DETERMINANTS OF ONLINE LEISURE TRAVEL PLANNING

DECISION PROCESSES: A SEGMENTED APPROACH

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"Just as a father has compassion on his children, so the Lord has compassion on those who revere Him. For He Himself knows our frame; He is mindful that we are but dust."
Psalm 103: 13-14.

ABSTRACT

There is an abundance of information sources on the Internet that consumers use to plan and book their travel. This information reflects the fact that travel comprises a significant part of the business conducted through the web. Consumers are sometimes faced with a complex task of making purchasing decisions in the dynamic and fast-paced medium of the Internet. In spite of the importance of travel and the intricacies of the decision process, an integrated framework that identifies the various determinants of the online leisure travel planning decision process and how they interact, is largely absent in travel literature. This study aims to make a contribution by extracting from relevant literature useful elements that could comprise such a framework. It also uses several phases of qualitative research to refine the framework, and then a quantitative assessment of data collected from an online questionnaire completed by 1,198 respondents to test specific components of the framework that deal with online travel booking intention.

In the final model building stage, three logistic regression models were compared. The first is a parsimonious one containing key determinants that lead to online travel booking intention. These determinants emerged from theoretical frameworks of the theory of reasoned action and innovation adoption theory. The second Model used strictly involvement, motivation, and knowledge variables that are thought to influence online booking intention. The third Model included a combination of relevant predictor variables from the other two Models.

The relationship between various demographics and online travel booking intention was investigated yielding some interesting insights. Consequently, this study recommends these demographic variables be considered in segmenting travelers to find those more likely to book online.

The determinants of online leisure travel booking decision processes could be used in conjunction with demographic variables to more accurately predict leisure travel website usage.

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1 INTRODUCTION

The Internet and the tourism industry are the contexts within which this research is based. A virtual company such as a travel website operates by providing access to its travel products and services through the Internet, and both travel websites and travel agents function within the tourism industry. Thus, the subsequent topics address the impetus of the research, which aims to discuss the online and offline aids used in leisure travel planning decision processes. Offline aids refer specifically to the assistance provided by travel agents.

1.1   OVERVIEW OF THE TOURISM INDUSTRY

The two main industries that comprise the activities referred to as tourism are the hospitality and travel industries. These industries are very interdependent. Hospitality typically includes hotels and restaurants but also any institution that offers shelter, food or both to people who are away from their homes. Travel and tourism represent approximately 11% of the worldwide GDP, according to the World Travel & Tourism Council. The Council stated that hospitality and tourism together comprise the world's largest industry that will generate $9.3 trillion in economic activity by 2011.

Werthner and Ricci (2004) provided a good synopsis of the various travel suppliers and how they are connected to each other in a symbiotic relationship. This outline can be seen in Figure 1 below. It distinguishes between the supply and demand sides and the respective intermediaries. The nodes indicate the relevant types of organizations in the marketplace, and links mark the most pertinent relationships as well as the information flow.

Werthner and Ricci state, "We designate suppliers like hotels or restaurants, mostly SMEs, as "primary." With respect to a functional differentiation, these companies are on the same level as the big players like airlines. Tour operators can be seen as product aggregators, and travel agents act as information brokers, providing the final consumer with the relevant information and booking facilities. CRS/GDS (central reservation systems/global distribution systems), stemming from the airline reservation systems developed in the 1960s, also include products such as packaged holidays, or other means of transport. Whereas the intermediaries on the right side can be seen as the professional connection between supply and demand (mainly based on the electronic infrastructure and functionality of CRS/GDS), the left side is relevant for the management, planning, and branding of a destination. These national, regional, and local tourism organizations are normally publicly funded, act on behalf of all suppliers within a destination, and are not engaged in the booking process. The upstream flow of Figure 1 consists of product information, whereas the downstream flow reports on market behavior, mostly represented in terms of statistical aggregates. Both information flows create a tourist information network linking all market participants and reflecting the economic relationships between them" (p.103).
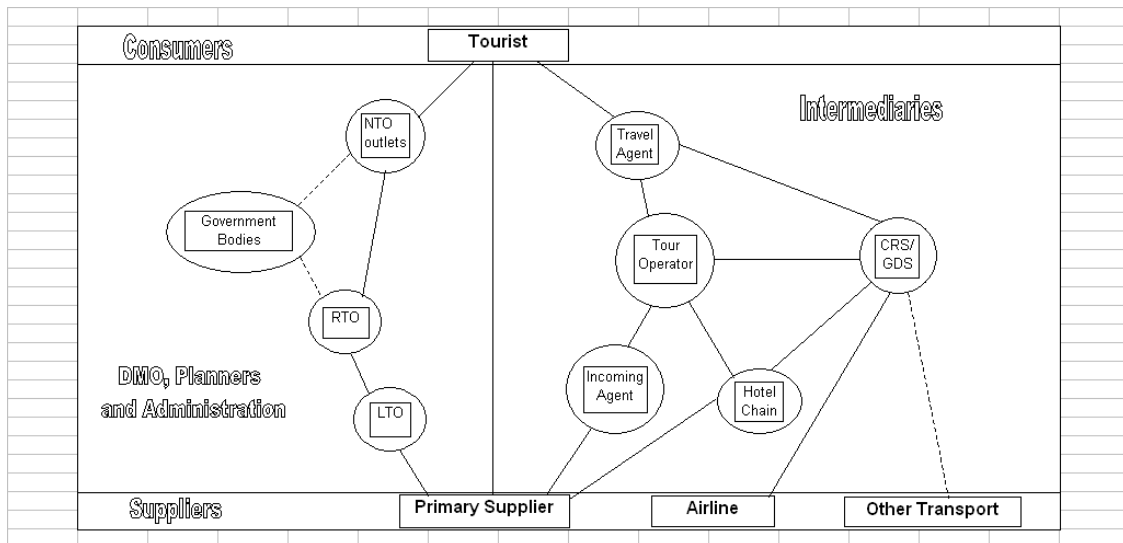
Figure 1. Structural View of the Market, Werthner and Ricci

<u>1.1.1 Transformation in the Industry</u>

The entrance of corporate giants into the hospitality market in the eighties and nineties transformed it from a mom-and-pop industry into an industry dominated by chains. The hotel sector followed a similar trend where according to a report in Lodging Hospitality, the six largest hotel chains have more than 1.5 million rooms and the next 14 chains hold around half that many rooms.

The first airlines began to appear after WWI. In 1978 the United States Congress instigated a framework for deregulating the airline industry. As a result, many new small airlines that operated with lower costs entered the marketplace and offered low airfares. These new carriers made consumers price conscious of travel products and even though few of those air carriers survived in a deregulated environment, they spurred established airlines to develop schemes for retaining customers. One of those innovations that persist today is the frequent flyer program initiated by American Airlines.   AA has pioneered numerous technological and marketing innovations. Another such innovation was the introduction of the SABRE computer reservations system followed by the development of sophisticated customer databases. Today a few airlines dominate the industry including American, and Continental in the US, JAL in Asia, British Airways and Air France in Europe. The industry implemented a variety of code-sharing agreements (enabling carriers to book each other's seats). Furthermore, scheduling and marketing pacts among top airlines allow for global competition and give firms the flexibility they need to cope with economic downturns.

Tranter, Stuart-Hill & Parker (2009) document further changes in the industry. As airline traffic grew the airlines enabled travel agents to book directly into the computer reservations system. Since travel agents took reservations rather than the airlines internal

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reservations agents, the airlines benefited from savings in labor costs. Initially computer programs used cryptic codes only understood by agents and this ensured that consumers were dependent on an agent. As the computer reservations systems became more sophisticated, travel agents were able to view more airline inventories, prices and availability on numerous flights of various air carriers at the same time. Car rental reservations were added to the reservations systems and travel packages of air and car rentals emerged. With further advances in technology, hotels companies (Hilton, Marriott, Sheraton, Holiday Inn) created central reservation offices (CROs) to take reservations for all properties within their organizations. Eventually, the hotel CROs merged with the reservations systems of the airlines and car rental agencies so that a travel agent could book any of these products through one computerized reservation system or CRS. The term CRS became the GDS, global distribution system as technology advanced to enable the sale of products and services globally.

The travel website Travelocity was spun off from SABRE to serve the consumer market. Such online travel websites are referred to as third-party websites and act as intermediaries between the consumer and the hospitality provider or supplier. The electronic infrastructure that facilitates purchases of travel products by consumers is referred to as the Internet Distribution System or IDS. The IDS is comprised of multiple components, such as merchant model websites, eg. Orbitz, proprietary sites, eg. Hilton hotel, retail operator sites, eg. XYZBrick&Mortal Travel, opaque sites, eg. Hotwire, auction sites, eg. Priceline, referral services or meta engine sites, eg. Kayak, Mobissimo, special interest or niche site, eg. LasVegasTickets, and general web portals, eg. Yahoo, Google.

<u>1.1.2   The Role of Travel Agents</u>

Davidoff and Davidoff (1994) trace the early history of the travel agency. It begins in the 1840s when Thomas Cook began the travel agency industry in England by organizing the first tour. Even though the human need for travel has existed throughout history, before the 1840s most travel was for necessity rather than pleasure since it was an arduous and precarious activity. Cook negotiated with the railroads to pay him a commission on tickets he sold for a one-day excursion. He planned excursions to seaside resorts and spas along the Irish Sea and English Channel. Eventually destinations included Scotland and Switzerland. In 1855 he accompanied a group to Paris, which ignited an invasion of British tourists to Europe. His early tours introduced travel to the middle class. Long-distance travel was previously affordable only to the rich before railroads were built. The reach of Cook's tours expanded to the Holy Land and India as the British Empire grew. His innovations include the traveler's check, and roundtrip tickets. Cook is credited with founding the concept of organized tourism.

One way in which modern hospitality providers can reach a geographically diverse marketplace is through travel agents. Schluz (1994) reported in the early nineties that travel agents booked more than 95% of cruises, 90% of airline tickets, 50% of car rentals and 25% of hotel rooms. Travel agents would earn commissions from these tourism suppliers. Agents have switched from the use of toll free numbers when contacting

hotels for bookings to CRSs that are now called GDSs. Tour wholesalers assemble travel packages that are usually targeted at the leisure market. These typically include transportation and accommodations, but can also include meals, ground transportation, and entertainment. In developing a package, a tour operator contracts with airlines and hotels for specified numbers of seats and rooms, receiving a quantity discount. Retail travel agents sell these packages on a commission basis also. Tour operators are powerful members of the distribution channel especially in certain markets such as the Caribbean.

Travel agents could not know every resort and destination so they rely on brochures or catalogs provided by tour operators. Global distribution systems act as a product catalog for travel agents and other distributors of hospitality products. These reservation systems were originally developed by the airlines to promote sales. Several mergers and alliances have formed resulting in major systems such as Amadeus, Apollo/Galileo, SABRE, and Worldspan. Ninety-six percent of travel agents in North America are connected to at least one computer reservation system. Hotel companies, rental car agencies, and other tourist product suppliers can gain listings in these reservation systems.

Research conducted by Law, Leung and Wong (2004) revealed that respondents regard travel agencies as being better than travel websites in terms of providing the human touch and personal services. However, respondents realized that travel agencies are business-oriented and so perhaps value business clients more than non-business travelers.

1.1.3   Disintermediation and the Internet

The modern tourism and travel industry is characterized by a phenomenon called disintermediation, which refers to travel suppliers bypassing retail travel agencies to deal directly with consumers through the Internet.

Online transactions in the travel and tourism industry are continuously increasing. This industry is the leading application in the B2C (business-to-consumer) arena. According to the Travel Industry Association of America (www.tia.org), more than 64 million Americans searched the Internet in 2003 for information about destinations or to check prices and schedules. Also, forty two million Americans booked travel via the Internet in that year. Similar trends of growth are evident in Europe according to the Danish Center for Regional and Tourism Research (www.crt.dk).

An example of tourism products available to consumers online can be seen on the website ICruise.com which is a searchable database that allows a consumer to customize the perfect cruise. It can be seen in Appendix A. An easy-to-use search engine allows one to search through available cruises based on destination, time of year and budget. There are as many as 85 different parameters for searching the world's most expansive database of cruises. Detailed descriptions, statistics, deck plans, cabin diagrams, and photos of 98% of the world's cruise liners are available online. Within a few minutes a consumer can search the equivalent information of over 120 brochures from more than 25 different

cruise lines. Consumers can access all of the information available to travel agents with a few clicks of a mouse.

1.2   PURPOSE OF THIS RESEARCH

The focus of this research is the assessment of the determinants of decision processes consumers undertake when planning and booking their leisure travel online. However, it is recognized that consumers can use online or offline aids in the travel planning process. An online decision aid (ODA) is sometimes nested within a travel website so that a consumer is unaware they are using a sophisticated tool. Consumers also consult a travel agent, that is, an offline aid to assist them in travel planning.

This research aspires to provide some insights on how advancements in online travel planning tools compare with the services offered by traditional travel agents and which segments of the leisure travel market would be attracted to use online tools as opposed to offline aids. The study will provide tourism marketers with some understanding of leisure travelers and their motivations and behavior in the travel planning process, thereby helping marketers design suitable travel websites, online tools, travel agency services and marketing strategies. The knowledge deficit with online tools used in travel includes a comprehensive framework that explains the determinants of online leisure travel booking intention. Also a model that explains underlying motivations for using online aids, how these differ among travel market segments, the interplay of beliefs, attitudes, prior experience with travel agents and websites, social support, knowledge and involvement and how these determinants contribute to online booking.

Insights from focus groups, personal interviews, case studies, and a survey instrument that follow, provide a fuller picture of consumers as they plan and purchase leisure travel products in the new medium and, in some cases, with the assistance of travel agents. A Conceptual Framework is formulated using current literature and qualitative research conducted. Due to time limitations, it is beyond the scope of this study to evaluate all aspects of the Framework. Consequently, key hypotheses from the Conceptual Framework are tested through data collected with a survey instrument. These hypotheses and components point to online travel booking intention, which is the primary interest of the sponsor of the research, a travel website named DiscoverTheIslands.com. Quantitative data analysis helps confirm aspects of the Conceptual Framework and refines the understanding of the ultimate determinants of online leisure travel booking intention.

This research project began in 2003 and the initial question was whether intelligent agents used in travel planning compare with a travel agent that is highly knowledgeable about both the product alternatives available and the consumer's tastes. Since 2003, technologies have advanced, and the Internet has spawned numerous new travel business models including travel search engines, online travel agencies, and travel websites with varying levels of sophistication and intelligent infrastructure. What was once an advanced intelligent online tool existing initially in artificial intelligent laboratories such as SmartClient (Pu and Faltings, 2000), Heracles (Ambite, et al., 2002), Hamlet (Etzioni,

Knoblock, Tuchinda &Yates, 2003), Theseus (Barish, DiPasquo, Knoblock & Minton, 2000), INTRIGUE (Ardissono, 2003), and other ODAs, is now becoming more commonly used by consumers. Intelligent tools can be found embedded in travel websites such as Farecast's airfare predictive analytics tool, which is now incorporated into Expedia's website infrastructure. Consumers have become more comfortable with Internet technologies, and these technologies have advanced so that they offer travelers more options and assistance in a user-friendly, intuitive and interactive way.

