drinks	7	No, much related to mass tourism

(Source: Adopted and modified from Echtner and Ritchie, 2003)

Finally, five attributes were extracted to measure the pre-trip destination image: scenery/natural attractions, cost/price levels, climate, national parks/wilderness activities, and local infrastructure /transportation. The study designed five items in the survey to capture traveler pre-trip destination image are as follows: (1) Before I travel, I am aware of the wilderness activities at the destination (DI 1), (2) Before I travel, I am aware of the price levels of the destination (DI 2), (3) Before I travel, I am aware of the local infrastructure around the destination area (DI 3), (4) Before I travel, I am aware of the natural attractions at the destination (DI 4), (5) Before I travel, I am aware of the of the climate at the destination (DI 5).

d) Search Outcomes

The most immediate objective behind the pre-trip information search is to make better consumption choices (Engel et al., 1995; Fodness & Murray, 1999). Fodness & Murray (1999) found that an information search is positively associated with number of destinations visited as well as the number of attractions visited. Length of stay and destination choice is two other search outcomes, caused as a result of information searching (Fodness & Murray, 1999; Luo et al. 2004). In conclusion, previous studies identified four variables to measure search outcomes; namely the number of destinations visited, the number of attractions visited, the length of stay at the destination, and the destination choice.

All the four variables to measure travel-related search outcomes were adopted from past tourist information search behavior literature. Designed items to measure travel related search outcomes are as follows: (1) Before I travel, I decide the number of attractions to visit (SO 1); (2) Before I travel, I estimate the expenses at the destination (SO 2); (3) Before I travel, I decide the number of destinations to visit (SO 3), (4) Before I travel, I decide how many nights to stay at the destination (SO 4).

CHAPTER 5: DATA ANALYSIS AND RESULTS: MARKET SEGMENTATION

This chapter presents the statistical analysis and results of market segmentation, based on traveler external information search behavior. Data analysis and results in this chapter are basically organized in two facets:

- a) Description of respondents, based on selected socio demographic characteristics
- b) Market segmentation, based on respondents' pre-trip information search behaviors and identification of segment profiles.

Since data were collected through face to face interviews, missing data were minimal in this study. Any cases of missing data were replaced with mean values using extrapolation procedure in the SPSS statistical package.

5.1 Response Rate

The response rate can be considered as the percentage of respondents who respond to the survey (Dillman, 1998). Typically, the response rate from personal interviews is greater than that of a mail survey (Dillman, 1998).

Table 11: Response rate

	Number	Percent (%) rounded
Total target population	600	100%
Refuse to participate	110	18%
Unable to participate	18	3%
Total responses	472	79%
Unusable	42	7%
Total usable responses	430	72%
Description of unusable surveys:		
Incomplete surveys	19	
Surveys with incompatible information	23	

The overall response rate for this current study was 79% with a 472 total responses (Table 11), which is a relatively a high response rate for marketing studies. Forty two completed surveys were eliminated as they were partially completed or with incompatible information. After eliminating the unusable responses, 430 responses were cleaned, and used for data analysis.

5.2 Profile of the Respondents

The respondent's socio demographic variables were analyzed to examine their profiles and results are listed in Table 12. The demographic characteristics of age, income, marital status, gender, and education were examined in this study to provide a descriptive profile of the survey respondents.

5.2.1 Age

The survey respondents were asked to choose their age group in a ranked question. According to the observed total values given in Table 12, most respondents fell in to the age group of 36-45 years followed by 46-55 years, and 26-35 years.

5.2.2 Marital Status

Respondents were asked to state their marital status by choosing one from: "married," "unmarried," "separated/divorced," and "widow/widower." In general, the majority of respondents were unmarried. Although the married individuals were the dominant in foreign visitor group, local visitors were dominated by singles.

5.2.3 Income

Respondents were asked to include their monthly household income in an open-ended question. Significant percentage of respondents left this question blanks than for any other question on the survey, with only 277 of the 430 respondents providing information regarding

their annual household income. For those who did answer this question, their mean monthly income was US \$ 2517. A greater discrepancy of mean monthly income was observed among respondents from various countries. As indicated in Table 12, mean monthly income greatly differed between local and foreign travelers

Table 12: Demographic characteristics of respondents

	Local visitors	Foreign visitors	Total
Age	(n=286)	(n=138)	(N=424)
18-25 years	14.3%	9.4%	12.7%
26-35 years	16.4%	11.6%	14.9%
36-45 years	28.7%	26.8%	28.1%
46-55 years	17.8%	23.2%	19.6%
56-65 years	15.7%	18.8%	16.7%
66 or older	7.0%	10.1%	8.0%
Gender	(n=278)	(n=138)	(N=416)
Male	61.2%	62.3%	61.5%
Female	38.8%	37.7%	38.5%
Education	(n=280)	(n=138)	(N=416)
High school or below	27.7%	24.6%	26.7%
Diploma	38.5%	23.2%	33.4%
Bachelor's degree	21.2%	31.2%	24.5%
Some graduate education	11.2%	15.9%	12.7%
Graduate degree	1.4%	5.1%	2.6%
Marital status	(n=272)	(n=138)	(N=410)
Married	37.9%	53.6%	43.2%
Unmarried	60.7%	29.0%	50.0%
Separate/divorced	1.5%	13.8%	5.6%
Widow/widower	0.0%	3.6%	1.2%
Mean monthly income in \$ U.S.	(n=189)	(n=88)	(N=277)
	357.72	3884.17	2516.82

5.2.4 Gender

Gender is another important demographic characteristic which may affect an individual's behavior (Gursoy, 2004). Past consumer behavior literature identified that gender identity has been significantly affected on several different consumer variables such as leisure activities, sex-role portrayals, and shopping behavior (Palan, 2001). Of the respondents who provided gender information, majority (61.5%) were males, whereas 38.5% of respondents were females. Males were the dominant in both local and foreign categories.

5.3 Use of External Information Sources

Understanding the information search behavior of an ecotourist, particularly in relation to external information search is the primary objective of this study. International leisure travelers often search information by means of a variety of sources and channels, and thus spend more time than retail purchasers before making purchasing decisions (Schul & Crompton, 1983). In other words, international leisure travelers acquire information from secondary and tertiary information sources, and this involves more sources of information than in consumer product purchases from a retail store. The sources of information that are used in external information search can be classified into several types, such as market-controlled (advertising, product/service information package, product brochures), reseller information (catalogs by sellers, information charts, travel consultants), third party independent organizations (TV, newspapers, magazine articles), interpersonal sources (friends, acquaintances), and direct inspection (observation, inference). In order to examine the most popular external information sources, rather than types/categories of external information sources, used by visitors to forest-based recreational destinations in Sri Lanka, respondents were given a choice for each external information source.

For example, instead of asking “information from reseller (i.e., catalogs by sellers, information charts, and travel consultants)” respondents were given two different choices: “information from destination specific sources,” and “information from travel consultants”. The researcher believed that giving a choice for all possible external information sources may enhance managerial implications of this study by understanding the most demanding external information source/s for the forest based ecotourism destinations in Sri Lanka.

Respondents were asked to state their level of agreement in 1-5 Likert scale on a given list of external information sources they used in planning their trip. The given list of information sources are as follows:

- 1) From friends and family
- 2) From travel consultants (i.e., travel agents)
- 3) From tourism service providers (i.e., Hotel, Airline, Tour operators. etc.)
- 4) From destination specific sources (i.e., Convention and Visitors Bureau and/or Chamber of Commerce)
- 5) From TV, radio, newspaper, and/or magazine advertisements
- 6) From the Internet
- 7) From local travel offices near the travel destination
- 8) From national government tourist offices

Figure 19 illustrates mean values of respondents’ utilization of the eight specified external information sources before they plan their trip. Results showed that respondents had used several different sources of information during their pre-trip planning process. As seen in Figure 19, TV/radio/magazines followed by e-net, and friends and family were the most commonly utilized external information source by respondents. Local travel offices followed by travel consultants and government tourist offices were the least favored information sources.

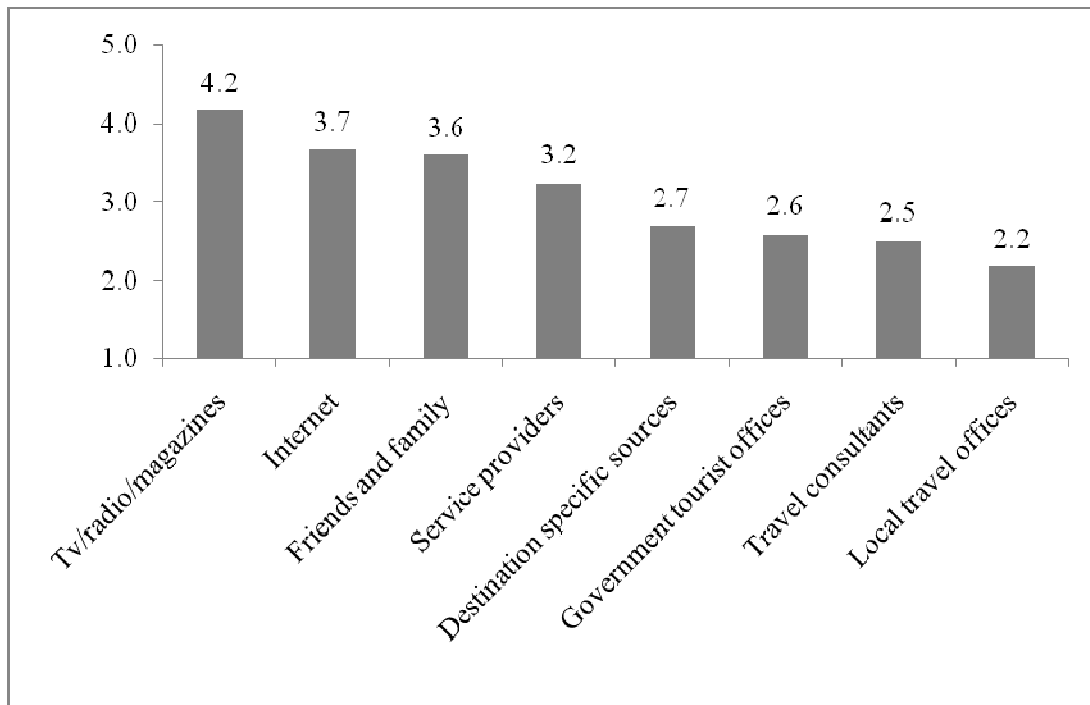


Figure 19: Level of utilization of external information sources by study respondents (N=430)

5.4 External Information Sources: Domestic vs. Foreign Visitors

In order to identify the most popular information sources for local and foreign visitors, mean responses were analysed by grouping respondents into 2 groups, based on their country of residence. Respondents from countries other than Sri Lanka were collectively grouped into “foreign visitors” category. Figure 20, illustrates the mean level of agreement to different external information sources utilised by domestic and foreign respondents. For both domestic and international travellers, TV/radio/ magazines appear to be the most popular source for acquiring pre-trip information. This was followed by e-net, friends and family or word of mouth from friends or relatives who had been to the destination before, and service providers.

In general, relative importance of information sources for domestic travelers closely followed the pattern observed for foreign travelers (Figure 20). Interestingly, utilisation of e-net showed a mean value of (3.69) for domestic travelers, which in fact exceeded the mean value for foreign respondents(3.3).

One possible explanation for this is the dramatic increment of the popularity of e-net in the recent past due to its availability and affordability in domestic market. Ranking the TV/radio/magazines as the most popular information source among domestic travelers may be possibly explained by the government's post-war tourism promotional efforts. Eventhough destination specific sources seem to be less-frequently used by domestic travelers, destination specific sources seem to be a prefferable information source among foreign respondents.

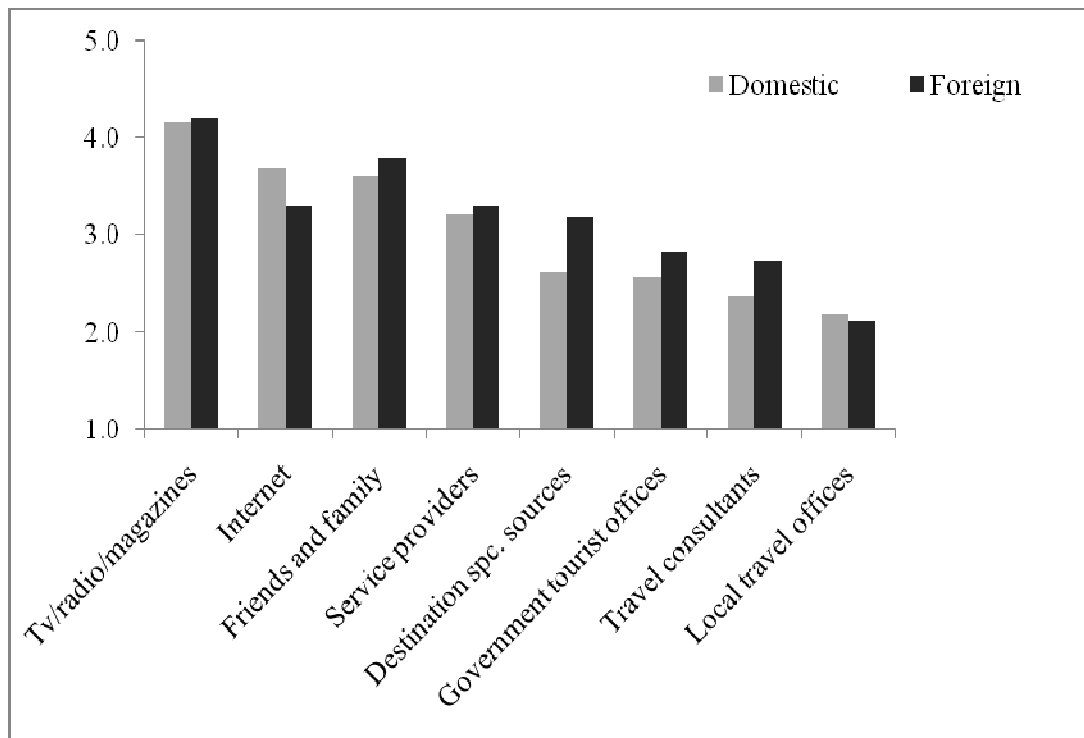


Figure 20: Level of utilization of external information sources by domestic vs. foreign respondents (N=430)

The mean values of different information sources used by domestic and foreign travelers emphasize that the country of origin may affect the selection of information sources. In order to examine the impact of country of origin (domestic or foreign) on the use of information sources a series of t-tests were conducted. According to the test results, means of utilization of destination specific sources were significantly different at ($p=0.05$) significance level (Table 13).