2 LITERATURE REVIEW

In order to guide the reader through this literature a series of box and arrow diagrams are used. The first one appears at the beginning of the literature and others emerge after each major section. Figure 2 gives an overall perspective of the sections to be discussed.
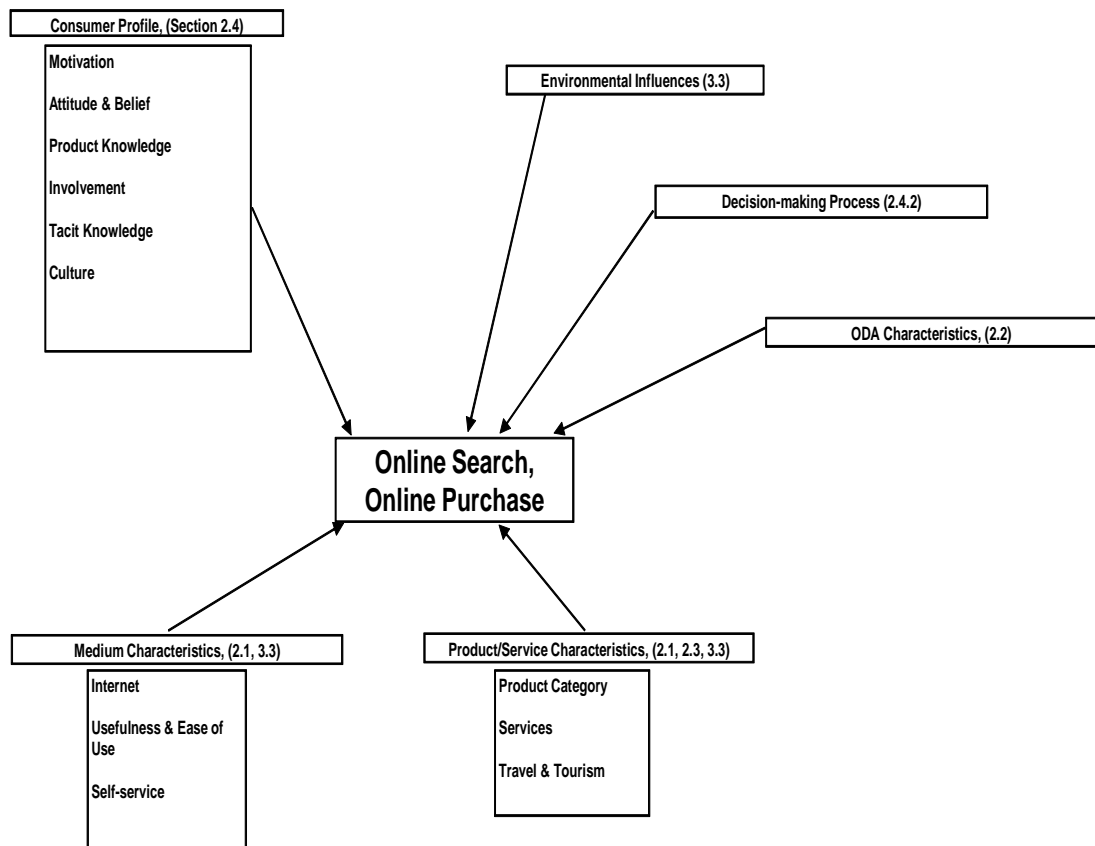
Figure 2. Overview of Literature Discussed

2.1   CONTEXTUALIZING ISSUES

The convergence of communication technologies has been studied for more than 30 years (Ostry, 1994). Such technologies have experienced remarkable change in the past decade with the onset of the Internet. Since the field of marketing uses communication processes, the Internet inexorably influences it. Glazer (1991) presented a framework showing how the changing information environment affects marketing including the breakdown in distinction between the firm and consumer, which requires two-way transaction-based information systems.

John Chambers, Chairman and CEO of Cisco, argued that Internet commerce represents the beginning of a second Industrial Revolution. The Internet is a catalyst for a paradigm shift. It is a radically different technology that will have a radical effect on the economy, social structure and culture (Strangelove, 1994). When a new form of communication emerges, it creates a new cultural paradigm. Yerxa (1994) discussed how communication technology and culture converge to create the "information revolution."

2.1.1   Hypermedia Computer-Mediated Environment

In computer-mediated environments (CMEs) transactions can occur more quickly and across greater distances than in traditional retail environments. Digital goods can be discovered, tested, evaluated, purchased, and delivered in just a few minutes (West et al.,1999). A CME can change rapidly and inexpensively in contrast to physical stores. Normal retail environments cannot arrange their shelves for each customer in the way that a CME allows in electronic markets (West et al.,1999). A marketer operating in a CME can monitor not only what a consumer purchases but also the information that is examined by the consumer, which prompted the purchase (West et al.,1999).

In addition, there are various techniques that could be used to engage consumers in CMEs. One such technique is to facilitate role-taking to enhance the consumer's online shopping experience. When consumers enjoy the online experience they will become more involved with the experience and will develop favorable attitudes toward the online company. The role-taking serves as a vicarious form of product trial (Edwards, 2003).

The Web makes possible new business methods and processes that were not practical or even feasible before. A relevant one to this research is ways of sorting products and services interactively by price or size, which far surpass the display limitations of physical storefronts. Another example is comparison-shopping agents that mediate the interactions between consumers and suppliers in order to yield markets that are more efficient. Such agents are the catalysts for commerce on the Web today (Yuan, 2003). A retailer can engage software technology to automatically search its competitor's online store to document the prices charged for various products (Trifts & Haubl, 2003). Bakos found that when the cost of searching is reduced, consumers should be empowered and able to search for better products at lower prices (Bakos, 1997).

Hoffman and Novak (1996) examined marketing in hypermedia computer-mediated environments (CMEs) and found these new environments would require the development and application of new marketing concepts and models. They report, "hypermedia CMEs possess unique characteristics including machine interactivity, telepresence, hypermedia, and network navigation, which differentiate them from traditional media." The behavior of consumers in hypermedia suggests there is a new paradigm for electronic commerce. Firms communicate with their customers through various media. By tradition, these media follow a passive one-to-many communication model, where a firm through its marketing efforts permits only limited forms of feedback from the customer and potential customers. This traditional view of advertising and communication media is being changed considerably through the revolutionary new CME environment. The Internet, which hosts this CME environment, has the potential to fundamentally change the way firms do business with their customers.

2.1.2   Electronic Commerce

Electronic commerce essentially means shopping on the part of the Internet called the World Wide Web. Li (2007) writes, "E-Commerce is commonly defined as electronic transactions conducted by business partners, which can be both organizations and individuals" (p.9). This makes it a subset of E-business. Li also reports some statistics that correspond to the rapid growth rate of E-Commerce. Starting from virtually zero in 1995, Internet users grew to 300 million by March 2000, and to over a billion before the end of 2007. E-Commerce has opened new opportunities for buyers and sellers alike.

Consumers can do things in an on-line environment that are simply not possible in face-to-face transactions. For instance, a major distribution channel function of product customization is made possible through E-Commerce. In this distribution channel a consumer can act as his or her own travel agent and build a personalized travel package. Mass customization and flexible configuration has enabled the development of personalized tourism products. Customization describes the process of individualizing products or services based on IT-enabled mass customization. Configuration refers to the bundling of different product or service components to integrated offerings. Companies combine their core products with layers of additional services (Werthner & Ricci, 2004).

The dynamic nature of electronic shopping interfaces enables online retailers to provide uncensored competitor price information. Such comparative information about their competitors can be made available in an interactive, direct, and highly personalized manner. These cross-vendor comparisons can be done with the aid of a third party intermediary such as a shopbot (shopping robot). The shopbot searches the marketplace to find products for a consumer that best suit their preferences. Shopbots for vendor comparisons of books and prescription drugs can be seen at http://www.allbookstores.com, and http://corp.destinationrx.com/.

Technology is being employed to manage information on the Web in other ways as well. Information extraction agents via wrappers are posing new concerns about who owns information. A wrapper is a program that understands the structure of a particular website and uses that knowledge to accept queries to that site and produce answers to

those queries in a structured format such as XML. Mobile agents or third-party predatory search agents of "aggregators" such as biddersEdge.com (currently out of business) created some concern for Ebay when these intelligent agents would enter Ebay's auction site, search for items that biddersEdge issuers were looking for and then notify the issuer about pricing and deadlines. Ebay attempted to prevent third-party sites from collecting and sharing information found on Ebay by claiming the intelligent agents were slowing down their website as well as potentially reporting inaccurate information (Wagner & Turban, 2002).

In addition, the new marketing landscape has spawned interactive word-of-mouth networks, online ratings of products and services, and online intelligent tools that assist consumers such as Stylehive.com, Crowdstorm.com, Wize.com, Smarter.com, Frucall.com.

All of these characteristics and features of E-Commerce can have a profound impact on any business. Given that the Web is becoming indispensable to consumers and businesses alike, marketers who understand and harness the unique attributes of commerce in the new media will establish a competitive advantage that could help them succeed in the increasingly crowded marketplace. Even though the essential elements of commerce have remained the same, such as the use of currency or bartering, the exchange and communication process, and transactional activities, the business landscape has changed dramatically.

<u>2.1.3   Travel and Tourism Industry</u>

In the travel industry there is a trend toward further specialization and an unending deconstruction of the value chain. Tourists play a more active role in searching for and selecting their travel services. Tour operators blur the boundaries between the individual and packaged tour through mass-customization and flexible configurations. Because travel agents are experiencing reduced power in the sales channel, they are placing more emphasis on consulting and selling more complex products. Internet travel sites are providing new market functionality and technology, focusing on personalized intelligent tools for travelers (Werthner & Ricci, 2004).

An annual survey and opinions on travel trends predicted more direct passenger bookings through the Internet, more electronic ticketing and electronic transactions, a different role for the travel agents, as a consultant of a more informed customer, and alliances among airlines and hotel chains for better negotiations (Henderson, 1997).

The Internet is beginning to change the way holiday and business travel is booked and paid for. The biggest beneficiaries so far appear to be hoteliers, who get free promotion of their properties on travel websites. The biggest losers are travel agents, who are being squeezed out of booking commissions. Ticketless travel has already cut into the business of travel agents ("The Internet as Travel Agent", 1996).

Guillebaud and Bond (1997) discovered that airlines are looking to four panaceas to ensure their survival in a competitive environment. They are removing intermediaries, managing the customer, advancing the product and creating the "virtual" airline. "Removing intermediaries" refers to travel agents and includes direct and electronic distribution, restructuring and consolidation of travel agency commissions and electronic ticketing.

<u>2.1.4   Tourism and the New Medium</u>

In the Internet medium, database marketing has emerged as a tremendously valuable marketing tool (Nash, 1993). Leading companies of the marketing information revolution will be those that use technology to make the firm a truly customer-driven organization (Blattberg, Glazer & Little, 1994). Artificial intelligence (AI) and case-based reasoning are systems that can be incorporated to assist in this process. INTRIGUE (INteractive TouRist Information GUidE) is an example of the use of AI in the travel sector developed by Ardissono (2003). INTRIGUE is a tourist-information system providing personalized information about tourist attractions in a restricted geographical area. The system integrates a number of AI techniques to find recommendations of items tailored to individuals and user groups, along with explanations of the recommendations, and support for advanced problem-solving techniques such as tour scheduling. INTRIGUE dynamically generates a multilingual tourist catalog and recommends sightseeing destinations and itineraries by taking into account the preferences of heterogeneous tourist groups. The system also offers an interactive agenda that helps the user to schedule a tour complying with their visiting preferences and with other constraints, such as the opening times of attractions.

Extensible markup language (XML) is becoming the standard for self-describing data exchange in the Internet applications. By making the Web accessible to agents such as online decision aids, and other automated processes, XML will fundamentally transform the nature of e-commerce (Glushko, Tenenbaum, Meltzer, 1999).

Hence, reaping rewards on the Internet can be accomplished in part through the creative transformation of data into products and services that are valuable to consumers, and finding ways to exchange data with strategic partners.

Tourism marketing in CMEs means adapting to the unique characteristics of this medium such as machine interactivity. Despite the unique properties of a computer-mediated environment, it cannot offer the opportunity for directly experiencing a product. This, however, does not put tourism products purchased through a CME at a disadvantage due to the peculiar nature of the tourism product. The tourism product itself is a rather complex bundle of basic products. Tour operators are aggregators of these basic products, and travel agents act as information brokers, providing the final consumer with the relevant information and booking facilities. Also, CRS/GDS include products such as packaged holidays, or other means of transport.

Furthermore, tourism is an information-based business and when a consumer makes a decision to purchase a travel package they have only an abstract idea of the product they are purchasing. This idea is based on the information a consumer has acquired through multiple channels, such as television, brochures, word-of-mouth, a travel agent or the Web. Due to the complexity and intangibility of the travel product, tourism recommendations pose peculiar requirements. Recommendations must refer to a variety of products, such as locations, attractions, accommodations, and flights, in order to provide a meaningful picture of the proposed travel (Werthner & Ricci, 2004). Information flows among intermediaries, suppliers and consumers to create a tourist information network. The Web is forging new ways to satisfy consumer needs, as it allows for an "informatization" of the entire tourism value chain resulting in numerous value-generating strategies (Sweet, 2001).

2.1.5   Business and Leisure Travel

The terms tourism and travel are often used interchangeably. The more important point to differentiate is between business and leisure travel. Through the 1950s, airline marketing was product-centered. Little was done to recognize the fact that different people travel for different reasons until the 1960s. By then airline marketers began looking at the reasons why people traveled. As reported by Davidoff and Davidoff (1994), the airlines realized that business travelers had certain needs such as flexibility, speed, and last-minute planning capability, whereas vacationers had other needs. These needs are low cost but reliability, and more time for advance planning. Business and leisure travelers are really purchasing different products (Davidoff and Davidoff, 1994). The motivations for business travel are different and even though the decision processes are similar there are some key differences as well. Business and leisure travelers, and those who visited friends purchased more online than those who traveled to visit relatives (Law, Leung & Wong, 2004). Business travelers are concentrated in an age group between 25 and 44 years old whereas the age of leisure or vacation travelers is spread out more evenly (Davidoff and Davidoff, 1994). Business travelers have significantly more income (Law et al., 2004).

2.1.6   Internet Travel

The Internet is well accepted as a medium for electronic commerce and has emerged as a distribution channel used by almost all on-line service providers. Customers can now be reached at home, at work, and play, when shopping, or in a travel agency with kiosk type products. The airlines have found a new method for making their product directly available to customers through the use of new information and communication technology. Progressive airlines have developed their own systems either as a front end to the GDS or as independent channels to reach their customers. Airlines are shifting their focus toward the direct channel, using their own proprietary technology to extend an offering that is tailored to their target customers. Travel agents who hope to survive in the industry will link themselves closer to selected airlines, using their proprietary systems, and they would pursue strategies such as vertical integration with tour operators.

An example of such a vertical integration is evidenced in the research conducted by Hudson et al. (2001). In the UK study, mystery shoppers were used to understand the influence of travel agency recommendations. Researchers established from the reports of mystery shoppers that travel agents have a considerable amount of influence on consumer decision-making by virtue of their vertical integration with large tour operators. Agents attempted to push the holidays of their parent company rather than give impartial advice to consumers. Agents tried to switch-sell consumers even when the consumer had a particular holiday or destination in mind suggesting alternatives including one offered by their parent company. When the customer had a budget in mind, the agent recommended packages of the parent company that fit that budget. And, when the consumer desired a last minute holiday, the agent recommended last minute products of the parent company.

Alliances in the industry started to form in the nineties. In 1996, for example, American Airlines introduced Travelocity, an Internet and online service with a simplified version of EasySABRE ("American Flying Higher," 1996). EasySABRE, SABRE's first online booking service and Travelocity, an online travel agency, totaled $95 million in Internet sales.

Internet travel is clearly evolving. It is becoming more mature as evidenced by the growing number of online travel agencies, meta engine sites, merchant model sites, proprietary sites, etc. Moreover, these online businesses have introduced more features and functionality, and airlines and hotel websites have improved their capabilities as well. Travelocity and Expedia were founded in 1996, Priceline debuted in 1998, and Orbitz launched in 2001. Now comparison-shopping websites for travel have emerged such as Kayak, Mobissimo and Sidestep that help consumers easily shop for travel products as search engines specialized in travel products. Recently, Kayak and Sidestep have merged to give consumers a larger portfolio of products and services and faster search ability.

<div align="center">2.1.7   Travel Agents</div>

Law, Leung and Wong (2004) reported that short-haul travelers believed online travel agencies are more flexible and can offer more choices than travel agents. Information acquisition and transactions were the fundamental purposes for using the online channel. Short-haul travelers also showed more positive views toward the Internet's ability to allow customers to conveniently search and purchase, as well as the ability of travel agents to reduce the insecurity of travel. However, long haul travelers in Hong Kong were more willing to purchase online from travel websites than short-haul travelers. Law, Leung and Wong declared that it is unclear whether travelers judge travel agencies to be less valuable due to the presence of travel websites.

2.2   ONLINE DECISION AIDS AND RECOMMENDATION AGENTS

The Internet evolution is based on all sorts of new and open technologies, like the Java programming language, semantic tagging, distributed objects, and the extensible markup language. According to Ma (1999), just as a spreadsheets work through numbers, and a word processor works through the medium of words, agents work through the medium of

actions. Furthermore, he writes, "agents are atomic software entities operating through autonomous actions on behalf of the user, machines and humans, without constant human intervention" (p.79). This definition accommodates all sorts of agent types, including intelligent, mobile, multiagent systems, and profiling.

<u>2.2.1   Human and Electronic Aids</u>

The way a consumer uses an electronic decision aid is sometimes dissimilar to the way they would use human decision aids. Consumers evaluate human and electronic aids differently. Consumers appreciate the effort exerted by human aids. However, the way in which they conceptualize effort from an online decision aid is that even though they are effort savers to the consumer they are not regarded as effortful tools. Yet, consumers recognize that if it were not for online decision aids they would have to do the work themselves. Furthermore, the availability of ODAs enables consumers to use more information in their decision-making while avoiding being overwhelmed with information and information processing (Bechwati and Xia, 2003). Enriched online experiences are created through information that strikes the right combination of engagement and effort (Novak, Hoffman and Yung, 2000).

In a study conducted by Jarvelainen and Puhakainen (2004) they explained the motivations of consumers who seek information online and make an offline transaction with a familiar and reliable company operating both online and offline services. They used a Web survey from 2,500 customers of a passenger cruise company to test hypotheses. The results suggested that lack of trust in the customers' own online skills leads to preference of offline channels.

A variety of studies on recommendation agents, online decision aids, and collaborative filtering show that such tools could assist consumers in making decisions. Electronic decision aids are defined by Haubl and Trifts (2000) as software tools that: a) attempt to understand a decision maker's preference function, and b) make recommendations based on understanding of that preference structure. It is evident that when people's current state of knowledge is inadequate they engage in information searching activity. As a result, they are not able to identify salient characteristics of information objects. It might be appropriate then for some part of the information system to recommend to information seekers certain courses of action (Belkin, 2000).

Another insightful comparison is that of interactive decision aids and passive decision aids. Researchers found that contrary to expectations, a passive aid performed as well as an interactive one (Olson & Widing, 2002).

Some interesting research has been done comparing human and electronic aids. This includes evaluating the motivations of consumers, and how online tools could assist consumers to make decisions. Any comparisons of online and offline aids employed in the leisure travel sector will add to this research.

2.2.2   Decision-Making Behavior

In terms of a consumer decision-making model, intelligent online agents or tools can assist consumers in different stages of the decision process. Agent technology can be useful in assisting the consumer in the need-identification stage (Guttman, 1999). Intelligent agents can help consumers search for information and evaluate alternatives. Decision support systems (DSS) such as online decision aids help human decision makers who may be good at selecting relevant variables in the decision process but poor at integrating and retaining large amounts of such information. These tools have the potential to transform the way in which consumers search for product information and make purchase decisions (Haubl & Trifts, 2000).

Bergmann and Cunningham (2002) developed a model that can help explain how humans communicate in an online environment and how online tools can affect the search process. The model in Figure 3 builds on the Servuction Model, takes a closer look at the communication process and incorporates elements of AI.
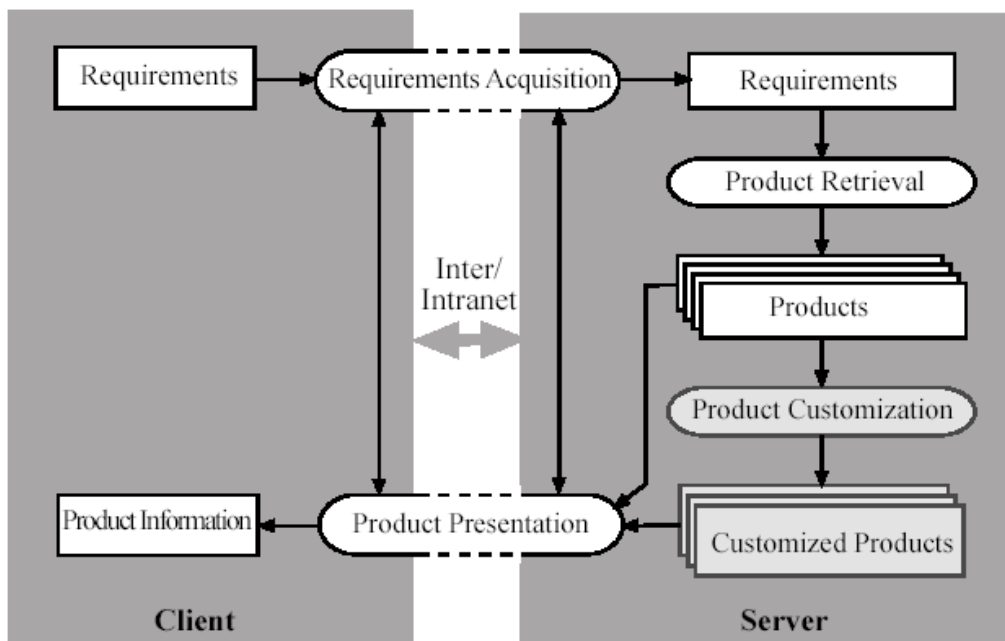
Figure 3. Model of Communication and Relation to the Virtual Sales Agent, Bergmann and Cunningham

Artificial Intelligence is used so that the acquisition of customer's demands adapts to the customer rather than making the customer adapt to the electronic sales system. After the virtual agent acquires the requirements of the customer, it makes them available as input for the product retrieval stage.   The agent searches for products that fulfill the customer's requirements. The matching products would be presented to a customer or they could undergo a customization phase, which is the most likely scenario with a complex configurable product such as travel. The model also shows how processing of information is distributed between the client and server side.

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Requirements are acquired by asking the customer or user questions and presenting the user with an interface that allows them to make choices. Alternatively, the virtual agent can propose a product and then allow the user to make adjustments to it. The product search and retrieval function can influence the communication process with the consumer. The agent can match a user's requirements with products or it can use a collaborative approach where a user is matched to products based on past behavior. The aim of product presentation is to show the user the retrieved product to the user, which entails transferring product information from the server side or external source to the client. If different alternatives are available, the customer may be given an opportunity to browse through them, and compare them. The customer may also be provided with explanations of why the virtual agent selected them. The cycle between the two components of product presentation and requirements acquisition may be undertaken several times until a suitable product has been found. The processing of information within the two components can be dispersed between a client and server side. A thin client approach means that most of the computation occurs on the server side whereas a fat client approach moves most of the computations to the client side. Fat client processing means the user must implement some stand-alone software or they can run it as an Applet in a Web browser. The thin client approach is characteristic of a low interaction speed in contrast to the fat client where interaction speed is faster and the server load is reduced significantly.

The model is useful in understanding the communication process with a virtual agent. However, the model does not take into account all of the decision processes that occurs regarding travel product selection and the various components of such a process. This is the deficit in knowledge that further research can fill.

There are some key issues regarding the information search stage of the decision process where agents play an important part. Ariely (2000) examined how consumer control over the flow of information online affects decision quality. In the case of traditional mass media such as television, a consumer can control the level of information flow by changing the channel. Other than this limited freedom, consumers have no control over the information that is presented, in what order it is presented, or for how long the information will be presented. However, with print ads, consumers have much more freedom. With electronic communication, consumers have very high levels of information control. Another contrast is that with electronic communication channels the level of control is variable and can be chosen by the marketer or information provider but in traditional communication media there is a fixed level of information control. The implication of the interactive communication which electronic media facilitates is that interactive communications gives consumers control over the content, order, and duration of product-relevant information which causes them to value the information more highly.

Software agents are helping consumers contend with information overload. Certain characteristics of customers and various types of products are affected more by recommendation agents when it comes to consumers' evaluation and choice (Swaminathan, 2003). Swaminathan studied how interactive decision aids influence

consumer decision-making across different types of consumers and product categories. The theoretical basis for this is prior research on information overload (Jacoby, 1977). Consumers gather information as a risk-reduction strategy. However, managing information can be a difficult task. Recommendation agents have a greater impact on decision quality with categories of products that consumers perceive to involve a greater amount of risk such as high priced items. Online merchants who risk overloading consumers with information should consider incorporating interactive decision aids into their websites. Furthermore, in complex categories of products, recommendation agents should be designed so that they narrow down the set of attributes the consumer needs to consider based on some pre-defined approach.

Finally, agents can support consumers in the purchasing decision stage of the buying process. Software agents have been described as personalized, continuously running and semi-autonomous software (Maes, 1994). These characteristics make them well-suited for mediating consumer behaviors involving information filtering and retrieval, personal evaluations, and time-based interactions (Maes, Guttman, and Moukas, 1999). These roles correspond to the buying behavior of the Engel-Blackwell consumer decision-making model and the Bettman information-processing model. Software agents can assist consumers by performing tasks such as merchant brokering, product brokering, and negotiation in the buying process. Specifically, agents like MySimon (http://www.mysimon.com) and Kayak.com lower consumers' search costs by directing consumers through a large product space and focusing on the products that best meet their needs. Decision aids can operate within an online store such as at Amazon.com, but also across merchants (e.g. www.shopper.com). Another tool named Tete-a-Tete helps with merchant brokering, comparing merchants rather than products, and negotiation, dealing with price or other terms of the transaction.

Travel and Tourism certainly can be described as complex categories of products. Consumers value any method that can be used to control, manage, and process the information requirements of travel planning. Further research will extend the knowledge of how consumers employ online tools, and how these tools compare with human aids.

2.2.3 Preference Construction

Haubl and Trifts (2000) have investigated the role of electronic recommendation agents on preference construction. Later studies by Haubl, Murray and Trifts found that a recommendation agent may influence the consumer's preference (Haubl, Murray, & Trifts, 2003). Consumers allow an RA to influence them in the same way they would rely on a salesperson in a retail store. However, RAs do this in different ways by controlling the choice environment, for instance. Whereas a salesperson can change his or her recommendation for different customers, an electronic agent can change the entire online shopping environment for each customer.

Agents can help consumers address their personal preferences and evaluate alternative products that meet their needs. Haubl and Murray (2003) showed that in this process agents provide opportunities to impact consumers' preferences and, also their purchase

decisions. For a recommendation agent to be effective, the user must trust in the recommendations it produces and the process by which those recommendations were generated. By trusting the agent, consumers allow the agent to influence their preference. Haubl, Murray, and Trifts (2003), defined recommendation agents (RA) as the shopbots that gather information on a consumer's personal preferences in a specific product category and then make product recommendations based on this information.

The selective incorporation of product attributes by a recommendation agent is an essential facet of an electronic shopping environment and it likely plays an important role in consumers' construction of preference in a digital marketplace. The inclusion of an attribute makes this attribute more important in the consumers' purchase decision-making process.

Personalized and integrative shopping agents can lever the interactive power of the Web for a more accurate understanding of consumers' preferences (Yuan, 2003). Yuan developed and studied a comparison-shopping engine that consists of a product/merchant information collector, a user profile manager, a consumer behavior extractor, and an on-line learning personalized ranking module.

The prior research of Haubl, Murray, and Trifts (2003) provides a good base for expanding knowledge of how consumers allow an online tool such as an RA to influence them. New research can contribute by showing how an RA can help in travel planning and whether it will act in the same way as a travel agent in a retail store.

2.2.4 Information Filtering and Collaborative Filtering

Intelligent agents have offered tremendous potential in supporting well-defined tasks such as information filtering (IF) and collaborative filtering (CF). Information filtering is a process used to derive recommendations for a particular user from knowledge of that user's past behavior (Schafer, 1999). Collaborative filtering or social recommendation derives recommendations using the behavior and preferences of others, especially those who have displayed similar tastes and interests as a particular user. Goldberg, Nichols, Oki and Terry founded the research direction termed collaborative filtering (Goldberg, Nichols, Oki and Terry, 1992).

Intelligent agents perform in similar ways to a salesperson that is highly knowledgeable about both the product alternatives available and the consumer's tastes. The best way for intelligent agents to base their recommendations is on a combination of the approaches of collaborative filtering and individual agents. Researchers Ariely, Lynch, and Aparicio compared these two approaches to find that individual agents learn more slowly but perform better in the long run. This occurs because agents improve the quality of their recommendations as they learn about consumers. Collaborative filtering agents perform better initially when the agent has little or no information about the consumer (Ariely, Lynch, and Aparicio, 2004). Viappiani, Pu and Faltings (2002) also advocated mixing techniques as a possible way to overcome shortcomings of an individual system. For instance, a recommender could produce knowledge-based recommendations for a new

user and change to a collaborative method when a sufficiently large dataset is available. In the case of Ariely's approach, the potential for an agent to improve the recommendations it gives is related to the amount of time a consumer is willing to spend providing feedback to the agent and training the agent.

Collaborative filtering mimics word-of-mouth recommendations; it predicts a person's preferences as a linear weighted composite of other people's preferences. Net Perceptions and Likeminds are examples of this method. Another type of recommendation system is known as content filtering, which makes recommendations based on consumer preferences for product attributes. Personalogic, now owned by AOL, and Frictionless Commerce, now acquired by SAP, used this method of self-replicated importance ratings and/or attribute tradeoffs to generate their recommendations (Ansari, Essegaier, and Kohli, 2000).

2.2.5   Trust

An interesting study relating price competition and trust was conducted by Lynch and Ariely (2000). They extended the ideas suggested by Alba et al. (1997) and Bakos (1997) by examining the long and short-run consequences of reduced search costs. Alba et al. showed how electronic retailing has the potential to increase price competition. However, Lynch and Ariely argued that improving the ease with which consumers can compare prices across stores does not necessarily intensify price competition. Competing stores may sell exclusive (nonoverlapping) merchandise, for instance. Their empirical results supported this conjecture.

Agents can be used for outcome-based measures such as advancing decision quality as well as process measures such as increasing satisfaction and developing trust (West et al., 1999). Trifts and Haubl (2003) determined that an online retailer could build trust with consumers by providing access to uncensored competitor price information. In addition, shoppers may develop a preference for the online store providing cross-vendor comparisons. Such preference enhancement relies on the objective market position of the online retailer. Consumers may also infer that the online retailer is price competitive.

Also on the issue of trust, previous research by Jarvelainen and Puhakainen (2004) proposed that one of the most important reasons for not using an online channel for purchasing is the lack of trust: that is, consumers face unfamiliar vendors as well as insecurity of transactions and personal information. However, secure online purchasing is already available and customers are learning to avoid risks of the Internet.