Table 13: Levene's test results for equality of variance and t-values for equality of means

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2- tailed)
Friends and family	Equal variances assumed	0.10	0.75	0.44	422.00	0.66
	Equal variances not assumed			0.43	265.59	0.67
Destination specific sources	Equal variances assumed	17.99	0.00	-2.91	421.00	0.00
	Equal variances not assumed			-2.71	226.21	0.01
Service providers	Equal variances assumed	0.35	0.55	-0.53	421.00	0.60
	Equal variances not assumed			-0.52	265.34	0.60
Internet	Equal variances assumed	3.57	0.06	-1.58	421.00	0.12
	Equal variances not assumed			-1.52	246.77	0.13
Tv/radio/magazines	Equal variances assumed	0.31	0.58	0.18	421.00	0.86
	Equal variances not assumed			0.18	262.79	0.86
Travel consultants	Equal variances assumed	10.47	0.00	0.61	422.00	0.54
	Equal variances not assumed			0.65	322.82	0.51
Local travel offices	Equal variances assumed	0.06	0.81	0.55	422.00	0.58
	Equal variances not assumed			0.54	257.87	0.59
Government tourist offices	Equal variances assumed	5.89	0.02	-0.31	422.00	0.75
	Equal variances not assumed			-0.30	240.27	0.77

Other than the utilization of destination specific sources, the use of other external information sources were not significantly different among domestic and foreign travelers at (p=0.05) significance level. Eventhough the utilization of external information sources were not statistically different between domestic and foreign travelers for most of the given information

sources, utilization pattern may vary among users of different countries. Further, these study findings may raise a future research question of “is a traveler’s country of origin effect his choice of external information sources in pre-trip planning stage?”

5.5 Segmentation of Forest-Based Tourism Market in Sri Lanka Using Cluster Analysis

The purpose of clustering is to categorize subjects into homogeneous groups, based on similarities and differences. Researchers often use clustering to study different behaviors of groups for the same variable. Furthermore, grouping of numerous subjects into a few groups expands the ability to explore group characteristics (Hair et al. 1998, Ozanne & Vlosky, 2000).

Table 14: ANOVA table of the cluster analysis

Source of information	Mean square	df	F value	Sig.
Friends and family	129.391	416	114.472	.000
Travel consultants	32.450	416	19.746	.000
Service providers	176.936	416	169.470	.000
Destination specific sources	68.562	416	51.866	.000
TV/radio/magazines	15.002	416	14.813	.000
Internet	64.324	416	49.431	.000
Local travel offices	3.223	416	3.599	.014
Government tourist offices	39.087	416	27.972	.000

Cluster analysis was employed to identify the homogeneous visitor clusters based on their information sources usage. The decision of choosing an appropriate cluster number depends on various factors, namely a-priori criteria, practical judgment, common sense, or theoretical foundation (Hair et al. as cited in Ozanne & Vlsoky, 2000). Since cluster analysis does not provide clear guidelines for choosing a solution, solutions with different numbers of clusters are often considered.

In this analysis, responses to utilization of external information sources were classified in to three, four and five segments using cluster analysis. A four-cluster solution was selected since

it adequately differentiated each cluster, and was easily interpretable. ANOVA table of cluster analysis shows that all the listed information sources used to categorize individuals are significant at ($p=0.05$) significance level (Table 14).

For the four clusters identified, means for each external information source was calculated. Variation of mean scores in external information sources for each cluster is depicted in Figure 21. According to the results of cluster analysis, the second cluster accounted for 34.76% of respondents while first, third, and fourth clusters accounted for 25.71%, 15.46%, and 24.04% of respondents, respectively. Cluster 2 consists of relatively larger amount of respondents. Percentages of respondents in cluster 1 and cluster 4 were nearly equal. Cluster mean score for each information source is listed in Table 15.

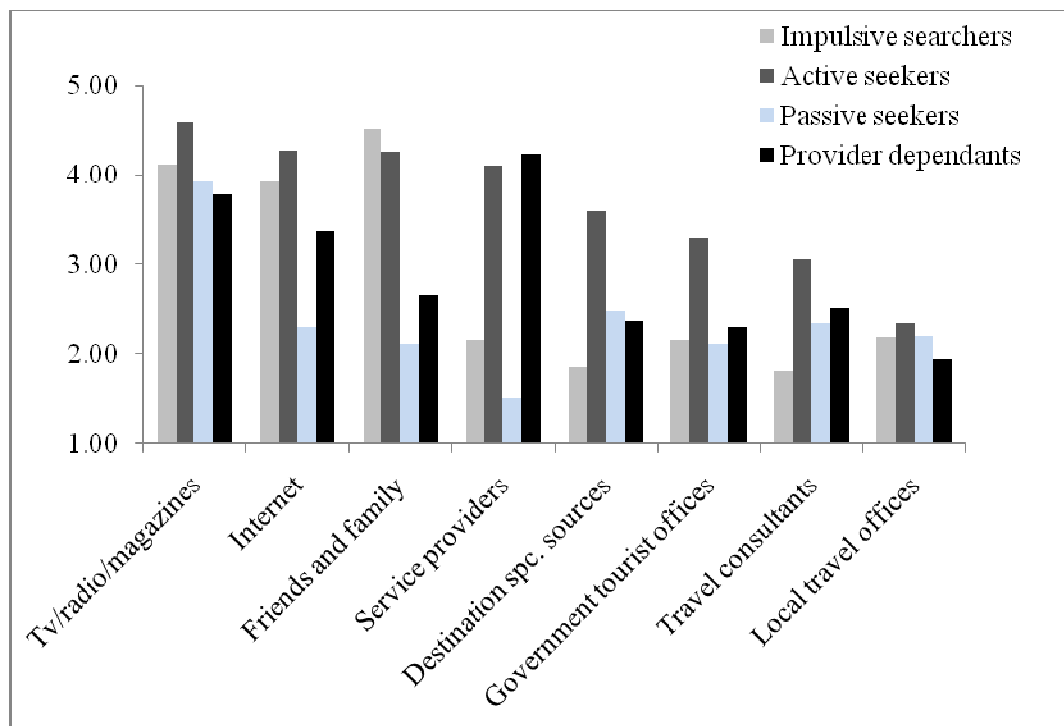


Figure 21: Derived clusters based on the traveler external information search behavior (N=420)

Clusters were named based on the relative importance allotted on each external information source by members of each cluster. For the purpose of naming clusters, information sources with mean values greater than 4 were utilized. Since members of cluster 1 were more

reliant on friends and family followed by TV/radio/ magazines for their pre-trip information search, cluster 1 was named as “impulsive searchers”.

Table 15: Cluster mean scores based on their utilization of external information source items

Cluster Name	TV/radio/ magazines	Friends and family	Service providers	Internet	Travel consultants	Local travel offices	Government tourist offices	Destination specific
Clu 1-Impulsive searchers(n=108)	4.12	4.51	2.16	3.93	1.81	2.18	2.15	1.86
Clu 2-Active seekers(n=146)	4.58	4.26	4.10	4.27	3.05	2.34	3.29	3.59
Clu 3- Passive seekers(n=65)	3.92	2.11	1.51	2.29	2.34	2.20	2.11	2.48
Clu 4-Provider dependants(n=101)	3.77	2.65	4.24	3.37	2.51	1.94	2.30	2.37

Members of cluster 2 highly related with 4 of the given 8 information sources: TV/radio/ magazines, friends and family, e-net, and service providers. Hence, they seem to be interested in variety of external information sources. Therefore, cluster 2 was named as “active seekers.”

Since cluster 3 members did not use any of the information sources in to a greater extent, cluster 3 was given the name of “passive seekers”. Cluster 4, where its members were greatly dependant on service providers for pre-trip information, was identified as “provider dependants” (Table 15).

5.6 Confirmation of Cluster Results Using Discriminant Analysis

Discriminant analysis is a useful statistical tool tht can be used to classify cases in to given groups (Gaeghan, 2006). Discriminant analysis was performed to verify the results of cluster analysis. Purpose of conducting a discriminant analysis, at this point, is to examine how many cases were correctly classified in to their relevant groups. Graphical representation of the discriminate analysis is shown in Figure 22.

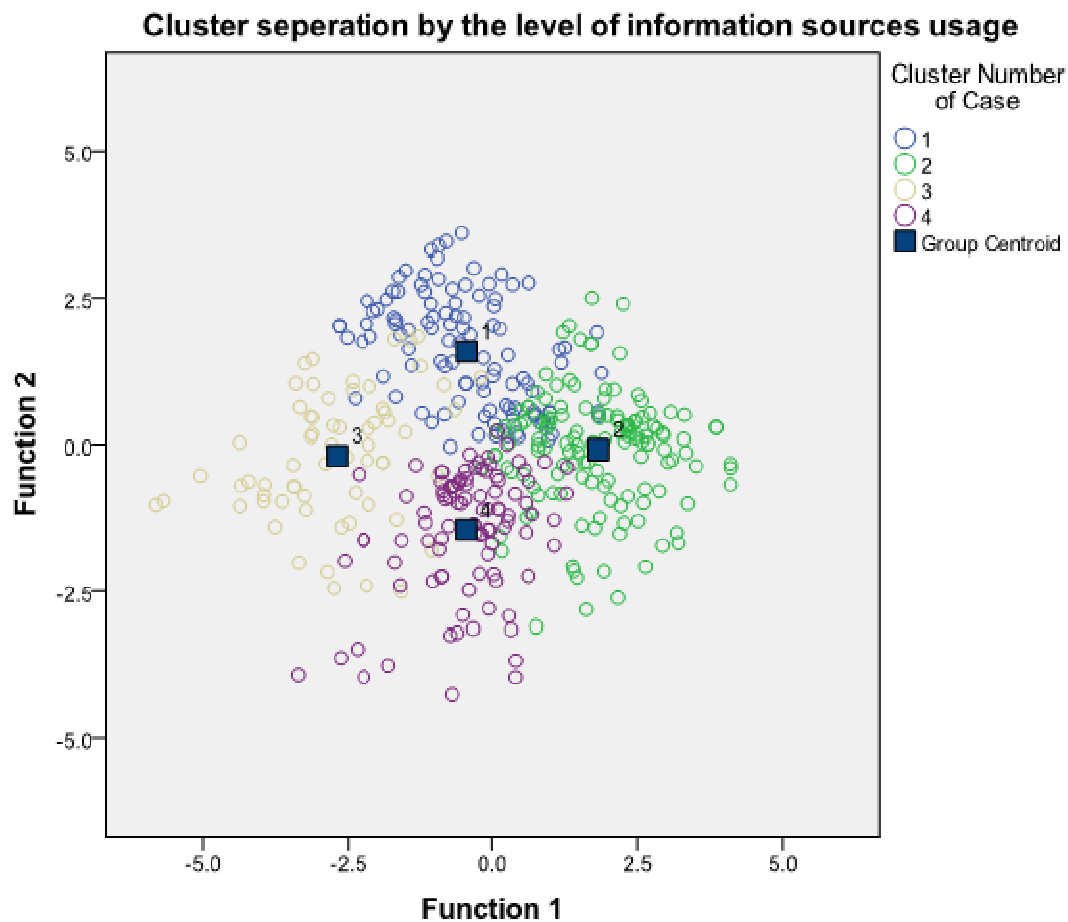


Figure 22: Graphical representation of the derived clusters

An individual is assigned into a group using its association with the discriminant function. Discriminant function is built using observed variables, and the function differentiates between groups.

Discriminant function formula can be illustrated as;

$$D1 = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n$$

Where;

X = Observed variable

β = coefficient value of the function

Classification matrix is the commonly used statistics in discriminant analysis to see how well the current classification system classifies cases into relevant groups (Gaeghan, 2006).

Classification results of the discriminant analysis show that 85.2% of members in cluster1, 97.3% of respondents in cluster 2, 87.7% of cluster 3, and 93.1% of cluster 4 respondents were correctly assigned in to their relevant clusters. Overall, 91.7% of cases, which was an acceptable percentage, were assigned correctly into their relevant groups (Table 16).