2.2.6   Personalization and Customer Loyalty

According to Haubl and Trifts, intelligent agents play an important role in the personalization of a customer's interface with the online merchant. A personalized shopping environment can potentially increase customer loyalty as it reduces the effort and time required for the buyer to make a purchase. An online merchant can increase the

switching cost for the customer through a personalized environment (Haubl & Trifts, 2000).

Personalized customer interfaces are unique user interfaces for each shopper structured around what a website knows, or is able to deduce, about an individual customer. Researchers showed how various forms of personalization affect buyer behavior. The presence of personalized product recommendations (PPRs) shapes a consumer's decision whether or not to continue a search and their selection of a most desired product. When the decline in product utility in the list of recommendations was steeper, shoppers searched less. PPRs also increased the extent to which consumers relied on heuristics. This is likely due to the difficulty in choosing between equally attractive recommendations provided by the PPR. Controlled experiments suggest the method by which PPRs are produced may sway consumers' product choices and long-term preferences. A specific product feature that is included in the process of generating PPRs caused that feature to become important in the consumer's purchase decisions (Haubl, Dellaert, Murray, and Trifts, 2004).

It is quite possible that some basis for segmenting consumers could be derived from the attitudes consumers form around the recommendations provided by an RA. Blom's (2003) work described a qualitative study that addressed the factors affecting an individual's likelihood of using personalized recommendations. From his study, a theory of personalization emerged which identified a number of factors that impact an individual's decision to use the recommendations. One of the factors is the attitude an individual has towards the recommendations. This could be a serious approach or a playful one. The 'serious' users would have used the information provided in the recommendation system in their decision-making. They would trust the system if the predictions turned out to be accurate. 'Playful' users associated the recommendation system with an entertainment device. They would rather use the service to test the system's ability to predict the preferences of the user. Another category of user includes those who need to feel in control over the interaction with the recommendation system. A recommendation system should be designed so that it narrows down the possibilities instead of 'telling' the user what they should choose.

Questions remain whether intelligent agents used in travel planning can compare with a travel agent that is highly knowledgeable about both the product alternatives available and the consumer's tastes. Another key consideration is if consumers can place their trust in online retailers and whether these retailers can gain the loyalty of customers.

<u>2.2.7   Travel Decisions</u>

With regards to the travel sector, there are a number of ODAs that have been developed to assist consumers with travel decisions. Ambite, et al. (2002) developed such a system called Heracles, a hierarchical constraint planner that aids in interactive itinerary development by showing how a particular choice affects other choices. Heracles relies on Theseus, an information agent platform. Theseus facilitates the creation of information gathering and monitoring agents (Barish, DiPasquo, Knoblock & Minton,

2000). The system is a great aid to travelers who have numerous decisions to make while planning a trip. The monitoring agents help provide notification of changes and cancellations but do not currently communicate problems to the travel planner such as a flight cancellation. Ambite et al. plan to incorporate this feature in the next generation of travel planner.

Travel decisions can be optimized through software agents that can make predictions about things such as flight delays. Knoblock (2003) developed a predictor that correlates the historical flight data from online sources such as the Office of Airline Information in the US, with historical weather information provided by the US National Weather Service. This process requires that information extracted from one website be combined with other information in order to perform the required task (Knoblock, 2003). The system will also check the weather forecast for the date of the flight at the source and destination airports. The predictor will provide a traveler with the probability of a delay and the length of that delay.

Another system has been developed to predict whether airline ticket prices would decline or rise. The system, called Hamlet, makes recommendations by learning a predictive model of airline ticket pricing (Etzioni, Knoblock, Tuchinda &Yates, 2003). Knoblock et al. (2008) report how in a simulation using real-world flight data, Hamlet, was able to achieve a savings of 61.8% of the optimal possible savings. This technology was licensed to a company called Farecast (www.farecast.com). Farecast now collects data on routes throughout the United States, and travelers can go to this site to see predictions of when to buy an airline ticket. Expedia has recently purchased Farecast and incorporated its predictive ability into the user interface for consumers.

Haubl and Dellaert (2004) used controlled experiments to analyze how tourists may benefit from electronic agents as they choose between travel alternatives. As a travel agent would do, tourists were asked about their preferences of travel features and the recommendation agent then used these preferences to rate the attractiveness of travel options for the individual. The availability and configuration of this electronic agent improved the quality and efficiency of the tourist choice process. Tourists engaged in fewer searches and found options that were closer to their stated preference. They spent more time evaluating alternatives, perhaps because the alternatives presented were equally attractive. It seems from this and other studies that consumers expend less effort to make better decisions (Haubl & Trifts, 2000).

Pu and Faltings (2000) developed SmartClient, a unique constraint programming technology that uses a thin but intelligent client to provide personalized travel information access for its user. It offers exceptional filtering and visualization support with a wider range of personalization options than existing tools (Pu & Faltings, 2001). SmartClient also supports integration of different information sources in the same framework, and eliminates the need to personalize many sites individually with different parameters.

Torrens, Faltings and Pu believed that the next generation of intelligent travel information system should help the user plan an entire trip according to the user's constraints and preferences. It should have explicit problem-solving capabilities. In this sense their software goes beyond the typical tasks of searching and filtering information. Their system, SmartClient, applies constraint satisfaction techniques in different ways (Torrens, Faltings, Pu, 2001). A travel portal such as Expedia or Travelocity offers products of an assortment of different companies and bundled products such as packages that consist of air, hotel and other components. Such portals have to allow travelers to modify trips and interact with the travel site via mobile computing devices. These features are difficult to implement with an architecture that relies on a central server, but become easier in the distributed architecture of SmartClient (Pu & Faltings, 2002).

There are many online agents in a product category such as travel, so how do consumers determine which one to accept? Consumers evaluate and choose among online agents based on whether the agent is considered more informative or diagnostic. The more the agent appears to be diagnostic the more a consumer will accept the agent's advice. If an agent has exhibited variance in past opinions it rendered, it would be considered diagnostic by the consumer (West & Broniarczyk, 1998). Furthermore, consumers give different weight to all prior instances of agreement with the agent when considering the value of the agent's current advice. Consumers evaluate agreement on extreme opinions as important criteria. A consumer's affective reactions emerge when their most important needs, goals, and values are implicated in the decision process (Cohen & Areni, 1991). Agents that agree with them on extreme alternatives that involve those needs, goals and values would be regarded highly since the agent is deemed similar to the consumer in terms of its preference structure. This is particularly the case with hedonic products and when the agent provides positively valenced advice. That is, the advice of agents is more acceptable or valued by the consumer if it is positive extreme agreement (Gershoff, Mukherjee & Mukhopadhyay, 2003).

One of the distinctive aspects of hospitality and travel consumers is that they rely more on information from personal sources in choosing a service provider but in the post-purchase evaluation process they use their experience with the service. Furthermore, consumers often use price as an indication of quality and when they buy hospitality and travel products they often perceive some risk in their purchase.

<u>2.2.8   The Future of Intelligent Agents</u>

Information agent technologies are improving constantly. Tuchinda and Knoblock (2004) designed an approach that enables users who do not have programming skills to build complex information agents on their own. This approach requires the user to answer a series of questions guided by an Agent Wizard. The resulting information agent will integrate and monitor information from multiple web sources that could assist in travel itineraries.

Knoblock et al. (2008) discuss advancements of their Travel Elves project that began in 2004, and the lessons learned for updating technologies used in this travel planning

intelligent tool. They recognized the need to work on: 1) methods for allowing end users to define their own agents tailored to their individual needs without the need to learn complex programming languages, 2) integrating, and monitoring new sources of data by engineering the agents to discover those sources themselves, and 3) trying to prevent unnecessary notifications such as frequent price changes unless the price change was significantly greater than the penalty for changing tickets.

Companies such as DestinationRx could move beyond being a pioneer in prescription drug price comparison to industry leadership. Combining price comparison databases with proprietary technology, and transaction-support tools, DestinationRx is in a good position to develop a sustainable competitive advantage for growing market share and profits in the healthcare marketplace.

Ultimately, we expect online intelligent agents to become even more intelligent, user-friendly, and interactive. Some consolidations among the plethora of shopping portals, price and product comparison engines, social and recommendation sites such as those listed in section 2.1.2 is anticipated as well.

2.3   SERVICES MARKETING

Travel and Tourism are primarily services where service benefits are delivered through an interactive experience involving the consumer. Zeithaml, Parasuraman and Berry (1985) observed that services have in common four factors: intangibility, inseparability of production and consumption, heterogeneity, and perishability.

Intangibility differentiates a service from a good. There is an inseparability of production and consumption since services are sold first, then produced and consumed at the same time. Heterogeneity refers to the potential for variability in the performance of services and problems with lack of consistency that cannot be eliminated. And, perishability exists because services cannot be saved; the unused capacity in services cannot be claimed, and services cannot be inventoried.

2.3.1   Servuction Model

The Servuction Service Model shows that part of the experience created by the delivery of a service is visible to the consumer but part of it is not. The invisible portions, such as the kitchen of a restaurant affect the visible part of the organization. The visible part of the organization is broken into two parts, the inanimate physical environment where the service takes place and the contact personnel who actually provide the service. Lastly, the model suggests that Customer A who is purchasing the service will be affected by Customer B, who is also in contact with the service organization at the same time.
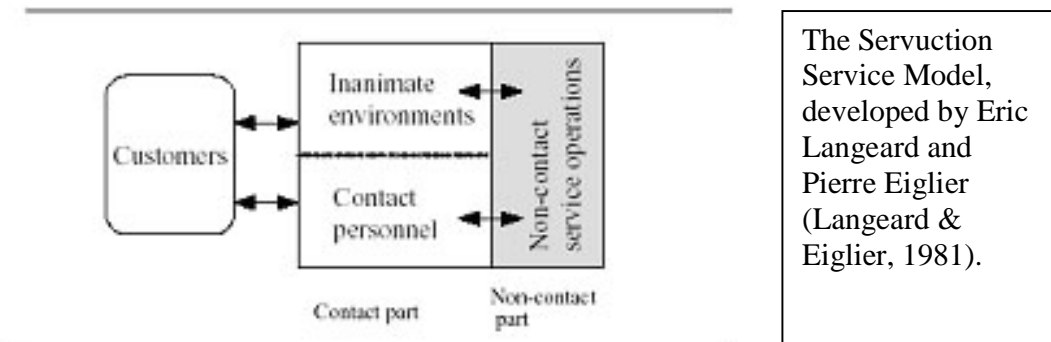
The Servuction Service Model, developed by Eric Langeard and Pierre Eiglier (Langeard & Eiglier, 1981).

Figure 4. Service Operations (system) Conceptual Model

<u>2.3.2   Implications of the Servuction Model</u>

The combined effect of the characteristics of services and the dynamics of the Servuction Model bring about several key implications on services marketing.

Since services cannot be inventoried, in order to receive the benefit, the consumer must be part of the system. Services must be consumed at the point of production. Without an inventory or a separation in production and consumption it is difficult to control the quality of the product. Without an inventory or a separation in production and marketing the marketing department needs to be constantly interacting with the operations department.

Services are time dependent such that the service must be provided when the customer asks for it. These customers become part of the system, that is, the customer is in the factory while they are consuming the service. Services are place dependent since where the service experience takes place is largely dependent on the consumer. Each service location has to be its own factory so-to-speak, as you often cannot move the factory. Because consumers are always involved in the factory, when we change the factory, we inevitably change consumer behavior. Furthermore, if we change the benefit concept, then we have to change the factory. Since every one and every thing that comes into contact with the consumer is delivering the service, marketers need to understand the process through which the organization interacts with customers. Finally, there is a lack of ability to control service quality before it reaches the customer since service encounters occur in real time, and consumers are involved in the factory so that mistakes cannot be corrected as they occur. The only solution is to attempt to eliminate mistakes at the source and to have a good service recovery strategy since service failures are inevitable.

The Servuction Model demonstrates well how leisure travelers could receive service benefits through an interactive experience involving the consumer and a service provider in a brick-and-mortar environment such as a traditional travel agency. Earlier in this

review, a model by Bergmann and Cunningham (2002) illustrated the interactive nature of communication between a consumer through their personal computer and a server of travel website.

Lovelock (1983) pointed out the characteristics of services and how their implications can offer strategic insights to marketers. Three relevant characteristics to the study of online and offline travel services are the type of relationship the service organization has with its customers, the amount of latitude the service provider has on customization and judgment with the travel plans of customers, and how the service is delivered. Additional insights will improve the marketing of travel products and services.

Figure 5 illustrates the literature discussed thus far. Contributions of this study includes some motivations of consumers in using online tools, comparisons of online and human aids, an enhanced view from the travel client's side of Bergmann and Cunningham's model, explanations of how an RA can help in travel planning and whether it will act in the same way as a travel agent in a retail store, and lastly, new insights on travel services marketing concepts.
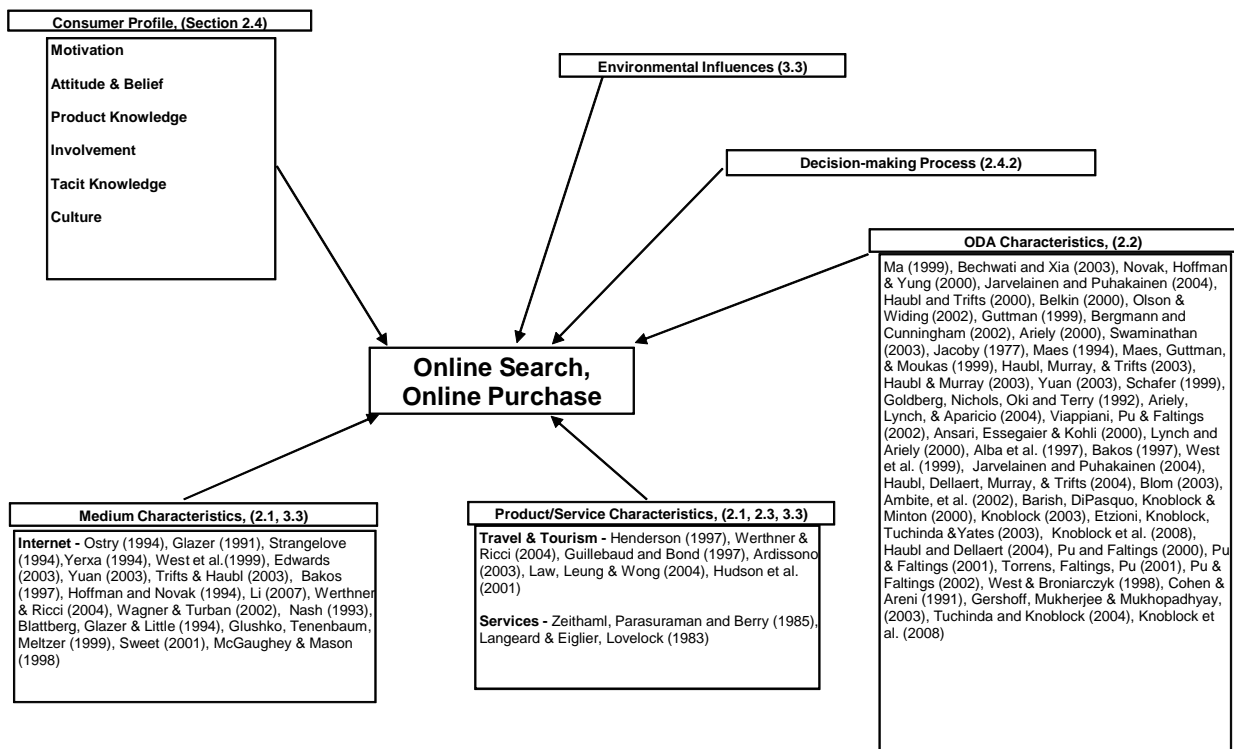
Figure 5. Characteristics of Internet Medium, ODA, Travel Product and Services

2.4   CONSUMER BEHAVIOR

The American Marketing Association (1988) defined consumer behavior as "the dynamic interaction of affect and cognition, behavior, and environmental events by which human beings conduct the exchange aspects of their lives." From this definition we recognize that the behavior of consumers is dynamic as it involves the interplay among affect, cognition, behavior and environmental events, and it assumes there are exchanges between consumers and businesses. The behavior of consumers in an online environment can sometimes be different than that within a traditional offline environment.

2.4.1   Online Behavior

Robyn Greenspan in The Click Z Network reported the Internet is an increasingly valuable tool for travelers. A larger number of personal travelers are purchasing their trip needs online compared to business travelers and will increase their online purchases. Michael Pastore on Click Z indicated that only 18% of consumers who bought airline tickets online were loyal to Web-based travel agencies, and more than 70% of those who book tickets online use multiple sites to compare before making a purchase.

Some researchers, while trying to understand how the Internet may influence buyer behavior, applied the classical buyer decision-making process to purchases made on the Internet (McGaughey & Mason, 1998). Other researchers studied the implications of the Internet and online shopping for consumers, retailers and manufacturers by comparing the Internet to traditional business (Alba et al., 1997).

Okeefe, Massey, et al (2002) discussed cultural differences in the online behavior of consumers. The online behaviors of consumers are subtly different in nature from traditional consumer behavior due to the unique characteristics and interplay of technology and culture.

It has become critical for companies to determine the types of gratifications that impel consumer use of the Internet. A study of Americans shows they like using the Web as a search tool and regard the Internet as a source of information for learning and research. People recognize the Internet as a useful communications medium, and derive personal gratification from using it as a socialization venue (Stafford & Gonier, 2004).

A large percentage of Internet users have a primary goal of simplifying their lives and saving time. Forsyth, Lavoie, and McGuire (2000) called these consumers simplifiers and discovered they comprise 29 percent of Internet consumers and over 50 percent of all online transactions.

Even though the Internet has given consumers a greater amount of information, online tools have reduced consumers' search costs. These tools assist consumers in decision-making, and improve the quality of their decisions (Haubl & Trifts, 2000). Humans have limited resources for information processing despite the assistance of online tools by

virtue of their limited memory, attention, or motivation, for instance (Payne, Bettman & Johnson, 1993).

Some retailers may not provide online tools because they do not want to empower consumers to this extent. Other merchants are reluctant to allow consumers to compare product offerings with other suppliers. Another reason for reluctance could be that retailers are unsure what effect these tools may have on the consumer purchase process.

In explaining consumer attitudes about online shopping and predictors of online behavior, it was discovered that there are more than demographic factors that influence the amount of money people spend online, or whether or not they buy there. Bellman, Lohse & Johnson, (1999) claimed the explanations are whether consumers like being online and whether the time they have for buying things elsewhere is limited. They also found the most significant predictor of online buying behavior is the desire to look for product information. Another predictor is what they called a wired lifestyle. A wired consumer has been on the Internet for years, uses it to send and receive email messages, likes to be the first to use the latest communication technologies, and uses the Internet at work as it improves their productivity. Because these consumers use the Internet for many activities it is natural to expect them to use it to search for product information and to buy products.

Discretionary time was also reported to influence a person's decision to shop online. As the total number of hours worked by members of a household increases consumers have less time to search for and buy products in a traditional store. This is especially the case for dual-income households. These consumers may have used catalogs in the past but now take advantage of E-commerce sites on the Web. Bellman, Lohse & Johnson claimed consumers value the Web's ability to save them time over its cost savings capability.

It appears the behavior of consumers in an online environment is different from traditional consumer behavior. In addition, consumers may utilize online tools in various ways and derive diverse forms of gratification. Research that focuses on the leisure travel sector would fill a gap in knowledge regarding these areas.

2.4.2   Decision-Making

Another consumer decision-making model portrayed the consumer as having a limited capacity for processing information (Bettman, 1979). When given a choice, the consumer rarely undertakes very complex analyses of available alternatives, but rather will use simple decision heuristics. This allows them to avoid the overly burdensome task of assessing all the information available about all the alternatives in order to arrive at a choice. The consumer undertakes an external search to the extent that information now available in memory is judged to be inadequate. Additional information will be acquired until the consumer perceives any additional exertion to be too costly in terms of time or effort.

Consumers do not enjoy extending a great deal of effort on decision making. Equity theory demonstrated that as more effort is spent on decision-making, consumers' satisfaction with the decision process diminishes (Oliver & Swan, 1989).
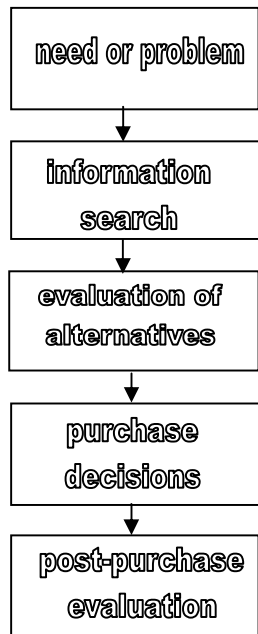
need or problem	Engel, Blackwell and Miniard developed a comprehensive model on consumer decision-making that explains particularly well how consumers arrive at brand choices (Engel, Blackwell and Miniard, 1986). Their model, (see Figure 6) features five stages in the decision process. The relative amount of attention given to each stage is a function of how extensive the problem-solving tasks are felt to be. In routine problem-solving, consumers skip stages such as external search and alternative evaluation, whereas in extended problem-solving, consumers pass through all stages. Information from marketing and nonmarketing sources are inputs in the information-processing section of the model. A consumer must allocate information-processing capacity to a message, interpret it, and retain the message by transferring the input to long-term memory.
↓ information search	
↓ evaluation of alternatives	
↓ purchase decisions	
↓ post-purchase evaluation	

Figure 6. The Buyer Decision Process, Engel, Blackwell & Miniard

The organization of information can change the cost of searching which in turn can affect decision-making (Bettman, Johnson, & Payne, 1990). Lynch and Ariely (1998) manipulated the processing cost of information to discover that price sensitivity was lowest when price was easy to process and quality information was easy to process. Subjects in the experimental online wine store were more satisfied with wines purchased in the environment with easy access to quality information.

When buyers determine that the cost of making a disappointing purchase increases, they seek additional information. For higher priced items, the cost of making a disappointing purchase is higher and as a result, so are the benefits from prepurchase efforts to acquire information (Laband, 1991). Therefore, rationally, consumers' search should be increasing when the importance of the purchase increases. However, search activity for information itself costs consumers as well. Perceived cost of information search is defined as "the consumer's subjective assessment of monetary, time, physical effort, and psychological sacrifice that he or she expends searching for information" (Bettman, 1979;

Schmidt & Spreng, 1996, p. 253). When the outcome of the search is potentially more beneficial consumers are likely to spend more time and effort searching.

The cost of information search for consumers is influenced in part by the accessibility of information. Accessibility is higher when consumers are aware of the availability of information and it is in a format that is easy to understand (Schmidt & Spreng, 1996). The role of online search tools for finding information, and XML in presenting the information, is therefore important.

For some kinds of preferences, consumers construct guesses about what they prefer. (Bettman, Luce, Payne, 1998; Payne, Bettman, and Johnson, 1993) and these constructions represent best guesses about what would maximize hedonic pleasure (Loewenstein & Schkade, 1999). Given that the context within which these choices are made can be manipulated, these guesses are likely to be affected in online environments (West et al., 1999). For instance, Mandel and Johnson (1998) show that the background of a website called wallpaper can set up the importance of product attributes.

The search for information is clearly one of the stages of the consumer purchase decision process and it has been the subject of much empirical research (Beatty & Smith, 1987; Punj & Staelin, 1983; Srinivavsan & Ratchford, 1991). Consumers stop their information search efforts short of being perfectly informed. Different factors affect when they stop, the most common of which are the cost of information search, the level of consumer product knowledge, the type of purchase, and the level of consumer involvement.

Engel's buyer decision process, Bettman's information processing models and the empirical research of others have not been specifically applied to an understanding of leisure travel planning processes using online tools but this study aims to do so.

2.4.3 Consumers' Product Knowledge and Involvement

Prior product knowledge has been defined either in terms of what people perceive they know about a product (subjective knowledge) or in terms of what knowledge the individual has stored in memory (objective knowledge) (Brucks, 1985; Rao and Munroe 1988). Past studies reveal that knowledgeable consumers are more likely to search for new information before making a decision (Duncan & Olchavsky, 1982; Johnson & Russo, 1984; Punj & Stalein, 1983). Less knowledgeable consumers are more likely to rely on attributes such as brand name, price (Park & Lessig, 1981) or opinions of others (Brucks, 1985; Furse, Punj and Stewart, 1984).

Consumers can combine the three types of product knowledge to form a simple associative network called a means-end chain (Guttman, 1982). A means-end chain links consumers' knowledge about product attributes with their knowledge about consequences and values (Young and Feigen, 1975). The means-end chain model proposes that the meaning of a product attribute is given by its perceived consequences (Sunil Mehrotra and John Palmer, 1985).

Means-end chains help marketers understand consumers' feelings of personal relevance for a product because they clearly show how consumers' product knowledge is related to their knowledge about self (Walker & Olson, 1981). Celsi and Olson (1980) determined that the type of means-end knowledge activated in the situation determines the level of product involvement a consumer experiences during decision-making. Consumers will feel more involved with the product if they believe product attributes are strongly linked to important end goals or values. Consumers who experience little or no involvement with the product believe the product attributes are not associated with any relevant consequences.

Involvement refers to consumers' perceptions of importance or personal relevance for an object, event, or activity (Krugman, 1965). Involvement is a motivational state that energizes and directs consumers' cognitive and affective processes and behaviors as they make decisions (Cohen, 1982). Involvement has also been referred to as an internal state variable that indicates the amount of arousal, interest, or drive invoked by a particular stimulus or situation (Andrews, Durvasula, and Akhter, 1990). Consumers who perceive that a product has personally relevant consequences are said to be involved with a product and have a personal relationship with it. Cognitively, involvement includes the means and knowledge about important consequences produced by using the product. People may express stronger affective responses such as emotions and strong feelings if product involvement is high. Highly involved consumers constantly collect information about a product of interest (Bei & Widdows, 1999).

A person's level of involvement is influenced by two sources of self-relevance: intrinsic and situational. Intrinsic self-relevance is based on consumers' means-end knowledge stored in memory (Block, 1982). As consumers use a product or observe others using it they learn that certain product attributes have consequences that help achieve important goals and values. Because this means-end knowledge is stored in memory, it is a potential intrinsic source of involvement. If this involvement is activated in a decision situation, the consumer would experience feelings of personal relevance or involvement with the product. Aspects of the immediate physical and social environment that activate important consequences and values, determine situational relevance thus making products and brands seem self-relevant.

A key to good marketing management comes from understanding a consumer-product relationship (Reynolds & Gutman, 1984). When marketers understand the consumer-product relationship they are able to segment the market in terms of consumers' intrinsic self-relevance (Lehmann, 1987). Different marketing strategies are necessary to address the unique types of product knowledge, intrinsic self-relevance, and involvement of consumers in different market segments.

Kassarjain (1981) found that markets could be segmented on the basis of involvement since consumers' involvement with purchasing influences their purchase behavior. Westbrook and Fornell (1979) also found four distinctive styles of information search among durable goods buyers ranging from the objective shopper at one extreme to the personal advice seeker at the other extreme (Slama & Tashchian, 1985).

Schmidt and Spreng (1996) reported that shopping enthusiasm and need for cognition (NFC) are also determinants of motivation to search but they are different to the concept of purchasing involvement. Shopping enthusiasm is defined as the enjoyment a consumer feels for the task of collecting and processing information about a product (Babin, Darden, and Griffin 1994). Need for cognition is the tendency for individuals to engage in and enjoy thinking (Cacioppo & Petty, 1982).

A consumer's level of involvement and knowledge clearly influence all purchasing decisions. The knowledge deficit regarding these factors is that none of the studies on these topics evaluate online travel planning in the leisure sector. Neither do they compare the online process with travel planning services provided by a travel agent.

2.4.4   Learning and Tacit Knowledge

Learning is defined as the process by which knowledge is acquired; thus, human learning does not have to occur in formal contexts. Learning that takes place in a non-formal environment is termed implicit learning. Reber (1993) defined this as "the acquisition of knowledge independently of conscious attempts to learn and in the absence of explicit knowledge about what was learned." This is contrasted with deliberative learning, which is typically conducted in a formal context, with time specifically allocated to acquiring knowledge, and a definitive expectation of the outcomes of learning.

Eraut (2000) noted Polanyi's definition of tacit knowledge (TK) as "that which we know but cannot tell." TK is knowledge an individual derives from everyday experiences that assist them in solving real-world, practical problems (Hedlund et al., 2003). Various efforts have been made by researchers to make tacit knowledge explicit through enabling the knower to tell or having the researcher tell and the respondent seek verification. Humans use tacit knowledge to acquire information about other people. Eraut declared that the knowledge of contexts and organizations is obtained through a process of socialization by observation, induction, and participation. Interestingly, he observed that many people consider the polar opposite of tacit knowledge to be classical decision theory, which derives mathematical models of decision-making situations.

Finally, Eraut identified different situations where tacit knowledge may be either acquired or used or both may occur simultaneously. The situations relevant to travel decision planning include knowledge: 1) assembled from the accumulation of episodes in long-term memory, 2) that permit rapid, intuitive response or understanding, 3) involved in transferring knowledge from one situation to another, and 4) rooted in norms, perceptions and activities that are assumed.

Business travelers can be expected to use the knowledge they gained while on a business trip to help plan their vacation. They would learn about the best modes of travel and accommodation, favorable destinations and activities. They will draw on their memory and transfer the knowledge derived from travel while conducting business for an employer to a situation when they plan leisure travel with their family members or friends. Research in the field of TK has not been applied in this type of scenario.

Furthermore, travel agents who are experts have an intuitive grasp of travel scenarios that are based on their deep tacit understanding. Such agents employ their tacit knowledge to analytically approach novel situations. Wagner and Sternberg (1985) pointed out that determining how TK is used in daily tasks and the mechanisms through which it is acquired are topics of future research.

<center>2.4.5   Motivation and Gratification</center>

Motivation is the reason for behavior. There are numerous theories of motivation such as those produced by Maslow and McGuire. McGuire (1974) created a classification system that organizes various theories into categories. Four main categories use the criteria of cognitive or affective modes of motivation, and motives based on preservation of the status quo or growth.

Cognitive motives focus on thoughts and beliefs and achieving a sense of meaning. The mental processes that form the cognitive system include understanding, evaluating, planning, deciding and thinking. A major function of the cognitive system is to interpret, rationalize, and understand significant aspects of a person's experiences. People can interpret the meaning of their own cognitions or beliefs. Another major function is to process these interpretations in carrying out cognitive tasks such as identifying goals, developing alternative courses of action to meet goals, choosing an alternative and carrying out the behavior.

Affective motives deal with reaching a satisfying feeling and achieving a personal goal; they focus on emotions, evaluations, moods, and specific feelings. One characteristic of the affective system is that people have little direct control over their affective responses. These responses are felt physically in the person's body. The affective system can respond to virtually any type of stimulus and most responses are learned through classical conditioning or by socialization. Cognitive and affective modes of motivation can be highly interdependent such that affective reactions can influence cognition during decision-making and vice versa.