Table 16: Classification results of discriminant analysis

Cluster number of Cases		Predicted Group Membership				Total
		1	2	3	4	
Original Count	1	92	14	0	2	108
	2	0	142	0	4	146
	3	6	0	57	2	65
	4	0	7	0	94	101
%	1	85.2	13.0	.0	1.9	100.0
	2	.0	97.3	.0	2.7	100.0
	3	9.2	.0	87.7	3.1	100.0
	4	.0	6.9	.0	93.1	100.0

Note: 91.7% of original grouped cases correctly classified.

5.7 Identified Market Segments and Segment Profiles

In order to develop socio demographic profiles, respondents' socio demographic variables of each cluster were analyzed. Resulted profiles are listed in Table 17. Based on the results, clusters could be visually identified using their socio demographic variables. Study findings suggest that more than 50 % of travelers in cluster 1 (impulsive searchers) are married males, have a diploma, and the age group of 36-55 years. Therefore, "impulsive searchers" are characterized by middle aged, married males with somewhat higher education level. According to the study findings, approximately 70% of members in cluster 2 were unmarried males. Eventhough the age distribution of cluster 2 members was scattered among the age groups, approximately 40 % of respondents were in the age group of 36-45 years. Close to 70 % of respondents has either a bachelor's degree (42.3%) or a diploma (26.8%).

Table 17: Socio demographic profile of each cluster

	Clu 1- Impulsive searchers	Clu 2-Active seekers	Clu 3- Passive seekers	Clu 4- Provider dependants
Marital status	(n=108)	(n=139)	(n=61)	(n=98)
Married	56.5%	21.6%	52.5%	51.0%
Unmarried	35.1%	71.2%	42.6%	42.9%
Separate	6.5%	5.0%	4.9%	6.1%
Widow/widower	1.9%	2.2%	0.0%	0.0%
Age	(n=108)	(n=146)	(n=65)	(n=101)
18-25 years	6.5%	11.0%	35.4%	5.9%
26-35 years	7.4%	13.7%	47.7%	4.0%
36-45 years	44.4%	39.0%	9.2%	5.9%
46-55 years	33.3%	18.5%	4.6%	16.8%
56-65 years	6.5%	10.3%	3.1%	46.5%
66 or older	1.9%	7.5%	0.0%	20.8%
Level of education	(n=108)	(n=142)	(n=65)	(n=101)
High school or below	20.0%	24.6%	61.6%	15.0%
Diploma	54.3%	26.8%	24.6%	24.0%
Bachelor's degree	12.4%	42.3%	12.3%	21.0%
Some graduate education	9.5%	6.3%	1.5%	33.0%
Graduate degree	3.8%	0.0%	0.0%	7.0%
Sex	(n=106)	(n=146)	(n=65)	(n=98)
Male	64.7%	68.5%	47.7%	57.6%
Female	35.3%	31.5%	52.3%	42.4%
Country of origin	(n=108)	(n=139)	(n=65)	(n=101)
Sri Lanka	66.1%	69.9%	69.9%	62.4%
Germany	11.0%	18.5%	18.5%	5.9%
France	1.7%	0.7%	0.7%	1.0%
Phinland	3.4%	4.8%	4.8%	4.0%
UK	17.8%	6.2%	6.2%	26.7%

A typical “active seeker” is a middle aged unmarried male with a higher education level.

Cluster 3 was predominantly consists of young individuals in the age group of 18-25 years (35.4%) and 26-35 years (47.7%). More than half of the respondents are married (52.5%) while 43% of respondents are unmarried. Individuals with higher educational levels were less in

this cluster 3 and approximately 60% of respondents were high school graduates. “passive seekers’ are characterized by relatively young females with moderate education.

According to the Table 16, cluster 4 respondents can be described as older individuals since approximately 68% of respondents were 56 years or older. Education levels of most of the cluster 4 members were relatively higher than that of other clusters. Approximately 60% of respondents had a higher education including a bachelor’s degree (21.0%), some graduate education (33.0%), or a graduate degree (7.0%). “Provider dependents” pre dominantly represent highly educated males, who are mostly over 55 years old.

5.8 Identified Market Segments and Their Travel Related Decisions

After identifying cluster profiles, clusters were further examined for their travel related decisions, such as estimated expenses at the destination per day per person, number of nights spent, or are going to spend at the destination, and the number of forest-based destinations that respondents are planning to visit or already visited during the trip (Table 18). More than 50% of respondents in cluster 1 have spent or are planning to spend 40-60 US \$ per day per person at the destination. More than 70 % of respondents have spent or planning to spend either 1 night (40.7%) or 2 days and one overnight (37.0%) at the destination.

Estimated expenses of members in cluster 2 are dispersed among given expenses categories. Approximately 70 % of respondents have spent or are planning to have one day, no overnight (37.0%) or 1 day, 1 night (31.5%) trips. Almost 50% of cluster 3 respondents have spent or are planning to spend 20 US \$ or less at the destination and more than 50% are interested in a 1 day, no overnight trips. Approximately 55 % of the respondents’ estimated expenses at the destination in cluster 4 is over 80 US \$ and it is the highest recorded level of

spending. Almost 33 % of respondents in cluster 4 have stayed or planning to stay 2 nights or more at the destination.

Table 18: Travel related decisions of each cluster

	Clu 1- impulsive searchers (n=108)	Clu 2-Active seekers (n=135)	Clu 3- Passive seekers (n=65)	Clu 4-Provider dependants (n=98)
Estimated expenses at the destination (per day per person)				
Equal or less than 20 \$ US	14.3%	21.5%	48.4%	15.2%
> 20-40 US \$	17.1%	23.7%	19.4%	12.0%
> 40-60 US \$	53.3%	22.2%	16.1%	10.9%
> 60-80 US \$	7.6%	20.0%	9.7%	6.5%
> 80 US \$	7.6%	12.6%	6.4%	55.4%
Nights spend at the destination	(n=108)	(n=146)	(n=65)	(n=98)
1 day, no over night	16.7%	37.0%	55.4%	24.5%
1 day, 1 over night	40.7%	31.5%	27.7%	32.7%
2 days, 1 over night	37.0%	13.0%	6.2%	11.2%
2 days, 2 over nights	3.7%	13.7%	6.2%	15.3%
More than 2 over nights	1.9%	4.8%	4.6%	16.3%
Destination choice	(n=108)	(n=144)	(n=65)	(n=94)
None	12.7%	21.9%	53.8%	9.9%
1 more	38.1%	19.9%	23.1%	13.9%
2 more	36.4%	27.4%	12.3%	33.7%
3 more	9.3%	17.8%	7.7%	30.7%
More than three destinations	3.4%	13.0%	3.1%	11.9%

Other than the estimated expenses at the destination and nights spend at the destination, respondents were asked to choose how many other forest based destinations in Sri Lanka they are going to visit during the particular trip. Almost 75% of cluster 1 members are planning to visit/visited another one (38.1%) or two (36.4%) destinations.

A few number of cluster 1 members (12.7%) stated that they will not visit any other forest based destinations during this trip. The response of cluster 2 members regarding destination choice seems to be dispersed as they were for many of the other travel decision questions. With regards to destination choice in cluster 2, percentage of respondents agreed with each of the given choices of none, one more destination, two more destinations, and 3 more destinations were about 20%. Also, 13 % of respondents in cluster 2 are planning to visit/visited more than 3 other forest based destinations in Sri Lanka. More than half of the respondents in cluster 3 will not visit any other forest based destinations while 23.1% of respondents will visit/visited one other forest based destinations in Sri Lanka during this trip. Cluster 4 members tend to visit more forest based destinations other than the particular destination where data were collected during this trip. Approximately 75% of members in cluster 4 are planning to visit/visited more than 2 forest based destinations.

5.9: Discussion: Market Segmentation

In summarizing the results of cluster analysis, this study identifies four distinct market segments of ecotourists visiting forest based ecotourism destinations in Sri Lanka based on their information search behaviors.

Derived segments are: 1) impulsive searchers, 2) active seekers, 3) passive seekers and, 4) provider dependents. By analyzing ecotravelers' actual travel decisions such as estimated expenses at the destination, number of nights spend at the destination, and destination choice which are important to marketers, study findings suggest that provider dependants is the ideal market segment to target for forest based ecotourism destination marketers in Sri Lanka. Provider dependants seem to spend more money and more nights at the destination than other visitor clusters.

Cluster 4 members primarily dependent on service providers for their pre-trip information. These findings suggest that destination marketers who want to reach cluster 4 should focus on service providers' information materials such as, travel guides, books, and tourist information leaflets. Sri Lanka Tourist Board and Tourism Promotion Bureau have to work closely with tourism service providers to improve the quality, consistency, and the reliability of information provided by service providers. In addition, Sri Lanka Tourist Board and Tourism Promotion Bureau have to ensure that the information provided by service providers is appropriate, well designed/organized and attractive enough to convey the correct message in a pleasant way. Further, responsible agencies can design service provider's information materials in compliance with the provider dependants' socio-demographic profile.

In attempting to reach impulsive searchers, Sri Lanka Tourist Board and Tourism Promotion Bureau should design attractive audio-visual and magazine advertisements with a consistent and specific message to bring up the country as an ideal forest based ecotourism destination. Also, these institutions should conduct further studies to identify widely popular tourism magazines to publish their advertisements. Responsible agencies in Sri Lanka should coordinate and make necessary arrangements with major foreign tourist source countries to disseminate accurate information through mass media on ecotourism opportunities in Sri Lanka.

Other than TV/radio/magazines, impulsive searchers are likely to refer their friends and family before they make their travel related decisions. Therefore, customer satisfaction and complaint handling is more important for destination managers, especially if impulsive searchers are targeted. A good recommendation cannot be expected from dis-satisfied customer who has a poor experience at the destination. Therefore, constant monitoring, problem identification, and necessary modifications to enhance customer satisfaction are important.

Active searchers seem to be a difficult segment to serve compared to the other 3 clusters. Segment 2 is comprised of individuals those who search information from variety of sources and their level of education, age distribution, and their estimated expenses are dispersed.

Segment 3 is least likely to use any of the information sources other than the TV/radio/magazines up to a certain extent, and it is the least profitable segment in terms of travel related decisions. Therefore, when responsible parties design TV/radio/magazine advertisements or articles, they can introduce relatively less expensive ecotourism packages for this group to encourage their arrivals in off seasons and to discourage them in peak seasons. This will provide opportunities for destination marketers to target other segments, and better cater to their needs in peak seasons and serve passive searchers in off seasons.

CHAPTER 6: DATA ANALYSIS AND RESULTS: MODEL BUILDING

This section addresses the second objective of the study; to develop and test an empirical model of ecotourist pre-trip information search behavior. The model building procedure using Structural equation Modeling (SEM) is discussed in detail. The SEM analysis was performed in two steps;

1. Confirmation of the selected measurement variables for latent constructs in the proposed model.
2. Constructing a model of ecotourist information search behavior on forest based travel decisions in Sri Lanka.

The model was built in AMOS (Analysis of Moment structure), and results are discussed herein.

6.1 Data Screening for SEM

Prior to SEM analysis, it is advised to check sample data for the level of measurements, missing values, outliers, normality, and linearity since SEM statistical analysis results tend to affect by these factors (Joreskog & Sorbom, 1993; Schumacker & Lomax, 2004).

6.1.1 Level of Measurements

Statistically, four types of measurement scales can be interpreted; nominal, ordinal, interval and ratio (Stevens as cited in Shumaker and Lomax, 2004). Although Structural equation modeling allows using any of these measurement variables, it is not recommended to use mixture of variables measures in different measurement scales together in a model. All the variables used in this study were measured in 1-5 Likert scale.

6.1.2 Missing Values

Data were first tested for missing values. According to Tabachnick & Fidell (as cited in Barber, 2008), a researcher has to be more concerned about the pattern of missing values, rather than the number of missing values or cases.

Since data were collected by face to face interviews, interviewers were able to get an answer for most of the items in the survey. Possible adjustments for missing values include list-wise or pair-wise deletion, mean substitution, regression imputation and matching response patterns (Schumaker & Lomax, 2004). When the number of missing cases/values is below 10%, missing values can be substituted with means. In this case, a few missing values existed in the sample data set, and they were replaced with the mean value of each variable.

6.1.3 Outliers

Outliers can be described as observations that significantly deviate from the rest of the observations. In other words, an outlier lies outside of the general existing pattern or distribution of the data (Langford & Lewis, Moore & McCabe as cited in Barber, 2008). Out of many techniques available to identify outliers, current study employed the Mahalanobis distance (D^2) method. Mahalanobis distance measures the distance from a certain observation to the mean of the remaining cases of the variable. Since outliers may affect certain important statistical measures such as mean, the standard deviation, and correlation coefficient values, outliers should be treated either by explaining, deleting, or accommodating using robust statistics (Schumaker & Lomax, 2004). Sample data which used for the current analysis had five distinct outliers (relatively high Mahalanobis distance from the given set of data) and they were deleted from the analysis.

6.1.4 Normality

Checking for normality is highly important in statistical techniques which use maximum likelihood technique for estimation procedures (Hair et al. 1998). Skewness and Kurtosis were checked to assess the normality of the sample data set. Non-normality can be treated by sampling more data, or performing linear transformations (Schumaker & Lomax, 2004).

Examples for such linear transformation are square root, reciprocal, logit, and probit (Schumaker & Lomax, 2004).