McGuire's classification system identified sixteen subcategories of motives within the four main categories. There are several key ones that are most related to the area of online and offline travel planning aids. The first such subcategory is what McGuire termed a cognitive preservation motive or the need to categorize. People have a need to organize the vast array of information and experiences they encounter in a meaningful yet manageable way. In order to accomplish this, they establish categories or mental partitions that allow them to process large quantities of information. Another relevant subcategory is a cognitive growth motive, which is the need for stimulation where a person seeks variety and difference. A different cognitive growth motive is the utilitarian need, which sees the consumer as a problem solver. An affective preservation motive includes the need for tension reduction. This motive explains why consumers are attracted to recreational products and services to manage tension and stress. A similar subcategory of motive is the need for reinforcement. People act in certain ways because they were rewarded for behaving that way in similar situations in the past; perhaps

loyalty points are a good example of this. Lastly, a key affective growth motive is the need for affiliation. Affiliation is the need to develop mutually helpful and satisfying relationships with others.

Korgaonkar and Wolin (1999) developed a scale and identified seven motivations and concerns regarding web use: 1) social escapism motivation, 2) transaction-based security and privacy concerns, 3) information motivation, 4) interactive control motivation, 5) socialization motivation, 6) nontransactional privacy concerns, and 7) economic motivation.

Eighmey and McCord (1998) found that gratifications with viewing commercial Websites bore similarities with other types of media but there were two new dimensions they called personal involvement and continuing relationship. Personal involvement referred to the extent to which the consumer regarded the Website as personal and continuing relationship represented whether or not users desired to visit the website again.

Uses and gratifications theory explains why people use the media and what gratifications they seek in media use. Ko, Cho & Roberts (2004) developed a model to explain the effects of motivations and interactivity in establishing consumers' attitudes and purchase intentions. Motivations are looked upon as the antecedent conditions and the consequent conditions are viewed as gratifications. In other words, gratifications sought by consumers (the motivations for media use) and gratifications obtained (the results of media consumption). Four motivations for using the Internet were identified in that study: information, convenience, entertainment, and social interaction.

Joines, Scherer, and Scheufele (2003) explored the influence of demographic variables and motivational factors on two types of consumer Web use, specifically time spent searching for products and online shopping. Through Web and mail surveys they determined that economic motivations had a positive influence while concerns about transactional privacy were negatively related to time spent on product searches and online shopping. Also, interactive control motivations, information motivations, and socialization motivations were good predictors of online shopping.

None of these researchers examined the underlying motivations for using the Web for the specific consumer-related activity of searching for travel information or planning a vacation.

2.4.6   Attitudes Beliefs and Behavior

Trafimow & Sheeran (2004) point out two assumptions about attitudes that have been documented over the past century. One is the assumption that attitudes cause behavior, and the other is that attitudes have both an affective and cognitive component. Some researchers add the additional component of behavior or action (conation). The concept of attitude is well-established in literature. Zimbardo and Ebbesen (1970) describe attitudes as either mental readiness or implicit predispositions, which influence evaluative

responses directed toward some object, person or group. Attitudes are learned and are susceptible to change so that techniques, which are known to increase or decrease learning, should be able to produce change in attitudes. Interestingly, attitudes toward a technology seem important in influencing behavioral intentions argue Davis, Bagozzi, & Warshaw (1989).

To assess attitudes, verbal statements or adjectives such as good and bad could measure the affective component, and some researchers believe the cognitive and action components could be assessed by self-ratings of beliefs or by the amount of knowledge that a person has about some topic. Assessing attitudes involves creating clear, concise and straight-forward statements or adjectives that are expressions of desired behavior, which measure the present attitude of the subject. The scale construction should be designed so that a numerical value is assigned to each of the possible alternatives. If seven alternatives are chosen then values of one to seven would be used with four assigned to the undecided position. The one is assigned to one extreme of the attitude continuum and the seven to the other. There is considerable evidence to support the reliability and validity of a semantic differential method for measuring attitudes (Fishbein, 1967). Fishbein cites C.E. Osgood's technique for measuring the meanings people give to objects or concepts. Ratings on a large number of bi-polar scales using adjectives such as "good-bad", "strong-weak" have been subjected to factor analysis to reveal the underlying dimensions of meaning along which people see various objects as falling. An evaluative dimension was one of the most critical aspects of meaning discovered by Osgood; this dimension appears to be determined by the position an object or concept is seen to occupy on a good-bad or pro-con continuum. Thus, attitude is equated with the evaluative meaning of an object or concept so that an individual has a positive, negative or neutral attitude toward it.

A person's opinions and attitudes are strongly influenced by groups to which he or she belongs or wishes to belong. Changes in attitudes should produce changes in behavior if attitudes are themselves enduring.

In a similar fashion to Osgood's technique with attitudes, Fishbein and Raven (1962) demonstrated valid and reliable measures of belief. An individual could believe or disbelieve in the existence of a concept along a probability dimension, and this is treated as a belief. Fishbein (1962) also considers beliefs about an object or concept as being slightly different from beliefs in an object. Beliefs about a concept involve associating the object of belief with some other object, concept or goal. A probability dimension is still relevant as it gauges the probability that a particular relationship exists between the object of belief and some other object, concept, value or goal. In other words, belief is defined as a unidimensional concept referring only to the probability that a particular object (belief in) or a particular relationship (belief about) exists. Moreover, if an object of belief is regarded as a "stimulus" and the object or concept related to the object of belief is viewed as a "response", then a belief statement may be seen as a stimulus-response association. An individual has many beliefs about any aspect of his or her world. As Fishbein puts it, "the totality of an individual's beliefs about an object can thus be viewed as a belief system." The evaluative responses associated with each of the

beliefs are viewed as summative and it is the summated evaluative response, i.e., this attitude that becomes associated with the concept. The strength of a belief impacts the amount of evaluative response that is available for summation. Therefore, beliefs about an object and the attitude toward that object are in a continuous, dynamic relationship.

The relationship between attitudes and beliefs is that a person's attitude toward any object is a function of: (1) the strength of his or her beliefs about the object, and (2) the evaluative aspect of those beliefs or its importance. Even though all of an individual's beliefs about an object reflect his or her attitude toward the object, it is only the individual's salient beliefs that serve as determinants of attitude. It is believed that only six to eleven beliefs are salient for an individual at any one time (Fishbein, 1962).

According to Fishbein, beliefs about an object may change in two ways: (1) new beliefs may be learned, i.e. new concepts may be related to the attitude object, or new stimulus-response associations may be learned, and (2) the strength of beliefs already held may change. An individual's attitude will change in a positive direction every time an individual learns a new belief that associates the attitude object with some positively evaluated concept.

Lord (2004) cites modern meta-analyses have established a correlation between attitudes and behavior at 0.40. This rather low correlation could be considered one problem with the attitude construct. The other is that people maintain their attitudes but change the meaning of the attitude object. Solomon Asch (1940) put it this way; "the process a person engages in involves *a change in the object of judgment, rather than in the judgment of the object*" (1940, p.458, italics in original). For example, older consumers may consider the Internet safe and reliable when thinking about established websites such as Ebay and Expedia, but may regard the Internet unsafe and unreliable when considering unknown websites.

Fishbein (1962) lists another reason for low success rates in predicting overt behavior from attitudes. It is that attitudes are sometimes measured inappropriately. An attitude that is measured is usually an attitude toward some concept of "X" while the behavior predicted is with respect to some object of "x", i.e, a single instance of the general class of X.

About forty years ago, more research seemed to be available on the relationship between belief and attitude (cognition and affect), as well as the relationship between attitude and behavioral intention (i.e. between affect and conation), than on the relationships between attitude and behavior. Fishbein (1962) reported the correlation between attitude and the sum of the behavioral intentions was quite stable and high around 0.70.

This researcher believes more recent research findings since the sixties suggests behavior toward a given object is a function of many variables, of which attitude toward the object is only one. Behavior toward an object for instance, may be entirely determined by situational variables. Accordingly, situational variables are included in the Conceptual Framework of this research study.

Figure 7 exhibits literature that discussed the consumer profile and their decision-making behavior. Contributions of this study are the behavior of travel consumers in an online environment, how consumers use online tools in various ways and derive diverse forms of gratification, and motivations for using the Web when searching for travel information or planning a vacation. Moreover, it enhances Engel's decision model and also Bettman's information processing viewpoint. The research adds to our understanding of consumer involvement and knowledge in online leisure travel planning, and the services provided by a travel agent. Finally, this study considers the relevance of situational variables and so they are included in the Conceptual Framework of the study.

Consumer Profile, (Section 2.4)

Motivation - Stafford & Gonier (2004), Forsyth, Lavoie & McGuire (2000), Payne, Bettman & Johnson (1993), Schmidt & Spreng (1996), Babin, Darden & Griffin (1994), Cacioppo & Petty (1982), McGuire (1974), Korgaonkar & Wolin (1999), Eighmey & McCord (1998), Ko, Cho & Roberts (2004), Joines, Scherer & Scheufele (2003), Davis, Bagozzi, & Warshaw (1989)

Attitude & Belief- Trafimow & Sheeran (2004), Zimbardo & Ebbesen (1970), Davis, Bagozzi & Warshaw (1989), Fishbein (1967), Fishbein & Raven (1962), Fishbein (1962), Lord (2004), Asch (1940), Bellman, Lohse & Johnson (1999), Ajzen & Fishbein (1980)

Product Knowledge - Brucks (1985), Rao & Munroe (1988), Duncan & Olchavsky (1982), Johnson & Russo (1984), Punj & Stalein (1983), Park & Lessig (1981), Brucks (1985), Furse, Punj & Stewart (1984), Guttman (1982), Young & Feigen (1975), Mehrotra & Palmer (1985), Walker & Olson (1981), Celsi & Olson (1980), Park, Mothersbaugh & Feick (1994)

Culture - Okeefe, Massey et al. (2002)

Involvement - Krugman (1965), Cohen (1982), Andrews, Durvasula & Akhter (1990), Bei & Widdows (1999), Block (1982), Reynolds & Gutman (1984), Lehmann (1987), Kassarjain (1981), Westbrook & Fornell (1979), Slama & Tashchian (1985), Zaichkowsky (1985)

Tacit Knowledge - Reber (1993), Eraut (2000), Hedlund et al. (2003), Wagner & Sternberg (1985)

Environmental Influences (3.3)

Decision-making Process (2.4.2)

Engel, Blackwell & Miniard (1986), (Bettman, 1979), Oliver & Swan, 1989), Bettman, Johnson, & Payne (1990), Lynch and Ariely (1998), Laband (1991), Bettman (1979), Schmidt & Spreng (1996), Schmidt & Spreng (1996), Bettman, Luce & Payne (1998), Payne, Bettman, & Johnson (1993) , Loewenstein & Schkade (1999), West et al. (1999), Mandel & Johnson (1998), Beatty & Smith (1987), Punj & Staelin (1983), Srinivavsan & Ratchford (1991)

**Online Search
Online Purchase**

Medium Characteristics, (2.1, 3.3)

Internet - Ostry (1994), Glazer (1991), Strangelove (1994),Yerxa (1994), West et al.(1999), Edwards (2003), Yuan (2003), Trifts & Haubl (2003), Bakos (1997), Hoffman and Novak (1994), Li (2007), Werthner & Ricci (2004), Wagner & Turban (2002), Nash (1993), Blattberg, Glazer & Little (1994), Glushko, Tenenbaum, Meltzer (1999), Sweet (2001), McGaughey & Mason (1998)

Product/Service Characteristics, (2.1, 2.3, 3.3)

Travel & Tourism - Henderson (1997), Werthner & Ricci (2004), Guillebaud and Bond (1997), Ardissono (2003), Law, Leung & Wong (2004), Hudson et al. (2001)

Services - Zeithaml, Parasuraman and Berry (1985), Langeard & Eiglier, Lovelock (1983)

ODA Characteristics, (2.2)

Ma (1999), Bechwati and Xia (2003), Novak, Hoffman & Yung (2000), Jarvelainen and Puhakainen (2004), Haubl and Trifts (2000), Belkin (2000), Olson & Widing (2002), Guttman (1999), Bergmann and Cunningham (2002), Ariely (2000), Swaminathan (2003), Jacoby (1977), Maes (1994), Maes, Guttman, & Moukas (1999), Haubl, Murray, & Trifts (2003), Haubl & Murray (2003), Yuan (2003), Schafer (1999), Goldberg, Nichols, Oki and Terry (1992), Ariely, Lynch, & Aparicio (2004), Viappiani, Pu & Faltings (2002), Ansari, Essegaier & Kohli (2000), Lynch and Ariely (2000), Alba et al. (1997), Bakos (1997), West et al. (1999), Jarvelainen and Puhakainen (2004), Haubl, Dellaert, Murray, & Trifts (2004), Blom (2003), Ambite, et al. (2002), Barish, DiPasquo, Knoblock & Minton (2000), Knoblock (2003), Etzioni, Knoblock, Tuchinda &Yates (2003), Knoblock et al. (2008), Haubl and Dellaert (2004), Pu and Faltings (2000), Pu & Faltings (2001), Torrens, Faltings, Pu (2001), Pu & Faltings (2002), West & Broniarczyk (1998), Cohen & Areni (1991), Gershoff, Mukherjee & Mukhopadhyay, (2003), Tuchinda and Knoblock (2004), Knoblock et al. (2008)

Figure 7. Literature on Consumer Profile and Decision-Making Behavior

2.5   MARKET SEGMENTATION

Market segmentation has traditionally been accomplished using variables such as purchase and usage behavior, psychographics, demographics and geography. Extensive research has been done on segmentation in traditional markets. There are some useful insights of consumers in these markets that apply to the Internet marketplace.
For example, considering alternative methods and measures of segmentation such as lifetime value and long-term profitability of the customer has created multiple views of the same market (Wyner, 1995).

Segmentation research on the travel industry specifically is also useful. Goldsmith and Litvin (1999) studied Singapore consumers to find that light users of travel agents exhibited differences from heavy users. This volume segmentation of travelers shows that heavy users were more innovative and knowledgeable, more involved with vacation travel, and they were more likely to be opinion leaders.

Mo, Howard, and Havitz (1993) segmented travelers using an International Tourism Role (ITR) scale. Cohen's (1972) tourist roles are based on the degree to which tourists desire novelty or familiarity in their vacation.   Shoemaker (1994) segmented the US travel market according to benefits realized and proposed that the best way to understand consumers' motivations for vacation travel or benefits sought from a vacation destination is to study consumers' past travel behavior.

However, marketers are beginning to consider the uniqueness of online markets and are conducting research specific to the new media. Bhatnagar and Ghose (2002) segmented web shoppers, based on their purchase behavior across several product categories.
They then profiled the segments along the twin dimensions of demographics and benefits sought to show that benefits sought can provide more diagnostic information than mere descriptive demographic profiling.

Two distinct profiles of Web travel buyers, rookies and veterans, were discovered (Forrester Research, 2001) and questions remain about whether rookies differ from veterans on personal characteristics.   Various types of profiles emerge in different studies. From these, consumers can be categorized in terms of those relying primarily on affective or cognitive systems to evaluate vacation options with the use of an Online Decision Aid (ODA).   The cognitive oriented traveler prefers a utilitarian approach designed to save time and money, for instance. An affective oriented traveler, on the other hand, could be a value-expressive individual who will use an ODA to save their profile information and generate a personalized vacation.   Another affective oriented traveler, the Hedonic type, may find enjoyment using an ODA for 'vacation shopping'.
Wang and Fesenmaier (2004) studied the needs of consumers in online travel communities, and the driving factors for their participation in an online community.
Some of the constructs developed were hedonic needs including amusement, fun, enjoyment, entertainment, and functional needs including information, efficiency, and convenience.   These needs constructs proved valid for assessing travel community member needs.

There are numerous ways in which consumers of travel products could be segmented. Any of the above methods could be used or novel approaches resulting from this study might be useful. For example, segments could be obtained from the attitudes consumers form around the recommendations provided by an online tool. Also, as mentioned earlier, a marketer could segment the market in terms of consumers' intrinsic self-relevance. Alternatively, markets could be segmented on the basis of consumers' involvement or knowledge. Ultimately, the best approach is the one that most accurately describes consumers and enables a marketer to direct effective marketing programs at heterogeneous groups of consumers.

2.6   SUMMARY OF THE LITERATURE REVIEW

Changes in E-Commerce will influence consumers in the travel sector and marketers are well advised to monitor emerging technologies and consider whether these present opportunities or threats to their business operation.

The knowledge deficit with online tools used in travel includes a comprehensive model that explains the determinants of online leisure travel booking intention. This includes factors such as underlying motivations and how these differ among travel market segments, the interplay of beliefs, attitudes, prior experience with travel agents and websites, social support, knowledge and involvement. There is not a full understanding of how closely intelligent online agents used in leisure travel compare with travel agents in ways such as managing and processing information, the ability to influence consumers, and the capability of gaining the trust and loyalty of consumers.

Key issues addressed by the review include:

- Demonstrating how services marketing can explain the interactive experience between a consumer and a service provider.
- Explaining how consumers may utilize online tools in various ways and derive diverse forms of gratification.
- Stating how Engel's model is useful in understanding buyer decision processes.
- Understanding consumers' motivations for using the Web.
- Discussing various ways of segmenting travelers.
- Describing the travel and tourism industry and the role of travel agents in it.
- Analyzing a model that explains the communication process with a virtual agent.
- Contrasting the behavior of consumers in an online environment and how it differs from consumer behavior in a traditional offline environment.
- Outlining relevant elements of consumers' product knowledge and involvement.
- Identifying what is known about intelligent online agents, and how they can be used to control, manage, and process information.
- Assessing aspects of attitudes, beliefs and behavior and their importance in understanding intentions.
- Presenting numerous intelligent online aids and how they work to enhance the online shopping environment.

- Showing online aids can influence consumers and entice consumers to place their trust in online retailers and be loyal to them.

Relevant concepts were extracted from the literature that could assist in the formulation of a comprehensive Conceptual Framework. Such a framework will be used to outline the determinants of online leisure travel planning decision processes, the interplay of these, and how the determinants differ with various market segments. This will advance travel research and make a new contribution to the topic of E-Commerce.

3 PILOT STUDY

3.1   OVERVIEW OF METHODS

Three qualitative techniques were used, namely focus groups, semi-structured interviews, and case studies. Findings emerging from the qualitative research were used in conjunction with current literature to generate a theoretical framework. Specific hypotheses of the framework will be tested through a survey instrument in the quantitative component of this research.

Qualitative data analysis can play an important role in the initial discovery and explanation of consumer behavior and travel booking decision processes that have not been extensively studied by other researchers. Consequently, one of the main objectives in the qualitative research is to gain preliminary insights into decision problems that are specific to leisure travel planning that will help refine particular hypotheses before subjecting them to statistical analyses. Another reason this qualitative research method was chosen is that it is both economical and timely and thus suitable for the research project.

The quantitative methods used are outlined in sections 4.1 and 4.2. Such methods take the positivistic approach, the purpose of which is to test hypotheses that come out of the literature review and qualitative study. Social scientists use theories to predict behavior. An important role of the methodologist is to try to refine them, to see if they hold true under all conditions. It is through efforts to disconfirm theories that we extend our general knowledge of human behavior. One way to test a theory is to derive predictions or hypotheses from it and then test those hypotheses. Therefore, after the result of two focus groups, over forty semi-structured interviews, and nine case studies is presented, a Conceptual Framework is proposed in Figure 9 that incorporates the qualitative data and the review of literature. It is believed this Framework accurately describes the processes by which leisure travelers plan and purchase travel products with the assistance of online and offline aids and a part of this framework will be used to test selected hypotheses.

The qualitative research relied on the collection of detailed amounts of primary data from relatively small samples of subjects by asking questions. The first data came from a focus group, followed by data from semi-structured interviews, more data from a second focus group, and finally case studies. These stages of data collection occurred over a three-year time frame. A total of 71 subjects participated in the focus groups, interviews,

and case studies. Multi-phase studies such as these are a good way to maximize information gathering and this theoretical sampling technique is well accepted as a sound research method.

This grounded theory approach is justified since previous researchers have not yet identified all of the concepts and the relationships among them pertaining to how consumers plan and purchase leisure travel products with the assistance of online and offline aids.

Focus group research involves bringing together a small group of 6-12 people for an interactive and spontaneous discussion. Guided by a facilitator, an unstructured discussion lasts for about three hours. The moderator will encourage group members to talk in detail about their vacations and how they planned them. Many ideas, attitudes, feelings, and experiences emerge usually emerge through a session. The overall goal of the focus group is to give the researcher as much information as possible about how people regard traveling and travel planning. The success of focus group research depends on the group dynamics, the willingness of members to participate in the dialogue, and the moderator's ability to keep the discussion on topic. The fundamental idea of focus group research is that one person's response will elicit comments from other members, thus generating a spontaneous interchange among all the participants.

The initiation of the research began about 4 years ago when a travel website named DiscoverTheIslands.Com acted as a sponsor of the research. In order to encourage people to visit the website the company used a vacation giveaway that required contestants to submit some basic demographic and contact information in a Contest Entry Form. Over four thousand entries were received. Six contestants from the city of Seattle in the State of Washington were selected for the first focus group held in July of 2004.

The planned overall objective of this focus group was to understand the participants' perspective on issues, frame of reference, way of thinking, typical vocabulary when dealing with the topic of travel, and to test some questions that could be used for semi-structured personal interviews that would follow in August of that year. Some interviews were conducted by telephone, and others were held in two shopping malls. The focus group consisted of three men and three women including two couples. The age range of participants was fairly wide with one young person 20 years of age, and the oldest couple was in their early fifties. The three-hour session was recorded with audio and video equipment. The results of this focus group session are discussed in section 3.2.1.

As a qualitative technique, an interview involves an interviewer asking subjects a set of semi-structured, probing questions usually in a face-to-face setting. This setting could be the subject's home or a centralized interviewing location that is convenient for the subject. Interviews can also be conducted by telephone. In this data collection method the interviewer uses probing questions to obtain more data on the topic from the subject. Sometimes this means taking the subject's initial response and turning it into a question. The more a subject talks about a topic, the more likely he or she is to reveal underlying attitudes, motives, emotions, and behaviors. The interviewer should be able to articulate

the questions in a direct and clear manner so that the subject understands what he or she is responding to.

The overall research objective of the interviews was to probe into the assumptions, motivations, experiences and feelings that underlie the attitudes and opinions expressed by some focus group participants. Subjects gave permission to record the interviews using a tape recorder. In addition, all questions were arranged on a single sheet of paper with spaces after each question in order to make notes of interest such as the demeanor of an interviewee and other noteworthy remarks.

The sponsor, DiscoverTheIslands.Com, was interested in testing the 'island' theme of the Website. Another research goal concerned vacation destinations, specifically how consumers search for, organize and select a vacation destination, the types of vacations they like, and their preferences and needs during vacations. A third goal revolved around how consumers would like a travel website organized or structured and the features, tools or abilities they would like on a travel website. The final objective was to assess consumers' feelings and attitudes about ODAs such as their likelihood of using one, their perceived value and benefits of using such a tool, the anticipated effects of ODAs on consumer decision-making, customer loyalty and satisfaction. The specific questions asked of respondents can be seen in Appendix E.

A sample of residents was drawn from approximately 4,000 people who submitted a vacation giveaway Contest Entry Form on the travel website. Respondents were selected from contest entrants living in the metro Vancouver area of British Columbia and the metro Seattle area of Washington State. In addition, a number of respondents were solicited in two shopping malls in British Columbia by a sign that promoted the vacation giveaway. Appendix C shows an email letter that was sent to the managers of the shopping malls requesting permission to conduct interviews there. Forty-seven interviews were conducted over a three-week period.

After the interviews, data was transcribed from the tape recorder onto large sheets of flip chart paper. There is a practice of data reduction that inevitably takes place during this process but it is believed the technique captured the key information for the purposes identified in this study. The selected data was later keyed into a spreadsheet and then transposed so that all the responses of interviewees to each question could be viewed at the same time. This data display makes it easy to sort and sift through the material to identify similar phrases, patterns, themes, relationships between variables, and distinct differences between interviewees. Key phrases, themes, etc. were not coded ahead of time but they emerged through a grounded approach. Since this is an area previously unexplored by others in the ways indicated earlier, it was important to be very open to the responses of interviewees and therefore this inductive technique was used. Thus, the grounded approach seemed very appropriate.

The spreadsheet data display also made it easy to identify categories of interviewees, differentiation between categories, and the frequencies of phrases, themes, etc. Data was

clustered around the themes, categories, and phrases and arrived at the syntheses seen in section 3.2.2.

The questions posed in the focus group conducted in June of 2005 are shown in Appendix D. The aim was to compare and contrast how respondents view online and offline aids. A group of 9 people were selected given their experience with both online and offline travel booking and willingness to share their experiences. One of the respondents was a travel agent two years earlier and so she gave some useful perspectives. The session was held at a local community college on a Tuesday evening. This time slot made it more attractive for all participants to be present and the personal invitation by the moderator was a key factor as well.

All focus groups and interviews began with a preamble that defined the entire spectrum of thought on the issues at hand strongly implying that any and every position was as acceptable and respectable as any other.

3.2   FOCUS GROUP AND INTERVIEW RESULTS

3.2.1   Focus Group of 2004

Some of the themes that emerged from the session included: the desirability of travel packages, the suggestion that women preferred using the Internet for shopping more than men, and several recommendations for the design of a website.

Participants regarded travel packages as a trouble-free way to enjoy a vacation. With packages the traveler pays one amount and all costs are covered; there are no surprises. The only disadvantage stated was that a package tends to keep the tourist confined to a hotel property. Packages are more often purchased when travelers are unfamiliar with the destination, the language used in the country, or when the traveler has a particular budget in mind. Typically packages are chosen after the traveler has decided on the type of vacation desired and the activities they want to enjoy. Sometimes the package would be selected because a favorite activity was available at a specific destination.

Participants consult the Internet, travel agents, friends and relatives for suggested destinations and then they search for good deals primarily on airfare or hotels. Sometimes travelers also engage in an extensive research or planning process. This seems consistent with the research direction of others and the methods used by consumers to facilitate this consultation process electronically. Goldberg, Nichols, Oki and Terry (1992) conceived the concept called collaborative filtering that mimics word-of-mouth recommendations using the behavior and preferences of others. Researchers such as Viappiani, Pu and Faltings (2002) advocate improving these electronic recommendation systems to overcome any shortcomings.

It was suggested that women spend more time searching the Internet than men. They compare prices and check details thoroughly and then discuss the travel specifics with their partner. Men prefer a simple website that is easy to use. They desire a website

shopping experience to be similar to shopping in a retail store; they do not want to spend a lot of time looking for things and comparing prices.

Participants listed some desirable features of a travel website such as detailed customer reviews of hotels, a lot of color photos to help visualize the destination, hotel, culture and activities. They also would like the option of what they called a 'power user' mode that would provide many search options and very rich information. This mode is similar to how a sophisticated online decision aid would perform. They would be willing to pay for the use of such an aid if it clearly demonstrated how much it could save them. It is easy to envisage that online tools will become more powerful and sophisticated in time as digital goods can be discovered, tested, evaluated, purchased, and delivered in just a few minutes (West et al.,1999). For quick booking of travel options that do not require advanced search features however, participants want a 'quick booking' mode.

Participants objected to providing their personal data, and credit card information before the website demonstrates that it could meet their needs with the type of vacation desired. Consumers prefer to initiate an information flow process that entails requesting their permission to send them information on travel specials, using popup windows to display things of relevance to them, and emailing promotions to them. When permission is granted these interruptions may generate impulse purchases to the travel website without irritating customers. This understanding of consumers and the control of information flow is confirmed by Ariely (2000). Consumers value the high level of information control with electronic communication.

Some travelers would like the website to get them excited about doing something or going somewhere. Blom's (2003) research points to 'playful' users associating a recommendation system with an entertainment device. Lastly, participants indicated their fondness of loyalty and membership programs. They liked the idea of receiving rewards for their continued use of a website. These rewards could be in the form of travel deals or rebates on travel bookings. Participants would be willing to pay for a membership if it gave them access to a sophisticated ODA that could save them more than the cost of the membership. Haubl and Trifts (2000) suggest intelligent agents play a role in the personalization of a customer's interface with the online merchant so that a personalized shopping environment can potentially increase customer loyalty.

3.2.2   Interviews of 2004

A synthesis of the responses from interviews as well as the semi-structured interview question format can be seen in Appendix E.

Respondents could be placed in essentially five groups according to the benefits and effects they experience while using an ODA (questions 12 and 13). These groups are those who say:

1) The ODA will save time & money; convenient, removes hassle.
2) I have the ability to customize my trip; personalized travel, design my

own package.
3) ODA is accessible, convenient, helpful 24 hours a day, 7 days a week as compared to travel agent.
4) I will allow the ODA to influence me, give me ideas.
5) ODA intrigues me, makes me curious, sounds trendy and so I will use it.

An insight when comparing these groups with the responses provided in questions 1 and 4 is that for those who travel on the spur of the moment, an ODA could provide worry-free, planning assistance. These travelers want to visualize their vacation and see what they are getting into. This is consistent with the findings of Haubl & Trifts, (2000) who report online tools assist consumers in decision-making, and improve the quality of their decisions. Also, respondents will allow the ODA to influence them or give them ideas. This makes sense as they are the types of people who really do not organize their vacation.

For other categories such as those consumers who organize a vacation primarily around time available off work (time oriented), or around a destination (destination-oriented), the ODA is expected to give them the ability to customize a trip through personalized travel, or to design their own package. Again this is reasonable as these consumers are particular with the way they organize a vacation and want it to be as customized as possible.

For the budget-oriented category of traveler they expect the ODA will save them time and money. This is logical. Forsyth, Lavoie, and McGuire (2000) referred to consumers who desire to save time as simplifiers and discovered they comprise 29 percent of Internet consumers and over 50 percent of all online transactions. The activity-oriented traveler appreciates saving time & money as well, as does the destination-oriented traveler but time and money saved seems to be most important to the budget-oriented traveler based on the frequency of keywords mentioned by interviewees. Bellman, Lohse & Johnson (1999) claimed consumers value the Web's time savings ability over its cost savings capability.

An interesting insight came from those travelers who organize a vacation essentially around a travel agent's recommendations. The value they see and the expectations they have for an ODA is for it to perform like a travel agent by making trip planning easier, providing suggestions, answering any question, providing one-stop shopping, etc. Bechwati and Xia (2003) found that the consumer considers an ODA an effort saver since they recognize if it were not for an ODA they would have to do the work themselves. Moreover, Haubl and Trifts (2000) described one of the key functions of electronic decision aids as that of making recommendations. The synthesized groups from question 6 seem to confirm findings from questions 12, 13, 1, and 4.