“Skewness refers to how uneven the data can be distributed with a greater part of the scores stacked up on one side of the distribution with a few responses (not necessarily outliers) set-off in one tail of the distribution” (Hair et al., 1998). Different authors use different cut-off values to test skewness, and most commonly use range is between (-2) and (+2) (Hair et al., 1998). Other than the variable “SO 1”; a travel decision variable, and the variable “IS 4”; an external information search variable, which were slightly skewed (-1.198 and -1.395 respectively), all the other variables lied in the range of (-1) and (+1). In general, all the variables used in the model analysis lied in the range of (-2) and (+2).

Kurtosis refers to how peaked or flat the data distribution is. According to West et al. (1996) in Barber (2008), data should lie in-between (-1) and (+1) for Kurtosis to be normal. Normally, values between (+2) and (-2) also would be acceptable (Field, 2009). For this study, other than the variable “IS 5”, an external information search variable, and the variable “SO 2”, which were slightly peaked (1.128 and 1.016 respectively), all the other variables lied in the range of (-1) and (+1) for kurtosis. Acceptable skewness and kurtosis values met the assumption of normality for the sample data set.

6.1.5 Linearity

Linearity is another important assumption of SEM since the procedure heavily depends on correlation coefficients. Variables that deviate from linearity affect the correlation coefficient, and the extent of deviation is proportional to the effect size of the correlation coefficient (Schumaker & Lomax, 2004). Pearson correlation coefficient measures the degree of linear relationship between two particular variables (Hair et al. 1998, Schumaker & Lomax, 2004).

In this study, out of all possible pairs in the data set (625), pearson correlation coefficient is statistically significant at 0.05 significance level for 94% of pairs. Therefore, the assumption of linearity was assumed for the sample data set.

6.2 Exploratory Factor Analysis

In SEM, it is necessary to pretest the measurement items for their validity before using them in the analysis, regardless of whether the measurement items were developed specifically for the study or adopted from past literature. A total of 25 items were used, and these items were directly chosen from literature, modified, or specifically designed for the current study. Proposed model constructs were measured using multiple indicator variables/items: two items to measure costs of information search, three items to measure information source characteristics, six items to measure external information search, five items to measure information processing, five items to measure pre-trip destination image, and four items to measure travel decisions.

First, it is important to assess the content validity of the survey items. In order to achieve content validity, academic professionals at the university were asked to check the questionnaire items for their clarity, content, and understandability. After making necessary adjustments to the survey according to their inputs, it was further tested with a sample of 25 undergraduate students for the same purpose. For the pre-testing, face to face interviews were conducted. Based on the suggestions made by the pre-test sample, scale items to measure each construct were finalized.

Before scale items were used in the analysis, uni-dimensionality for the measurement of a construct was tested. Uni-dimensionality ensures all the underlying variables of a particular construct measures the single construct/relevant latent variable (Joreskog & Sorbom, 1993; Shumaker & Lomax, 2004). Uni-dimensionality validation tests are referred to as convergent validity and item reliability.

In order to assess the convergent validity and reliability of items used to measure latent model constructs, an exploratory factor analysis (EFA) with a principal component extraction was employed for relevant indicator variables. Appropriateness of factor analysis was determined based on the Kaiser-Meyer-Olkin measure of sampling adequacy and the Bartlett's test of sphericity. Past studies have utilized a value of 0.6 or above for the Kaiser-Meyer-Olkin test for sampling adequacy (Chen and Tsai, 2006). Hence, a cut-off value of .60 or above was used for the Kaiser-Meyer-Olkin measure of sampling adequacy test. Bartlett's test of sphericity should also be statistically significant at $p=0.05$ significance level to conduct factor analysis. Items with factor loadings greater than 0.6 were chosen to explain the relevant construct and items less than 0.4 were eliminated from the analysis (Chen & Hsu, 2001; Chen & Tsai, 2006). Cronbach's alpha values greater than 0.7 confirm the item reliability of indicator variables (Hair et al., 1998).

6.2.1 Costs of Information Search

Principal component factor analysis was performed on selected scale items to measure costs of information search and results are indicated in Table 19.

Table 19: Validity and reliability of items used to measure costs of information search

Scale items	Factor 1
1) The amount of time it requires, does not affect my ability to search information before travel (IS 1)	.872
2) My income level does not affect my ability to search information before travel (C 2)	.872
Reliability coefficient (Cronbach's alpha)	.684
Eigen value	1.521
Variance explained	76.030%
Kaiser-Meyer-Olkin measure of sampling adequacy	.594
Bartlett's test of sphericity	0.000

Both Kaiser-Meyer-Olkin test of sampling adequacy and Cronbach's alpha values marginally agreed with the minimal acceptable values. However, Bartlett's test of sphericity was significant ($p=0.000$). Selected two items to measure costs of information search had loadings greater than 0.6. These two items together explained approximately 76% of the variance of the costs of external information search.

6.2.2 Information Source Characteristics

As for the costs of information search, selected scale items to measure information source characteristics were tested for reliability and validity by conducting a principal component factor analysis. As indicated in the table 20, all the selected items were loaded in to single factor with loadings greater than 0.6. Appropriateness of the factor analysis was confirmed by having a 0.662 for Kaiser-Meyer-Olkin measure of sampling adequacy and a significant p-value for Bartlett's test of sphericity.

Three selected items measured nearly 71% of the variance of their relevant model construct of information source characteristics. Reliability of scale items to measure costs of information search was 0.794, which was greater than the minimal acceptable level of 0.7.

Table 20: Validity and reliability of items used to measure information source characteristics

Scale item	Factor 1
1) Easy access for information encourages me to make use of them (SC 1)	.883
2) I am likely to collect information only from credible sources (SC 2)	.883
3) I always prefer to use simple information than something complicated (SC 3)	.753
Reliability coefficient (Cronbach's alpha)	.794
Eigen value	2.125
Variance explained	70.834%
Kaiser-Meyer-Olkin measure of sampling adequacy	.662
Bartlett's test of sphericity	0.000

6.2.3 External Information Search

Selected scale items to measure traveler external information search behavior were tested for validity and reliability. Principal component factor analysis was performed and results are indicated in Table 21. Appropriateness of the factor analysis was indicated by obtaining a value of 0.839 for the Kaiser-Meyer-Olkin test of sampling adequacy and significance ($p=0.000$) for Bartlett's test of sphericity. Out of six variables chosen to explain external information search, principle component factor analysis selected five items which had loadings greater than 0.6 to explain the latent construct of external information search.

Table 21: Validity and reliability of items used to measure information search

Scale items	Factor 1
1) When I make my travel decisions, I am likely to rely on third party independent organizations (TV, newspapers, magazine articles) (IS 1)	.790
2) When I make my travel decisions, I am likely to rely on e-net (IS 2)	.772
3) When I make my travel decisions, I am likely to rely on interpersonal external information sources (i.e. friends and family or travel consultants) (IS 3)	.745
4) When I make my travel decisions, I am likely to rely on market controlled (advertising, product/service information package, product brochures) (IS 4)	.696
5) When I make my travel decisions, I am likely to rely on reseller information sources (i.e. catalogs by sellers, information charts, travel offices, government offices) (IS 5)	.869
6) When I make my travel decisions, I am likely to rely on direct inspection (observation, inference) (IS 6)	.215
Reliability coefficient (Cronbach's alpha)	.829
Eigen value	3.062
Variance explained	61.039%
Kaiser-Meyer-Olkin measure of sampling adequacy	.839
Bartlett's test of sphericity	0.000

Since IS 6 had a loading of 0.215, which is less than 0.6, with the first factor, it was eliminated from further consideration. All the pre-determined six variables explained 61.04 % of the variance of the latent model construct of external information search. Cronbach's alpha value of 0.829 suggests the reliability of selected constructs to measure a single latent variable of external information search.

6.2.4 Information Processing

A principal component factor analysis was conducted on selected five items to examine the uni-dimensionality of the variables to measure information processing. As illustrated in Table 22, results of the Kaiser-Meyer-Olkin measure of sampling adequacy test (0.781) and the Bartlett's test of sphericity ($p = .0.000$) indicated that data are acceptable for factor analysis.

Table 22: Validity and reliability for items used to measure information processing

Scale items	Factor 1	Factor 2
1) When I make my travel decisions, I am likely to select related information among the information sources (IP 1)	.746	.093
2) When I make my travel decisions, I am likely to verify the accuracy of information (IP 2)	.819	-.072
3) When I make my travel decisions, I am likely to differentiate the sources of information (IP 3)	.819	.004
4) When I make my travel decisions, I am likely to categorize information I received (IP 4)	.766	.006
5) I am likely to simplify all the information I get from information sources such as travel agents, guidebooks, etc. (e.g., instead of remembering all the details, I simply say the destination is a good/bad and/or expensive / inexpensive) (IP 5)	.011	.996
Reliability coefficient (Cronbach's alpha)	.795	
Eigen value	2.488	1.006
Variance explained	69.753	20.121
Kaiser-Meyer-Olkin measure of sampling adequacy	.781	
Bartlett's test of sphericity	0.000	

Selected items were loaded in to two factors. Except the IP 5, the other four variables were loaded in to factor 1 with loadings greater than 0.6. According to the factor results, first factor explains 69.75 % of the variance of the latent variable of information processing. A Cronbach's reliability score of 0.795 guaranteed the reliability of measurement items.

6.2.5 Pre-Trip Destination Image

The principal component factor analysis was performed with selected items for pre-trip destination image. Appropriateness of factor analysis was determined by the Kaiser-Meyer-Olkin measure of sampling adequacy of (0.767) and the Bartlett's test of sphericity (0.000). The principle component factor analysis results with factor loadings are indicated in Table 23. Other than the DI 5, before I travel, I was aware of the climate at the destination which has a factor loading of 0.28 with the first factor, all the other variables show significant loadings with the factor 1.

Table 23: Validity and reliability for items used to measure pre-trip destination image

Scale items	Factor 1	Factor 2
1) Before I travel, I am aware of the wilderness activities around the destination (DI 1)	.831	.058
2) Before I travel, I am aware of the price levels of the destination (DI 2)	.824	-.098
3) Before I travel, I am aware of the local infrastructure at the destination area. (DI 3)	.664	.298
4) Before I travel, I am aware of the natural attractions at the destination (DI 4).	.822	.020
5) Before I travel, I am aware of the climate at the destination (DI 5)	.028	.973
Reliability coefficient (Cronbach's alpha)	.791	
Eigen value	2.517	1.020
Variance explained	60.332	20.391
Kaiser-Meyer-Olkin measure of sampling adequacy	.767	
Bartlett's test of sphericity	0.000	

Two factors were extracted from the varimax rotation of PC factor analysis and the first factor explains 60.332% of the variance of the scale. The first extracted factor was comprised of four items as indicated in the table 23 and the Cronbach's alpha reliability score of 0.791 exceeds the acceptable level of (>0.7).

6.2.6 Travel Related Search Outcomes

Principal component factor analysis was performed with selected four items to measure search out comes and appropriateness of factor analysis was achieved by having 0.784 for the Kaiser-Meyer-Olkin measure of sampling adequacy and significance ($p=0.00$) for Bartlett's test of sphericity. The principle component factor analysis indicated that the first factor explains almost 67% of the variance, and it is comprised of all the selected four items with loadings greater than 0.6. Factor loading for each indicator is given in Table 24. The Cronbach's alpha reliability score of 0.83 for scale items also exceeded the lower-bound 0.7 level. Therefore, four items loaded on factor one was retained for further analysis.

Table 24: Validity and reliability for items used to measure search outcomes

Scale items	Factor 1
(1) Before I travel, I decide the number of attractions to visit (SO 1)	.838
(2) Before I travel , I estimate the expenses at the destination (SO 2)	.857
(3) Before I travel, I decide the destinations to visit (SO 3)	.791
(4) Before I travel, I decide how many nights to stay at the destination (SO 4)	.785
Reliability coefficient (Cronbach's alpha)	.831
Eigen value	2.679
Variance explained	66.974
Kaiser-Meyer-Olkin measure of sampling adequacy	.799
Bartlett's test of sphericity	0.000

6.3 Confirmatory Factor Analysis and Measurement Model

Once the variables were selected from EFA, confirmatory factor analysis was employed to confirm the validity of selected indicator variables to measure relevant constructs.

Hypothesized measurement model is shown in Figure 17 in Chapter 4. Instead of showing uni-directional paths among latent variables, measurement model depicts covariances to connect each latent variable with every other latent variable in the model, and covariances are indicated by the two headed, curved arrows.

Information source characteristics, costs of information search, information searching, information processing, pre-trip destination image, and search outcomes are latent variables used in the model and they are illustrated by ovals in the model. As indicated in Figure 17, information source characteristics (SC) was measured by three measurement variables, namely SC 1, SC 2, and SC 3; costs of information search was measured by two variables, namely C 1, and C2; information searching (IS) was measured by five manifest variables, namely IS 1, IS 2, IS 3, IS4, and IS 5; information processing (IP) was measured by IP 1, IP 2, IP 3, and IP 4; pre-trip destination image (DI) was measured by DI 1, DI 2, DI 3, and DI 4 while search outcomes (SO) was measured by SO1, SO 2, SO3, and SO4.

6.3.1 Model Fit of the Measurement Model

Measurement model was estimated using maximum likelihood method to evaluate the measurement variables of each construct. As listed in the Table 25, seven common model fit indices were evaluated to assess the overall model fit. Even though model chi-square has been recommended as a model fit criteria, it is not always considered as an absolute standard to assess model fit because its sensitivity to the sample size (Joreskog & Sorbom, 1993; Shumaker & Lomax, 2004; Cole et al., 2002). For larger samples, chi-square test often indicates significance.

According to chi-square test, non-significance is desired in order for model to be acceptable. However, in SEM, chi-square/d.f. is considered a better indicator of the model fit for larger samples. Chi-square/d.f. ratio below 5 indicates a good model fit (Chen et al. 2007, Hair et al. 1998, Schumaker & Lomax, 2004). All the fit indices assessed in this study; Goodness-of-fit (GFI), Adjusted goodness -of-fit (AGFI), Normed fit index (NFI), Comparative fit index (CFI), Root-mean-square error of approximation (RMSEA), Hoelter 0.5, and Chi-square/d.f met the recommended values. Therefore, satisfactory overall model fit was suggested.

Table 25: Fit indices for the measurement model

Fit indices	Measurement model	Recommended value	Acceptance
Goodness-of-fit (GFI)	0.920	0.9	Accepted
Adjusted goodness –of-fit (AGFI)	0.895	0.8	Accepted
Normed fit index (NFI)	0.910	0.9	Accepted
Comparative fit index (CFI)	0.952	0.9	Accepted
Root-mean-square error of approximation (RMSEA)	0.049	<0.5 or <0.8 with minimum acceptance	Accepted
Hoelter 0.5	245	>200	Accepted
Chi-square test	Chi-square = 395.2 Df-194 p-value=0.000	p-value >0.05	Not accepted

6.3.2 Composite Reliability of the Measurement Model

After assessing the model fit, internal consistency of indicators measuring every latent model construct was assessed. In the measurement model, internal consistency was assessed by evaluating composite reliability index (Hatcher, 1994; Cole et al. 2002). Composite reliability shares the similar concept with Cronbach's alpha which is an internal consistency measurement in exploratory factor analysis. Composite reliability was calculated for each indicator variable and they are listed in Table 26.

Composite reliability (CR) was calculated using the following formula.

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

Table 26: Reliability scores for the measurement scales

Variable	Composite R-squared	Composite reliability
Information Searching		0.85
IS 1 (Third party)	0.598	
IS 2 (e-net)	0.541	
IS 3 (Interpersonal)	0.524	
IS 4 (Market controlled)	0.469	
IS 5 (Reseller)	0.528	
Information Processing		0.82
IP 1 (Related information)	0.618	
IP 2 (Verify the accuracy)	0.571	
IP 3 (Differentiate)	0.522	
IP 4 (Categories)	0.435	
Destination Image		0.85
DI 1 (Wilderness)	0.684	
DI 2 (Price)	0.669	
DI 3 (Infrastructure)	0.551	
DI 4 (Natural)	0.457	
Search Outcomes		0.89
SO 1 (Attractions)	0.435	
SO 2 (Expenses)	0.820	
SO 3 (Choice)	0.778	
SO 4 (Length of Stay)	0.684	
Costs		0.69
C 1 (Time)	0.498	
C 2 (Money)	0.544	
Source Characteristics		0.80
SC 1 (Easy access)	0.731	
SC 2 (Credible)	0.697	
SC 3 (Simple)	0.328	

Other than the costs of information search which shows a composite reliability of 0.69, composite reliabilities for all the other constructs were greater than 0.8. Composite reliability for each construct was confirmed by having values greater than the minimum acceptable value of

0.7 (Nunally as cited in Cole et al. 2002). R-squared values give an idea about the percentage of indicator variable that is explained by its underlying construct (Hatcher, 1994, Cole et al., 2002). R-squared values are considered to measure reliability for each indicator variable. R-squared values for costs of information search varied from 0.498 to 0.544 and it varied from 0.328 to 0.731 for information source characteristics. R-squared values for information searching variables varied from 0.469 to 0.598, while information processing varied from 0.435 to 0.618. Similarly, R-squared values for destination image varied from 0.457 to 0.684, while for search outcomes, it varied from 0.435 to 0.820. Information source characteristics consists of an indicator variable (I always prefer to use simple information than something complicated, SC 3), which has the lowest R-squared value (0.328) and the variable of SO 2; before I travel here, I estimated the expenses at the destination, which is a measurement variable of the destination image construct, has the highest R-squared value (0.820) of all the indicator variables used in the model.

6.3.3 Construct Validity of the Measurement Model

After assessing the internal consistency of indicators, the model constructs were assessed for their construct validity (convergent and discriminant validity) (MacCallum, 1995; Schumacker & Lomax, 2004; Bagozzi and Yi, 1988; Fornell and Larcker). Table 27 shows the factor loadings, relative t-values, average variance extracted and the shared variance between constructs.

Average variance (AVE) for each construct was calculated using the following formula;

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

Table 27: Factor loadings and discriminant validity scores for the measurement scales

Variable	Factor loading	t-value	Average variance	SQRT Average variance	Shared variance	
Information Searching			0.53	0.73		
SI 1 (Third party)	0.774***	13.044			IS/IP	0.320
SI 2 (E-net)	0.735***	13.101			IS/DI	0.218
SI 3 (Interpersonal)	0.724***	13.052			IS/SO	0.310
SI 4 (Market controlled)	0.685***	Fixed				
SI 5 (Reseller)	0.727***	12.715				
Information Processing			0.54	0.73		
IP 1 (Related information)	0.786***	11.183			IP/DI	0.402
IP 2 (Verify the accuracy)	0.756***	11.173			IP/SO	0.644
IP 3 (Differentiate)	0.722***	12.624				
IP 4 (Categories)	0.659***	Fixed				
Destination Image			0.59	0.77		
DI 1 (Wilderness)	0.827***	14.136			IS/DI	0.218
DI 2 (Price)	0.818***	13.750			IP/DI	0.402
DI 3 (Infrastructure)	0.742***	13.220			SO/DI	0.381
DI 4 (Natural)	0.676***	Fixed				
Search Outcomes			0.68	0.82		
SO 1 (Attractions)	0.660***	14.746			IS/SO	0.310
SO 2 (Expenses)	0.905***	22.694			IP/SO	0.644
SO 3 (Choice)	0.882***	21.999			DI/SO	0.381
SO 4 (Length of Stay)	0.827***	Fixed				
Costs			0.52	0.72		
C 1 (Time)	0.738***	Fixed			SC/C	0.109
C 2 (Money)	0.706***	3.167			IS/C	-0.065
					IP/C	-0.232
					DI/C	-0.034
					SO/C	-0.113
Source Characteristics			0.59	0.77		
SC 1 (Easy access)	0.855***	13.813			IS/SC	0.104
SC 2 (Credible)	0.835***	Fixed			IP/SC	0.086
SC 3 (Simple)	0.573***	11.229			DI/SC	-0.043
					SO/SC	0.045

Threshold value of above 0.5 for average variance extracted was recommended by Hair et al. (1998) for convergent validity. As listed in Table 27, convergent validity for the entire latent

model constructs: information searching (0.53), information processing (0.54), pre-trip destination image (0.59), search outcomes (0.68), costs of information search (0.52), and information source characteristics (0.59) were above 0.5, which provided sufficient evidences for convergent validity.

To assess the discriminant validity of model constructs, shared variances between all possible constructs were used (Table 27). To suggest the discriminant validity, shared variance between indicators should be less than the square root of the average variance extracted for the given constructs (Khosrow-Pour M., 2006). As indicated in the table 25, shared variances among all the possible combinations were less than their underlying constructs' square root of the average variances, which suggested the discriminant validity of model constructs. Since overall model fit, convergent validity, composite reliability, and discriminant validity for the initial measurement model were in accordance with acceptance criteria, measurement model illustrated in Figure 19 was established for further analysis.

6.4 Model Testing

The empirically tested initial structural model is illustrated in Figure 23. Proposed model consists of two exogenous variables, namely costs of information search and source characteristics where their antecedents lie outside the empirical part of the model. Other four constructs in the model, information searching, information processing, pre-trip destination image, and search outcomes were hypothesized to be affected by one or more of the other constructs, hence they were treated as endogenous variables. In Figure 23, symbol α represents path coefficient between exogenous and endogenous variables while symbol β represents the path coefficients among endogenous variables. Letter "D" represents the disturbance or error that is accounted for indicators which are not listed in the proposed model.

Measurement errors of indicator variables are represented by letter “e”. As indicated in the model, model hypotheses and relevant path coefficients are listed below.

H₁: The more favorable the information source characteristics, the more extensive the information searching (α_1).

H₂: The more favorable the information source characteristics, the more extensive the information processing (α_2).

H₃: The higher the costs of information searching, the less extensive the information searching (α_3).

H₄: The higher the costs of information searching, the less extensive the information processing (α_4).

H₅: The more favorable the external information searching, the more extensive the information processing (β_1).

H₆: The higher the information processing, the better understanding of the pre-destination image (β_2).

H₇: The higher the information processing, the more favorable the search outcomes (β_3).

H₈: The better the pre-trip destination image, the more favorable the search outcomes (β_4).

H₉: The more extensive the external information searching, the better understanding of the destination image (β_5).

H₁₀: The more extensive the external information searching, the more favorable the search outcomes (β_6).

The structural model was tested using Amos, and selected goodness of fit indices for the initial model showed that it had a relatively good fit to the given data (Table 28). However, in parameter significance tests, critical t-values for four factor loadings/path coefficients were not significant at $p = 0.05$ significance level. Paths from information source characteristics to information searching ($p = 0.059$), information source characteristics to information processing ($p = 0.197$), costs of information search to information searching ($p = 0.248$), and information searching to pre-trip destination image ($p = 0.085$) were insignificant in the initial model.

The initial structural model was modified by deleting some of the insignificant paths in the original model. Although the link between costs of information search and information

searching was not statistically significant at $p=0.05$ significance level, factor loading of this link showed the hypothesized negative direction. Also, the relationship between costs of information search and information searching has repeatedly proven in the consumer behavior as well as the past tourism behavior literature (Fodness & Murray, 1997, 1998, 1999; Schul & Crompton, 1983; Vogt & Fesenmaier 1988; Woodside & Ronkainen, 1980; Wilson, 1997).

Therefore, the link between costs of information search and information searching was retained in the model for further analysis. Since the link between information source characteristics and information searching was slightly insignificant ($p=0.059$) at $p=0.05$ significance level, this link also considered for further analysis.

The initial structural model was modified by deleting the path from information searching to pre-trip destination image and the path from information source characteristics to information processing. Deleting these two paths did not improve the model fit indices of the initial model. Model fit criteria for the first revised model are listed in Table 28. However, deleting these two paths made the path from information source characteristics to information searching, which was insignificant at the original model, significant ($p=0.048$) at $p=0.05$ significance level. In order to improve the model fit, the modification indices suggested by the revised structural model was checked. Modification indices suggested a correlation between the error terms of IP 3 and IP 4 with the chi-square change of 24.304. First revised model was further modified by adding the correlation between the error terms of IP 3 and IP4. This modification did improve the model fit in relation to the initial model. Chi-square value dropped to 373.3 from 399.3. AGFI value rise to 0.903 from 0.896 and CFI value from 0.952 to 0.958.

Model fit indices for the second revised model are also listed in Table 28. Since the second revised model has an acceptable model fit for all the given fit indices, second revised

model was selected as the final model. In addition, other than the path from costs of information search to information searching, all the other paths in the final model were significant at ($p=0.05$) significance level.

More than 90% of paths in the final model were significant at ($p=0.001$) significance level.

Table 28: Fit indices for the modified structural models

Fit indices	Initial structural model	Revised structural model 1	Revised structural model 2
Goodness-of-fit (GFI)	0.919	0.918	0.924
Adjusted goodness –of-fit (AGFI)	0.896	0.896	0.903
Normed fit index (NFI)	0.909	0.908	0.915
Comparative fit index (CFI)	0.952	0.951	0.958
(RMR)	0.038	0.040	0.041
Root-mean-square error of approximation (RMSEA)	0.049	0.049	0.045
Hoelter 0.5	247	246	265
Chi-square test	Chi-square = 399.3 Df-198 p-value=0.000	Chi-square = 404.0 Df-200 p-value=0.000	Chi-square = 373.3 Df-199 p-value=0.000

Model fit indices of the initial and the final selected model are listed in Table 29. When assessing the model fit, insignificance for chi-square test is desired. Since chi-square value is sensitive to larger sample sizes, chi-square/d.f. is considered a better indicator of the model fit for larger samples. In SEM, Chi-square/d.f. ratio below 5 indicates a good model fit (Chen et al., 2007, Hair et al., 1998, Schumaker & Lomax, 2004). In the final model, chi-square/d.f ratio was 1.875 which suggested an acceptable model fit. Other goodness of fit indices and alternative fit indices given in Table 29 further met their respective decision criterions.

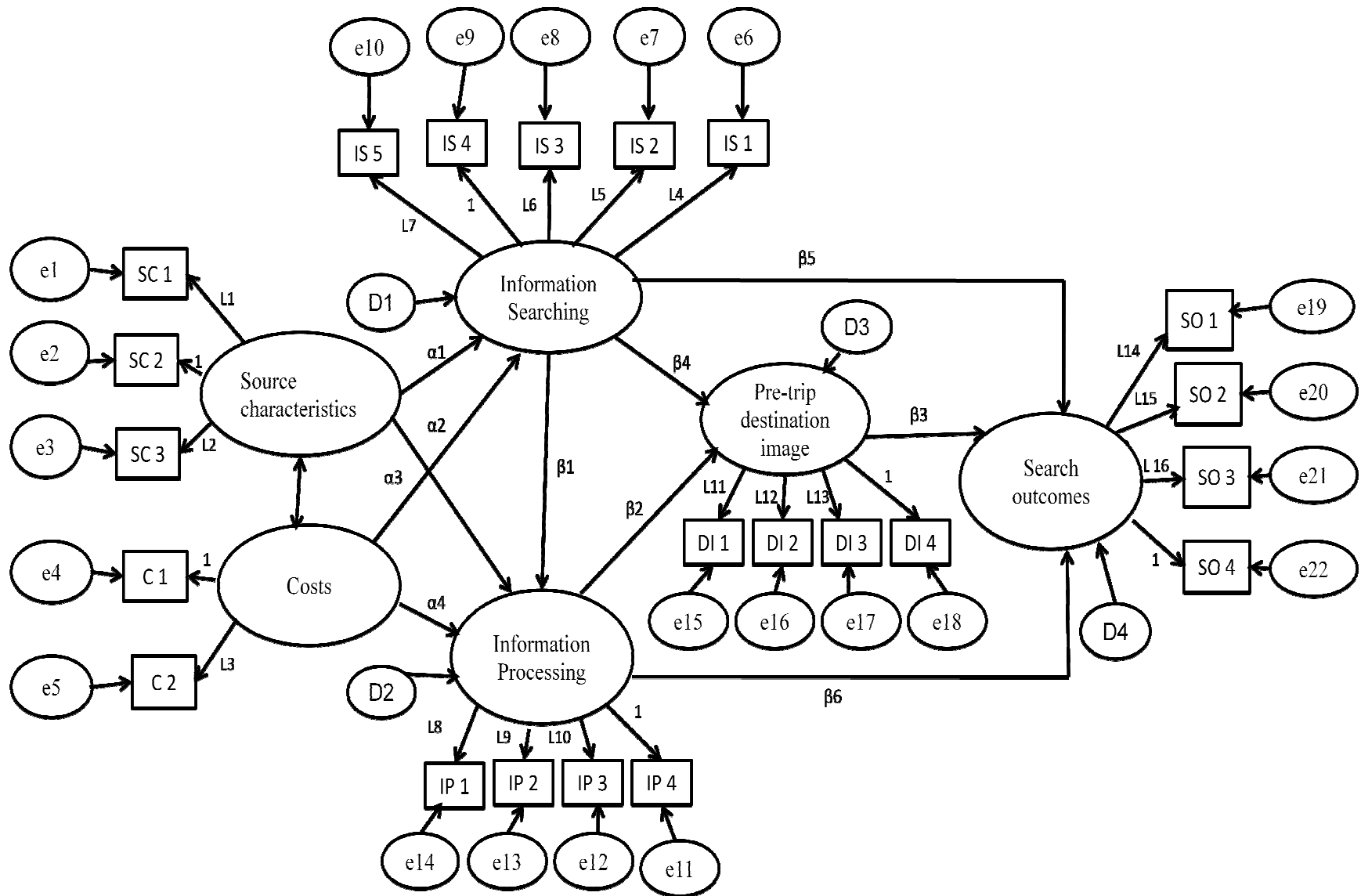


Figure 23: Full model with the α and the β matrices

Table 29: Fit indices for the initial and the final model

Fit indices	Initial structural model	Recommended values	Final model
Goodness-of-fit (GFI)	0.919	>0.9	0.924
Adjusted goodness –of-fit (AGFI)	0.896	>0.9	0.903
Normed fit index (NFI)	0.909	>0.9	0.915
Comparative fit index (CFI)	0.952	>0.9	0.958
(RMR)	0.038	<0.05	0.041
Root-mean-square error of approximation (RMSEA)	0.049	<0.05	0.045
Hoelter 0.5	247	>200	265
Chi-square test	Chi-square = 399.3 Df-198 p-value=0.000	p-value>0.05	Chi-square = 373.3 Df-199 p-value=0.000

6.4.1 Estimated Structural Model

Structural model with estimated path coefficients is shown in Figure 24. All path coefficients are indicated on relevant arrows, and error terms and disturbance values are indicated next to the circle indicating errors and disturbances. In order to check whether the hypotheses are supported by path analysis results, direction and magnitude of structural coefficient values were examined. Instead of un-standardized coefficient values, standardized coefficient values were utilized to evaluate strengths of path coefficients. Standardized coefficients should be evaluated in order to avoid the errors accounted by different measurement scales (Cole et al. 2002). Other than the path from costs of information search to information searching, all regression coefficients/parameter estimates were significant at ($p=0.05$) significance level. Although the path from costs of information search to information searching was not significant, results confirmed the expected negative direction.

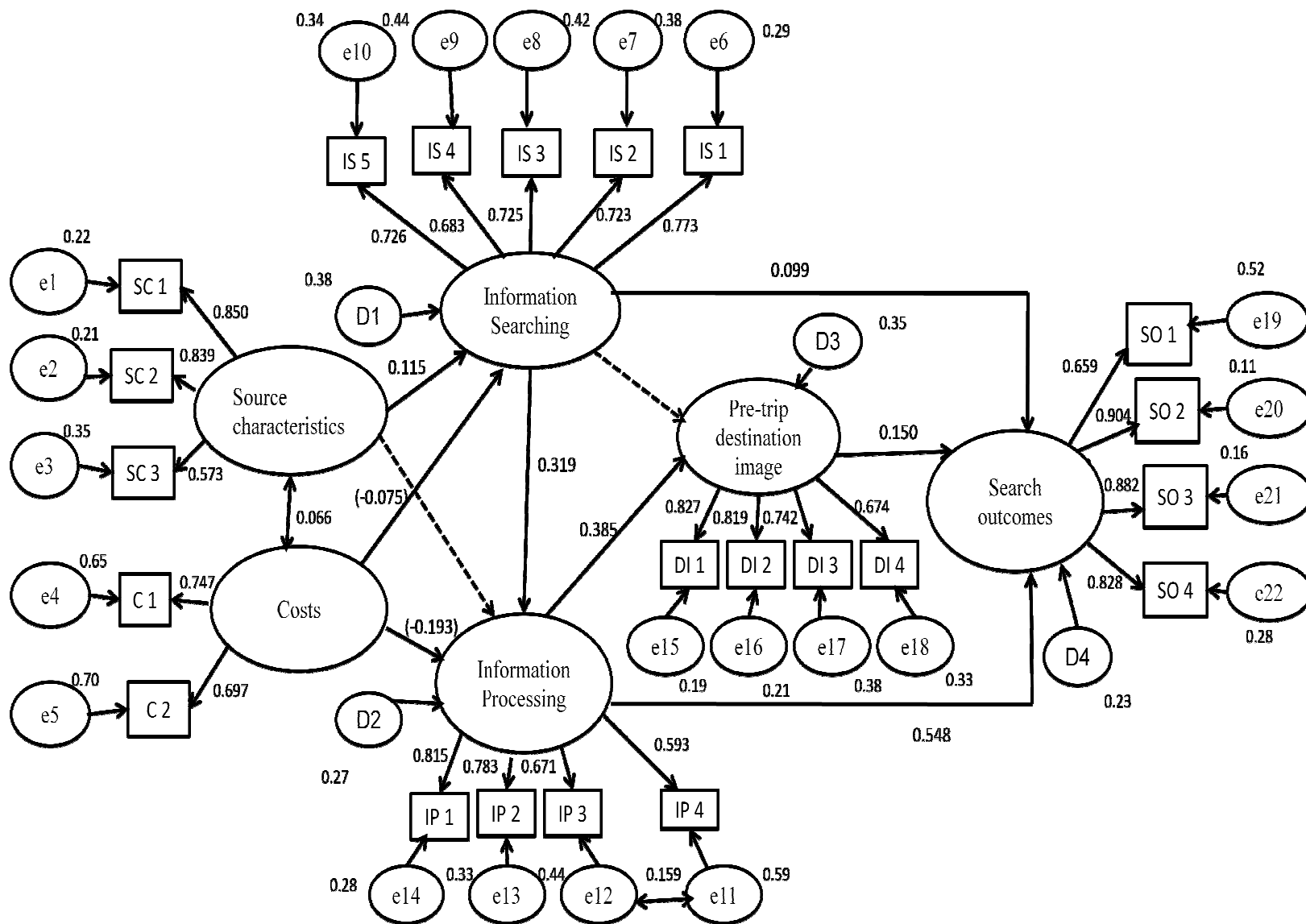


Figure 24: Final structural model and standardized parameter estimates

6.4.2 Effects of Model Constructs

Table 30 reports the standardized direct effect (DE), indirect effect (IE) and total effect (TE) among model constructs in the final model. According to Bollen (as cited in Cole et al. 2002), direct effect can be defined as the influence of one variable over another with no mediation effects, while indirect effects can be defined as the influence of one variable over another that is mediated by at least one other variable. Total effects can be described as the summation of direct and indirect effects. Bollen (as cited in Cole et al. 2002) suggested that direct and indirect effects along with total effects are useful indicators to understand the effect of a certain variable on another.

Table 30: Direct, indirect, and total effects of model constructs

Costs	Source characteristics			Information searching			Information processing			Pre-trip destination image		
	DE	IE	TE	DE	IE	TE	DE	IE	TE	DE	IE	TE
Information searching	-0.075		-0.075	0.115		0.115						
Information processing	-0.193	-0.024	-0.217		0.037	0.037	0.319		0.319			
Destination image		-0.084	-0.084		0.014	0.014		0.123	0.123	0.385		0.385
Search outcomes		-0.139	-0.139		0.034	0.034	0.099	0.193	0.292	0.548	0.058	0.606
										0.150		0.150

Travel related search outcomes are directly and indirectly influenced by costs of information search, information source characteristics, information searching, information processing, and search outcomes. According to the direct effect values reported in the Table 30, information processing has the highest positive effect on search outcomes (0.548) than other model constructs. In addition, information processing has an indirect effect on search outcomes through pre-trip destination image (0.058).

Hence the overall effect of information processing on search outcomes was (0.606). Results suggested that the overall effect of information processing on search outcomes is much stronger than the other suggested model constructs on search outcomes.

Direct effect of information searching on search outcomes (0.099) was less than the indirect effect of information searching on search outcomes (0.193) through information processing and pre-trip destination image. The total effect of information searching on search outcomes (0.292) was lower than the total effects of information processing (0.606) and higher than the total effect of pre-trip destination image on search outcomes (0.150). Thus search outcomes are greatly influenced by one's information processing behavior followed by the information searching.

Both source characteristics and costs of information search have an indirect effect on search outcomes. Effect of costs of information search is higher than the overall effect of information source characteristics on search outcomes. In terms of information searching, information source characteristics (0.115) have a much stronger effect than the costs of information search (-0.075).

Furthermore, results indicate that the information searching does not directly effect on pre-trip destination image formation but it has a positive indirect effect of (0.123) on pre-trip destination image. However, information processing has a strong positive effect on pre-trip destination image formation (0.385). Even in the pre-trip destination image formation, information processing plays a pivotal role than the other suggested model constructs.

6.4.3 Results of Path Analysis

The summary results of hypotheses testing are listed in Table 31. The more favorable the information source characteristics, the more extensive the information searching was the first

hypothesis in the proposed model which showed a 0.115 factor loading. This path was significant (0.048) at $p=0.05$ significance level with the relevant t-value of 1.973. Results proved a positive relationship between the information source characteristics and the information searching.

Hypothesis 2 of the proposed model stated that the more favorable the information source characteristics, the more extensive the information processing while hypothesis 4 stated that the higher the costs of information searching, the less extensive the information processing. Since both hypotheses 2 and 4 were not significant, they were eliminated from the final model.

The higher the costs of information search, the less extensive the information searching was the third hypothesis in the proposed model. Although the hypothesis 3 was not significant, results confirmed the expected negative direction. Also, the relationship between the costs of information search and information searching was repeatedly proven in the past consumer behavior as well as in the tourism behavior studies. Therefore the link from costs of information search to information searching was retained in the final model (Fodness & Murray, 1997, 1998, 1999; Schul & Crompton, 1983; Vogt & Fesenmaier 1988; Woodside & Ronkainen, 1980; Wilson, 1997).

Hypothesis 5 stated that the more favorable the acquired external information, the more extensive the information processing. The standardized coefficient of the path was 0.319 with the relevant t-value of 5.124 which was significant at ($p=0.001$) significance level. These results provide statistical evidence to support the magnitude and the direction of the hypothesis 5.

Hypothesis 6 of the proposed model stated that the higher the information processing, the better understand the destination image. The model demonstrates that path from information processing to pre-trip destination image. Standardized path coefficient was positive 0.385, which has a significant t-value of 6.045 at ($p=0.001$) significance level.

Results suggested that information processing has a positive direct effect on pre-trip destination image.

Table 31: Study hypotheses and test results

Hypothesis	Testing results
H1: Source characteristics → Information searching	Supported
H2: Source characteristics → Information processing	Not supported
H3: Costs of information search → Information searching	Not supported, but retained
H4: Costs of information search → Information processing	Supported
H5: Information searching → Information processing	Supported
H6: Information processing → Pre-trip destination image	Supported
H7: Information processing → Search outcomes	Supported
H8: Pre-trip destination image → Search outcomes	Supported
H9: Information searching → Pre-trip destination image	Not supported
H10: Information searching → Search outcomes	Supported

The more extensive the information processing, the more favorable the search outcomes was the seventh hypothesis and it was illustrated in the Figure 27, by an arrow from information processing to search outcomes. Standardized path coefficient for this path was positive 0.548 with the t-value of 8.122 which was significant at ($p=0.001$) significance level. Direction of the hypothesis 4 was confirmed by tests results. The path from pre-trip destination image to search outcomes represents the hypothesis 8; the better the destination image, the more favorable the search outcomes. Standardized path coefficient of positive (0.150) and the statistically significant t-value (2.943) at ($p=0.05$) supported the magnitude and the direction of hypothesis 8.

Hypothesis 9, the more extensive the external information searching the better understands the destination image was not statistically significant.

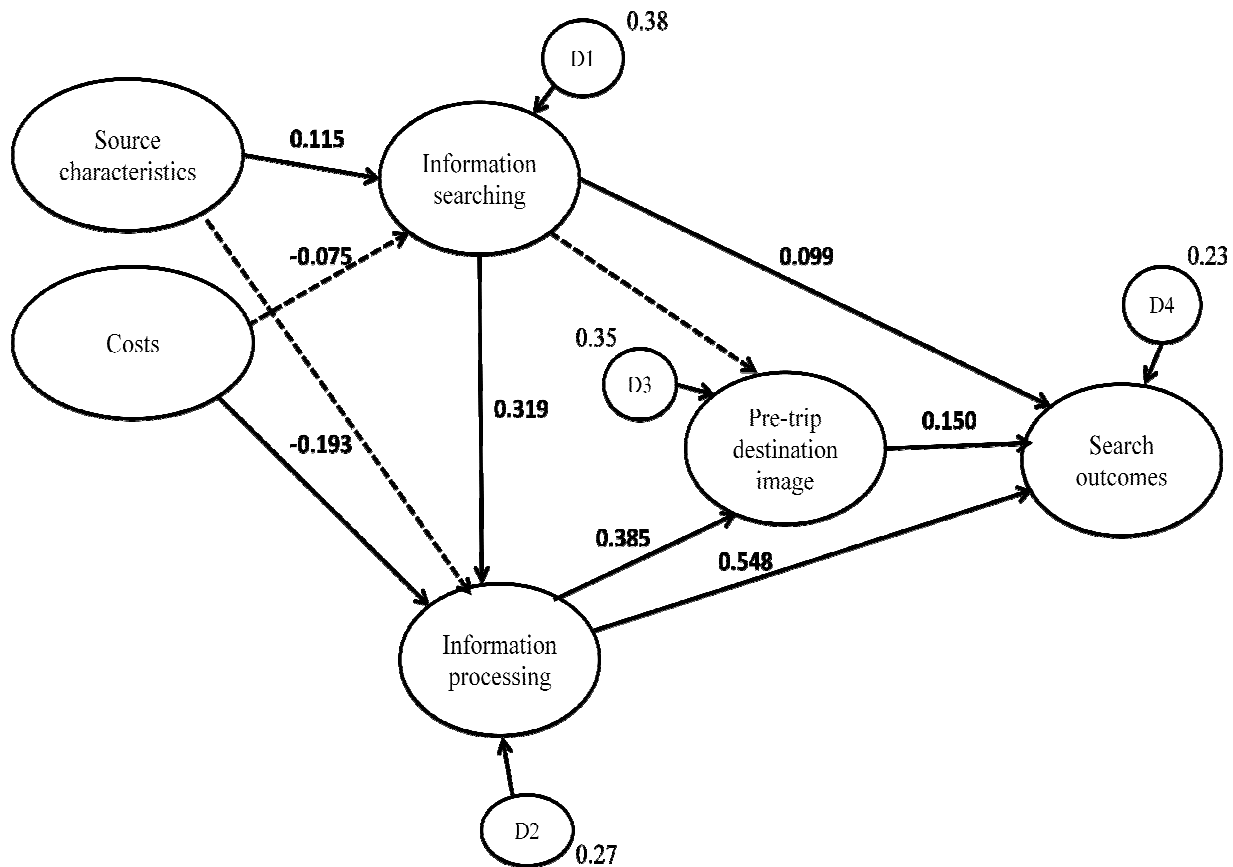


Figure 25: Final model showing significant and insignificant paths

Since the hypothesis 9 was not significant, it was eliminated from the final model though the results confirmed expected directions. The hypothesis 10 of the proposed model, the more extensive the external information search, the more favorable the search outcomes, had a factor loading of 0.099 with the t-value of 2.011. Proposed model with statistically significant and insignificant paths is shown in Figure 25.

6.4.4 Effects of Indicator Variables on Model Constructs

Factor loadings of each indicator variable on relevant model constructs describe how strongly each indicator variable contributes to its construct and they are listed in Table 32.

Time is the strongest determinant variable of costs of information search while the information source characteristics are primarily determined by easy access and credibility of information sources.

Table 32: Factor loadings of indicator variables on relevant model constructs

	Costs (C)	Source Characteristics (SC)	Information searching (IS)	Information Processing (IP)	Destination Image (DI)	Search Outcomes (SO)
C 1 (Time)	0.747					
C 2 (Money)	0.697					
SC 1 (Easy access)		0.850				
SC 2 (Credible)		0.839				
SC 3 (Simple)		0.573				
IS 1 (Third party)			0.773			
IS 2 (E-net)			0.723			
IS 3 (Interpersonal)			0.725			
IS 4 (Market controlled)			0.683			
IS 5 (Reseller)			0.726			
IP 1 (Related information)				0.815		
IP 2 (Verify the accuracy)				0.783		
IP 3 (Differentiate)				0.671		
IP 4 (Categories)				0.593		
DI 1 (Wilderness)					0.827	
DI 2 (Price)					0.819	
DI 3 (Infrastructure)					0.742	
DI 4 (Natural)					0.674	
SO 1 (Attractions)						0.659
SO 2 (Expenses)						0.904
SO 3 (Choice)						0.882
SO 4 (Length of Stay)						0.828

Other than the market controlled information sources, all the other given information source types; third party information sources, internet, information from interpersonal sources, and information from reseller greatly contributed to explain external information search.

In practice, these four information categories seemed to be most popular among respondents. In relation to information processing, gathering related information from variety of sources and verifying the accuracy of information are strongly loaded. According to the factor loadings, wilderness activities, price, and infrastructure are the attributes that greatly associated with traveler pre-trip destination image. Travel related search out comes are highly represented by estimated expenses, destination choice, and length of stay.

6.5 Discussion: Model Building

Some of the study findings were compatible with earlier studies conducted by different scholars in the field. Kiel & Layton (1981) and Srinivasan & Ratchford (1991) opined that consumer information search behavior is not a single behavior, but a conceptualized series of interrelated behaviors. This study also supports that notion by providing evidence that traveler search outcomes are not attained directly from information searching, but rather go through a series of interrelated behaviors. For example, travelers tend to form travel-related decisions using three routes. The first route is directly from information searching to search outcomes. The second route follows a course from information searching to information processing, and to search outcomes while the third route travels from information searching to information processing, then from information processing to a pre-trip destination image and to search outcomes. Previous studies have identified the importance of a pre-trip destination image on certain outcome behaviors, namely a destination choice, length of stay, and travel related expenditures (Tasci & Gartner, 2007; Aldskogius, 1977; Woodside & Lysonski, 1989).

The current study provides empirical support for the positive direct relationship between pre-trip destination image and search outcomes. Unexpectedly, the results showed that information searching contributed the least to search outcomes (0.099).

However, this study finding tends to correspond with those who insist information searching directly effects on search outcomes (Andereck & Caldwell, 1993; Bonn, 1998; Etzel and Wahlers, 1985). Further, the contribution of information searching to search outcomes came indirectly through information processing, as well as through pre-trip destination image, showing an overall effect of (0.292). One possible explanation for the least effect of information searching on search outcomes may be the major role of information processing in traveler consumer behavior one nearly ignored in historic tourism information search behavior literature. Should information processing be excluded from the model, the path from information searching to search outcomes becomes much stronger, due to the fact that information processing now assumes the major role formerly played by information searching. This study finding agrees with Fodness & Murray (1999) who suggested that the direct effect of information searching on search outcomes might be mediated by a traveler's evaluation and selection of alternatives. In fact, results showed that among the three steps examined (information searching, information processing, and pre-trip destination image), information processing contributed the most to the search outcomes (0.606).

Other than the effects of model constructs on search outcomes, study findings revealed another important fact: The formation of a pre-trip destination image is not a uni-dimensional process; rather, such an image consists of series of interrelated behaviors. In other words, information searching not directly causes the pre-trip destination image, but it actually contributes indirectly to image formation through information processing (0.123).

Despite the contradictory nature of this finding, previous findings assuming a direct relationship between information searching and a destination image, this study disclosed a pivotal role played by information processing in traveler pre-trip destination image formation

(Weber & Henson, Walmsely & Lewis as cited in Luo, 2004; Baloglu, 1999). A possible explanation for this could be that information processing crafts a greater role in the pre-trip destination image formation in the rise of an ecotraveler than for a traditional traveler. When considering the proposed influential input variables, both information source characteristics and costs of information search indirectly effect on search out comes. Out of these two input variables, information source characteristics have a stronger influence on information searching than the costs of information search.

CHAPTER 7: CONCLUSION AND DISCUSSION

The model building section of this study examined the causal relationships among information sources characteristics, costs of information search, information searching, information processing, pre-trip destination image, and travel-related search outcomes found in forest-based tourism. Although some of the model constructs (information source characteristics, costs of information search, information searching, pre-trip destination image, and travel related search outcomes) have previously been discussed in the tourism literature, none of the studies to date have empirically tested simultaneous structural relationships among constructs.

The empirical results of this study suggest a significant mediation effect of information processing on information search behavior. This finding is in agreement with the suggestions of Fodness & Murray (1999) and Beiger & Laesser (2004) that an individual's information processing techniques may mediate the effect of other variables on actual travel decisions, based on earlier study findings on tourist information search behavior.

Past studies on information search behavior were primarily focused on four fundamental aspects: 1) factors influence information search, 2) the effect of information search on search outcomes, 3) effect of information search on pre-trip destination image, and 4) effect of pre-trip destination image on search out comes. However, these study findings revealed that information processing has a strong influence on search outcomes. Therefore, information processing should be considered as an important variable in future research.

This study identified four distinct market segments, based on respondents' utilization of external information sources in relation to their travel decisions: 1) impulsive searchers, 2) active seekers, 3) passive seekers and, 4) provider dependents. When we analyze the travelers' actual decisions that are important to marketers, i.e., travelers' destination choice, estimated expenses at

the destination, and length of stay at the destination, study findings suggest that provider dependents, followed by impulsive searchers are the most productive segments for destination marketers. Service providers are the primary source of information for provider dependents, while TV/radio/magazines, and friends and family are important information sources for impulsive searchers.

7.1 Implications of the Segmentation of Ecotourists Based on Their Information Search Behavior

The segmentation part of this study implies that tourists in forest-based tourism destinations differ in terms of their personal information needs and wants. Information needs and wants of people may shift with time, based on the varying environmental, marketing, and personal characteristics. Therefore, it becomes essential to monitor shifting consumer needs and wants because shifting needs and wants.

An identified profile for each segment could help marketers to select the appropriate segment. This would allow marketers to visualize the individuals that they mean to reach. In addition results may help marketers to determine which information sources should be used to reach target market segment. When designing information sources, the tourist profile of a target market should match the audience profile of the information sources. In short, identified market segments and relevant profiles will effectively guide destination managers to determine the target market and most popular information sources of that given target market (Fodness & Murray, 1998).

7.2 Implications of the Proposed Traveler's Pre-Trip Information Search Behavior Model

For a tourism destination to be successful, a thorough understanding is required of the marketing environment as well as consumer information search behavior in that environment (Gartner, 2000).

This study contributes to such an understanding with special reference to travelers' information processing and the pre-trip destination image. A major, theoretical contribution of this study is that the proposed model enables researchers to examine the impacts of information processing and concept of a pre-trip destination image on ecotraveler's travel as these relate to actual outcome decisions. This study also enables researchers to understand the magnitude of the influence of external information sources on ecotravelers' actual outcome decisions, as well as how information processing directly and strongly influences actual travel decisions. However, studies related to information processing and factors that influence information processing are lacking in tourism literature. By realizing the importance of information processing, these study findings emphasize the need for future studies to explore the effect of information processing in ecotourists' information search behavior models.

From a managerial perspective, a better knowledge on the pre-trip information search behavior of ecotravelers have several implications for destination marketers. Knowing the processing techniques/criteria consumers use when they make travel decisions will enhance managerial guidance in the development of information materials for a particular destination. For instance, study findings suggest that consumers process the acquired information by selecting related information from different information sources, as well as verifying the accuracy of information received from various sources. Therefore, this study recommends that marketers be certain to ensure the consistency and reliability of any marketing message sent via more than one information source. Easy and reliable communication is critical in convincing a potential customer to choose one destination over another. This model suggests that individuals may have convinced a specific destination image even before visiting the destination. That pre-trip destination image would be firmly related to actual travel decisions.

This model has revealed that the use of information sources as promotional tools strongly influence the formation of a tourist's destination image through information processing. Therefore, destination marketers and managers should importantly modify information materials to efficiently respond to all strengths and weaknesses, accuracies and inaccuracies of a destination image. Essentially, tourism promoters must know precisely what kind of information should be included in the information sources, in order to encourage and facilitate decision making. The most important disclosure of study finding is that infrastructure, wilderness activities, as well as price, are almost equally important in pre-trip destination image formation. For destinations to be chosen, destination managers must maintain an increasingly better image on certain attributes-specifically wilderness activities, infrastructure, and price levels. Finally, a close examination of the indicator variables of search outcomes provide a rich insight to destination choice, length of stay, and the estimated expenses at the destination can be greatly influenced by traveler external information search behavior. In terms of costs of information search, study findings suggest that travelers are concerned about time than money. Also, according to study findings, easy access to information sources and credibility of the provided information are two most important factors that should be considered by destination marketers.

In the path analysis, a close examination of the loadings of indicator variables on information processing suggests that travelers tend to select related information among the information sources as well as verify the accuracy of information. Therefore, managers should understand that an expected comparison of alternatives plays a significant role in destination selection. Hence, promotional materials should be designed accordingly.

7.3 Study Limitations and Future Research Lines

The first important limitation is the sample frame in this study, which only focuses on three forest-based recreation sites in Sri Lanka.

If results to be generalized in to forest-based recreation sites in Sri Lanka, data should be collected to cover a greater geographical representation. For instance, a study sample would be more representative if the data is collected from multiple forest-based recreational sites in Sri Lanka. Even duplication of this study in forest-based recreation destinations in a similar setting other than Sri Lanka would serve to generalize study findings.

This study collected data from October 2009 to February 2010. Time and budget were critical limiting factors for data collection. Since data were collected from a singular season, the sample data may be biased. Future studies should consider collecting data throughout the year to obtain an accurate cross-section of visitors.

Erasmus et al., (2001) explicitly emphasized that applying a specific consumer behavior model outside the product categories that the model has been originally specified, may cause discrepancies. Therefore, considering the ecotourism as a sub-segment of tourism, continued research is proposed to improve the knowledge of ecotourist pre-trip-information search behavior. This study defined an ecotourist as a visitor who visit a forest-based recreation area. However, all visitors to forest based attractions may not represent genuine ecotourists since their motives and behaviors tend to vary greatly, and may not be compatible with ecotourism principles. Further research is needed to study on focus group of ecotourists, such as bird watchers and mountain climbers.

Although Structural Equation Modeling (SEM) shows promising advantages over other statistical methods, such as factor analysis and multiple regression, SEM only deals with causal models. SEM does not build up the causal relationship (Shumaker & Lomak, 2004). In other words, SEM model results only verify the causal relationships suggested by the conceptual model using the sample data.

In order to establish the causal relationships, the model should cross-validate with the other sets of sample. Further studies may be launched for the proposed model with a study sample from a similar setting, in order to generalize the model.

Although this study tests only two influential input variables; costs and information source characteristics in information searching. An inclusion of the effect of other input variables that influence traveler information search behavior may alter study findings. Further, empirical testing of the proposed model with input variables may enhance the power of the model by considering the causes of information search not accounted for in the tested model. Therefore, future studies can experiment with incorporating other important input variables to the suggested model. This study disclosed the vital role played by information processing in ecotourist information search behavior. Realizing the importance of information processing in search outcomes, continued research is proposed to focus on factors which may influence information processing to improve understanding of the ecotraveler information search behavior.

Tourist behavior may vary with their nationality (Pizam and Jeong, 1999). In 2003, Gursoy and Umbreit found that the nationality of tourist may affect their pre-trip external search behavior. Therefore, future studies should include the effect of culture on pre-trip information search behavior models. Focus group studies can be conducted on tourists from different countries to understand their pre-trip information search behavior and their most favored information sources. Sampling method developed in this study did not capture enough respondents to represent different countries, hence the effect of nationality and culture on pre-trip information search could not be assessed.

According to the study findings, provider dependants are the most profitable segment in terms of marketing for forest based destinations in Sri Lanka.

Provider dependants are characterized by married males with higher education. There may be a greater chance that married older males may travel with their spouses. In today's dynamic environment, females are becoming decision makers in many households. Therefore, future studies should focus on detailed analysis of provider dependants in order to better understand which member of the household actually made or influence the final travel decision.

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APPENDIX

Dear respondents,

We are conducting a research to understand the eco-travelers' information search behavior. The study will help ecotourism operators to better understand the characteristics of ecotourists like you, enabling ecotourism operators to reach and serve you better in the future. This study is conducted in collaboration with the Louisiana State University, Baton Rouge, LA, USA.

We greatly appreciate your participation in this survey in order to make it a success. The questionnaire should take approximately 10 minutes or less to complete. Since only a selected group of ecotourists are interviewed, your response is extremely important for the success of this study. Your response will be kept confidential and will be only used for statistical analysis as part of this research project. If you have any questions/ regarding this survey, feel free to contact us by e-mail or phone.

Thank you for taking part in the survey.

Sincerely,



Rangika Perera
PhD Graduate Research Assistant
School of Renewable Natural Resources
Louisiana State University
Baton Rouge, LA 70803
Office: 225-578-4133 (in USA)
Fax: 225-578-4251
Mobile: 073377028 (in Sri Lanka)
E-mail: rperer3@tigers.lsu.edu



Sampath Wahala
B.Sc. , M.Sc , M.I.Biol
Lecturer
Department of Tourism Management
Faculty of Management Studies
Sabaragamuwa University of Sri Lanka
Mobile: 0715556191
Office: 0452280296
Email: sampathwahala@yahoo.co.uk



Understanding of ecotourism concepts

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

	Strongly disagree		Neutral		Strongly agree
Ecotourism promotes sustainability.	1	2	3	4	5
Ecotourism minimizes the impacts of tourism activities on the natural environment.	1	2	3	4	5
Ecotourism provides financial benefits and empowerment for local people.	1	2	3	4	5
Ecotourism builds environmental and cultural awareness and respect.	1	2	3	4	5
Ecotourism provides direct economic incentives for conservation.	1	2	3	4	5

Do you search for information about travel destinations prior to make a travel decision? YES NO

If YES, please tell us about your pre-trip information search experiences by answering following questions.

SECTION 1: Information sources characteristics

Please circle the most appropriate response for you for the following statements.

	Strongly disagree		Neutral		Strongly agree
Easy access for information encourages me to make use of them	1	2	3	4	5
I am likely to collect information only from credible sources	1	2	3	4	5
I always prefer to use simple information than something complicated	1	2	3	4	5

SECTION 2: Costs of travel information search

Please indicate your level of agreement by circling ONE appropriate response category.

	Strongly disagree		Neutral		Strongly agree
The amount of time it requires, does not affect my ability to search information before travel	1	2	3	4	5
My income level does not affect my ability to search information before travel	1	2	3	4	5

SECTION 3: Information sources you use

Please circle the most appropriate response for you for the following statements. Please check “not applicable” if the statement does not apply to you.

I gathered information for this particular trip:

	Strongly disagree		Neutral		Strongly agree	NA
From friends and family	1	2	3	4	5	6
From travel consultants (e.g., travel agents)	1	2	3	4	5	6
From tourism service providers (e.g., Hotel, Airline, Tour operators, etc.)	1	2	3	4	5	6
From destination specific sources (e.g., Convention and Visitors Bureau and/or Chamber of Commerce)	1	2	3	4	5	6
From TV, radio, newspaper, and/or magazine advertisements	1	2	3	4	5	6
From the Internet	1	2	3	4	5	6
From local travel offices near the travel destination	1	2	3	4	5	6
From national government tourist offices	1	2	3	4	5	6

Normally, when I make my travel decisions about forest-based tourism destinations:

	Strongly disagree		Neutral		Strongly agree	NA
I am likely to rely on third party independent organizations (TV, newspapers, magazine articles)	1	2	3	4	5	6
I am likely to rely on e-net	1	2	3	4	5	6
I am likely to rely on interpersonal external information sources (i.e. friends and family or travel consultants)	1	2	3	4	5	6
I am likely to rely on market controlled (advertising, product/service information package, product brochures)	1	2	3	4	5	6
I am likely to rely on reseller information sources (i.e. catalogs by sellers, information charts, travel offices, government offices)	1	2	3	4	5	6

I am likely to rely on direct inspection (observation, inference)	1	2	3	4	5	6
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SECTION 6: Information processing techniques you use

Please circle ONE response which best indicates how you feel about following statements.

When I make travel decisions:

	Strongly disagree		Neutral		Strongly agree
When I make my travel decisions, I am likely to select related information among the information sources	1	2	3	4	5
When I make my travel decisions, I am likely to verify the accuracy of information	1	2	3	4	5
When I make my travel decisions, I am likely to differentiate the sources of information	1	2	3	4	5
When I make my travel decisions, I am likely to categorize information I received	1	2	3	4	5
I am likely to simplify all the information I get from information sources such as travel agents, guidebooks, etc. (e.g., instead of remembering all the details, I simply say the destination is a good/bad and/or expensive / inexpensive)	1	2	3	4	5

SECTION 7: Pre-trip destination image

Please indicate your level of agreement by circling ONE appropriate response category. Please circle “not applicable” if the statement does not apply to you.

	Strongly disagree		Neutral		Strongly agree	NA
Before I travel, I am aware of the wilderness activities around the destination	1	2	3	4	5	6
Before I travel, I am aware of the price levels of the destination	1	2	3	4	5	6
Before I travel, I am aware of the local infrastructure at the destination area	1	2	3	4	5	6
Before I travel, I am aware of the natural attractions at the destination	1	2	3	4	5	6
Before I travel, I am aware of the climate at the destination	1	2	3	4	5	6

SECTION 8: Your travel decisions

Please indicate your level of agreement by circling ONE appropriate response category. Please circle “not applicable” if the statement does not apply to you.

	Strongly disagree		Neutra l		Strongly agree	NA
Before I travel, I decide the number of attractions to visit	1	2	3	4	5	6
Before I travel, I estimate the expenses at the destination						
When I travel, I decide the destinations to visit	1	2	3	4	5	6
Before I travel, I decide how many nights to stay at the destination	1	2	3	4	5	6

******Responses need not to be exact figures for sections 7 & 8. Estimates or approximations are adequate. All responses are strictly confidential******

SECTION 9: Trip information

How many nights would you expect to spend around this destination?

- 1) 1 day, no over night
- 2) 1 day, 1 over night
- 3) 2 days, 1 over night
- 4) 2 days, 2 over nights
- 5) More than 2 over nights

How many forest based tourism destinations in Sri Lanka you wish to travel or you have travelled during this trip other than this destination?

- 1) none
- 2) 1 more
- 3) 2 more
- 4) 3 more
- 5) More than three destinations

Please name your primary destination in this trip? _____

Would you like to visit the above mentioned primary destination again? YES NO

What is the primary purpose of this trip? (Please check all that apply)

- 6) Vacation
- 7) Business related
- 8) Visiting friend/relative
- 9) Convention
- 10) Passing through
- 11) Combined business/pleasure
- 12) To be in a natural setting
- 13) To conduct a survey or research
- 14) To educate children
- 15) To observe the ecological landscape
- 16) To have an adventurous experience
- 17) To pursue the fashion/following the trend

What is your travel party composition?

- 1) My self
- 2) Me and a significant other
- 3) Me and my family (including children)
- 4) Me and my friends
- 5) Me and others

Excluding travel expenses from your home to Sri Lanka and your return home, how much do you estimate each spent daily on average?

- 1) Equal or Less than Rs. 2000 (≤ 20 \$ US)
- 2) >Rs. 2000-4000 ($>20-40$ \$ US)
- 3) >Rs. 4000-6000 ($>40-60$ \$ US)
- 4) >Rs. 6000-8000 ($>60-80$ \$ US)
- 5) >Rs. 8000 (>80 \$ US)

SECTION 8: About you

Your age: _____ Years

Gender: 1. Male 2. Female

Marital status:

- 1. Married 3. Separate
- 2. Unmarried 4. Widow/widower

Annual income in 2008 (please indicate the currency): _____

Your country of residence: _____

Your highest level of education:

- | | |
|-------------------------|----------------------------|
| 1. High School or Below | 3. Some graduate education |
| 2. Diploma | 5. Graduate degree |
| 3. Bachelor's degree | |

What is your employment category?

(For example, teacher, homemaker, medical doctor, etc.): _____

Thank you for taking time to complete this questionnaire.

VITA

Rangika Thilaksri Perera was born in Rathnapura, Sri Lanka. After successfully completing the General Certificate of Education Advanced Level examination (GCE A/L), she was selected to follow the program: Forestry and Environmental Science Degree at the University of Sri Jayewardenepura, Sri Lanka. For her undergraduate thesis, Rangika constructed a growth model to predict the individual stem volume of *Alstonia macrophylla* Wall. Ex G. She received her Bachelor of Science in Forestry and Environmental Science (special) degree on May 2005 with First Class honors. In 2006 fall she enrolled at Louisiana State University (LSU) to pursue a master's degree in forestry, focused on forest products marketing under Dr. Richard P. Vlosky. The title of her Master's thesis is "An Overview of the Wood Product Import Sector in the United States with an Emphasis on Opportunities for Sri Lankan Exporters." Her master of Science (forestry) degree has a strong specialization on forest products marketing and experimental statistics. She received her master's degree on May 2008. After completing her masters, she got an opportunity to continue her higher studies and she enrolled in to the doctoral program under the same supervisor in summer 2008. Her dissertation research has a strong specialization on service marketing and structural equation modeling.