And finally, the notion that online intelligent decision tools (machine intelligence) could simulate human intelligence interests people for a variety of reasons. Interview data indicates respondents believed using an ODA would make them more satisfied with a vacation choice; they would trust an online tool that exhibited intelligence. Respondents appreciated the intelligence of such tools. Consequently, respondents would be inclined

to use the ODA often. ODA's aroused the curiosity of respondents as they were surprised by how well AI could be engineered to understand them and meet their needs in planning a vacation. People are surprised with advancements in science and technology in general and how technology can empower humans and transform their lives and society. Many people are captivated by technological innovations such as AI applications of various types and machine intelligence. They recognize, however, that such tools, applications and machine intelligence are really exhibiting human intelligence since it is humans who design these alternate forms of intelligence. Lastly, people eventually become accustomed to using intelligent systems and then the agents are no longer regarded as intelligent.

The interviews were useful as they suggested some market segments and how they will use ODAs in different ways.

<center>3.2.3   Focus Group 2005</center>

A key revelation from this 3-hour session were that respondents believe the commissions of travel agents have been reduced over the past few years and so agents' services have been curtailed as well. The Financial Post Daily, as well as other publications, has documented the account of reductions in travel agents' commissions. Furthermore, travel agents used to have access to information that the public could not see but that is no longer the case. Respondents feel empowered by the wealth of travel information on the Internet and their ability to book their travel online. The combined effect of the perception that travel agency services have diminished and that consumers are now able to easily book travel products and services has arguably weakened the image and profile of travel agents.

However, there is some hesitancy to abandon the use of travel agents altogether. Some respondents were reluctant to buy an expensive travel product such as a cruise online with a travel website that is unknown to them. There is some skepticism about websites that online merchants have yet to overcome. For instance, respondents point out that consumers really do not know whom they are dealing with on the Internet. One respondent said, "It is harder to set up a brick-and-mortar scam than an online one." A human contact in a traditional store makes a consumer feel as though the consumer knows whom he or she is dealing with. Law, Leung and Wong (2004) reported travel agencies as being better than travel websites in providing the human touch. In addition, it seems some consumers would not solicit an unknown website or a brand name they did not recognize to save a small amount of money but will be more likely to do so if there was a large cost advantage with the online option. In that situation, a consumer will spend a considerable amount of time researching the online store before purchasing. This is especially the case if consumers feel that they will return to the website in the future; they can then justify spending a lot of time checking out the online store.

Respondents suggested travel agents could influence their travel plans considerably by demonstrating their experience, such as suggesting leisure travelers book hotels on weekends since prices are often lower then. In other situations, agents can locate

information for their customers such as travel brochures or catalogs or information from foreign tourism boards, etc. These efforts are recognized and valued by consumers. This is one way in which agents can earn the trust and loyalty of customers. Bettman (1979) and other researchers documented the consumer's assessment of effort expended searching for information. Notwithstanding these efforts of agents, participants will still look for information on their own. An example given was some specific information about the booking of a cabin on a cruise-ship that a participant discovered from a friend who had been on a cruise rather than from their agent. One respondent described himself as a 'research hound' and it is suspected this may apply to a surprisingly large number of consumers. Perhaps this respondent would be classified by Bellman, Lohse & Johnson (1999) as having a wired lifestyle. Respondents estimate that online consumers are not particularly loyal to websites, but if the site is a good resource, has a favorable reputation, and consistently lower prices and superior selection, they will return to that online merchant.

The amount of time some respondents were willing to spend online is dependent on their discretionary time. For other respondents it is really the convenience of online shopping at any time that attracts them even if they may spend more time using the Internet to research and plan a vacation. Cost is not an issue so much for these respondents either. Another factor that influences the amount of time spent online is the degree of involvement in the product being researched. One respondent said she would spend a lot of time looking for books online but not travel products because she has an interest in books and not in travel as much. Another respondent who is an extra large sized gentleman will search for clothes online since it is difficult for him to find extra large clothes in local retail stores.

Participants feel that a travel website can perform as well or better than a travel agent in learning about a traveler's expectations and providing appropriate recommendations. This is a bit surprising since the former travel agent in the group said it could take hours of conversation with a client to really know the client's preferences and desires. It was agreed by all participants that a website has more potential to "lead you by the nose" than a travel agent because it is a mechanical, sterile system that features a lot of "eye candy" as one participant put it. However, focus group members reported they do not mind being guided along or led because it could save them some money. It was noted that people do not respond well to pressure tactics but they expect that from any type of retailer whether the business is online or offline. Hudson et al. (2001) while using mystery shoppers at travel agencies point to some manipulative practices of agents.

Some members would resort to a website to book short haul travel, or travel that is straight forward or inexpensive. Law, Leung and Wong (2004) also reported travelers' belief that short-haul trips are better suited for online booking. There are some situations where online options are not the favored choice. One example is when there is a special travel situation that websites cannot deal with such as a family of 5 that requires a special arrangement of beds. Travel websites are typically not equipped to manage special scenarios as this.

The Internet is regarded as a significant resource that enlarges the shopping opportunities for consumers. Participants feel that the level of control they have over the Internet compares with that of other media such as television or print media. The former travel agent said that the Internet has become an agent's best resource. With the Internet she could show her clients a lot more to give them a better idea of the vacation experience they could expect. It helped her sell more. She would refer her clients to it in addition to providing them with brochures. Brochures help bring clients back to her she said. Some participants felt that the Internet could not get a customer excited about a trip like an agent can. Despite its large size the Internet does not compensate for this.

Some of the gratifications that respondents derive from using the Internet include finding what they want due to the vast amount of information, goods and services available online. Also they can make comparisons, enjoy information and visuals, customize their purchases, involve family members, and research things themselves. Respondents raised these points during the focus group session and this feedback seems consistent with the information respondents provided through the form shown in Appendix F.

3.3   CASE STUDIES

The purpose of conducting case studies was to expand and generalize theories by answering the primary questions of how and why consumers research and book travel products online versus through a travel agent. Also, contextual conditions were examined such as the motivations of respondents, their prior experience and involvement with travel and the Internet. The case studies were useful in explaining presumed causal links between a number of variables that the literature review, focus groups, and interviews uncovered. Nine people were included in the case studies with an age range from 19-59 representing different stages in the family life cycle. Some common responses among those in a similar demographic group were noted, as well as differences in the travel planning decisions between case respondents.

3.3.1   Factors Associated with the Product Category serve as Moderators

It seems when faced with uncertainty or lack of experience, respondents generally attempt to reduce risk by searching for information. Information search could be conducted on the Internet or through a travel agent or friends. Some respondents regarded online sources of information such as hotel reviews as being equally reliable to a travel agent's opinion. This is consistent with the findings of Klein (1998), Zeithaml (1988), Bei, Chen & Widdows (2004).

According to Klein (1998), search products have product attributes for which consumers prior to purchase can acquire full information. Examples of search products are music CDs or books. Experience products such as travel packages on the other hand, have product attributes that cannot be known until purchase and use of the product. It could also be that information search with experience products is more costly and/or difficult. When comparing the quality of the product, the intrinsic attributes of search products are easy to access, concrete, and more objective and thus consumers are not inclined to rely

much on the recommendations of others. However, in order to assess the quality of experience products consumers utilize extrinsic cues (Zeithaml, 1988). For example, the information for selecting a travel package is more abstract and experience oriented. As a result, the recommendations of others would be used more for experience products than search products. Quality assessments require gathering information from independent sources such as web travel articles, discussion with other consumers, seeking opinions from price and shopping comparison portals and wiki sites. Information search is thus regarded as an alternative to experience. Furthermore, Klein (1998) concluded that because the information of 'experiencing' is available and abundant online, interactive media such as the Internet could possibly transform traditional experience products into search products.

Bei, Chen & Widdows, (2004) compared the importance of all the Internet information sources between search and experience products, and found that online information sources from other consumers, namely consumers' opinions and consumers' ratings, were more important for experience products than search products.

Dabholkar and Bobbitt produced testable research propositions incorporating important notions about product category; some of these moderators are shown in the Conceptual Framework of this research report (Dabholkar & Bobbitt, 2001).

3.3.2   The Internet is Empowering to some but Overwhelming to others

The youngest respondents (18-20 year olds) in particular, enjoy the independence the Internet provides. There is a sense of empowerment the Internet gives them and they take pleasure in being able to do what a professional travel agent does. Empowerment includes the ability to take some control over the situation. Dabholkar (1996) found control as an important determinant of using technology-based self-service. The Internet is certainly a self-service option for consumers and it offers users a sense of control that they don't have to wait to use. These young respondents however, recognize that travel agents are more knowledgeable and have more experience and so they will engage agents when necessary. One respondent indicated she would use the Internet before using the telephone, and regards herself as quite computer literate.

In contrast, the oldest respondents expressed some anxiety, fear and difficulty using the Internet. Information is difficult to find and the abundance of it seems to overwhelm and confuse them to some extent. One respondent said he had no sense or desire for empowerment through the web, rather the Internet is "big and impersonal", and that he does not trust it but he trusts travel agents and appreciates the effort they put into planning and booking his travel. Another older respondent said, "travel agents have an opinion but travel websites don't". He and his spouse seem to enjoy the human interaction and "human touch" provided by a travel agent and that is it more "reassuring" than using a travel website. Certain customers need to interact with service employees rather than a machine (Dabholkar, 1996).

Regardless of their apprehensions with the Internet, these older respondents still use it but only for simple travel situations or if they are very involved in a product purchase. For instance, one respondent builds old-fashioned radios as a hobby and they require vacuum tubes, which he cannot find locally, so he is willing to purchase electronic parts from E-Bay vendors and other suppliers he locates on the Internet. He also believes the Ebay website is easy to use. Another respondent collects guitars and she is willing to order guitars online from as far away as South America because it is more convenient than purchasing at a retail store in South America while on vacation and having to travel back home with such a bulky item. She also enjoys saving money due to the favorable exchange rates between Canada where she resides, and the South American countries from which she imports guitars. Highly involved consumers are interested in all kinds of information about a product and the Internet is naturally a complementary information channel for them (Bei & Widdows, 1999). Consequently, highly involved consumers could be expected to pay attention to key aspects of a website (Hoffman & Novak 1996).

3.3.3   The Relationship of Knowledge

Less experienced travelers seem to be more dependent on travel agents in many ways. Respondents who were first-time visitors to travel locations reported the tendency to use advice from travel agents and other knowledgeable people more so than more experienced respondents. A couple of respondents travel a fair amount for business purposes. They confirmed that travel knowledge gained from business trips helps them plan a vacation. This is consistent with Eraut (2000) and his research in the field of tacit knowledge.

3.3.4   The Internet is Useful and Easy to use as a Self-Service Technology

Even older respondents will set aside their reservations about using the Internet when they perceive the Internet to be useful or easy to use. Respondents said they would search for information on the Internet hoping more information will help them make a better purchase decision. Consequently, if the Internet were perceived to provide practical value it would be used more readily. Bei, Chen & Widdows (2004) found perceived usefulness and ease-of-use of the Internet accounts for a lot of the frequency of online information use. They point out these two concepts are related to the acceptance of technology systems, of which the Internet is a subset. Other researchers showed that perceived usefulness had stronger direct and indirect influences on behavioral intention, while perceived ease-of-use had weaker influences on attitude formation (Davis, Bagozzi, & Warshaw, 1989). Furthermore, ease of use and fun were found to be important contributors to using technology-based self-service (Dabholkar, 1996: Davis et al., 1989). Curran and Meuter also identified these factors as influencing a customer's decision to use available technology (Curran & Meuter, 2005). Thus, perceived usefulness and ease-of-use of the Internet seem to be strongly tied to the usages of the Internet by all consumers, and this study confirms it applies to older respondents as well.

3.3.5   The Impact of Motivation

The self-confidence younger respondents exhibited in their knowledge and comfort using the Internet seems to contribute to their enjoyment of it. One respondent said she's never had a negative experience with the Internet. The relationship between confidence and a fun experience could be expected to encourage continued use of the Internet, and this is borne out by research. Self-efficacy or the assessment a consumer has of his or her ability to perform a task was found to be a major factor underlying intrinsic motivation (Davis, Bagozzi, & Warshaw, 1989). In contrast, consumers with a high need for interaction with service employees are expected to lack the intrinsic motivation to use technology-based self-service.

Numerous researchers including Joines, Scherer & Scheufele (2003), Korgaonkar and Wolin (1999) suggest motivations play a greater role in Web usage than do demographics. For instance, respondents from all age groups who did not regard the Internet as providing a venue for social interaction did not participate in travel forums or chat rooms. Likewise, all respondents who described themselves as being time-starved were more inclined to contact a travel agent to research and book a trip. All respondents with transaction-based security concerns about using the Web are more likely to contact a travel agent to book travel. Not surprisingly, economic motivations of saving money by shopping online were common to all respondents.

3.3.6   The Influence of Demographics

Demographics are likely to continue to play an important role in predicting online behavior. Respondents with school aged children found travel websites often unable to provide the information needed or allow booking to accommodate a family. The requirement for multiple seats often means fewer flight options could be found online, for example. Using bed and breakfast establishments are desirable as they provide a home atmosphere that is more personal and secure when traveling with children than afforded by typical hotel facilities. As a result, travel agents are consulted to locate B & Bs and flights when traveling with family members.

3.3.7   Consumer Beliefs and Values

All respondents exhibited beliefs about travel agents and travel websites and these influenced their motivations to use one or the other or both to research travel options, and select one primary channel to book travel. These beliefs were formed as a result of prior experiences with a travel agent or website, promotional messages received from them, and the opinions of friends and family members.

Respondents more likely to research and plan extensively with online and offline aids are those with a disdain for novelty and surprise. This appears to be the older respondents. The opposite seems true for younger respondents. Hyde's (2008) tour planning research confirms this idea. Hyde's paper also supports the notion that the time tourists spend

consulting travel guidebooks, friends and relatives, and word-of-mouth advice increases confidence, encourages the traveler to be more independent of a fixed tour itinerary, and reduces the need for pre-vacation accommodation booking.

Both the qualitative data collected and extracts from the Literature Review gave insights for building a Conceptual Framework that can be used to help predict consumer behavior in the marketplace.

Figure 8 exhibits environmental influences on consumer decision-making. Contributions of this study include:

- A comprehensive Conceptual Framework that outlines the determinants of online leisure travel planning decision processes, the interplay of these, and how the determinants differ with various market segments.

- Market segmentation using socio and psychographic criteria such as social acceptance, consumers' involvement, knowledge, motivation, along with demographic dimensions.

- Models that can help predict consumer behavior in the marketplace.

Consumer Profile, (Section 2.4)

Motivation - Stafford & Gonier (2004), Forsyth, Lavoie & McGuire (2000), Payne, Bettman & Johnson (1993), Schmidt & Spreng (1996), Babin, Darden & Griffin (1994), Cacioppo & Petty (1982), McGuire (1974), Korgaonkar & Wolin (1999), Eighmey & McCord (1998), Ko, Cho & Roberts (2004), Joines, Scherer & Scheufele (2003), Davis, Bagozzi, & Warshaw (1989)

Attitude & Belief- Trafimow & Sheeran (2004), Zimbardo & Ebbesen (1970), Davis, Bagozzi & Warshaw (1989), Fishbein (1967), Fishbein & Raven (1962), Fishbein (1962), Lord (2004), Asch (1940), Bellman, Lohse & Johnson (1999), Ajzen & Fishbein (1980)

Product Knowledge - Brucks (1985), Rao & Munroe (1988), Duncan & Olchavsky (1982), Johnson & Russo (1984), Punj & Stalein (1983), Park & Lessig (1981), Brucks (1985), Furse, Punj & Stewart (1984), Guttman (1982), Young & Feigen (1975), Mehrotra & Palmer (1985), Walker & Olson (1981), Celsi & Olson (1980), Park, Mothersbaugh & Feick (1994)

Culture - Okeefe, Massey et al. (2002)

Involvement - Krugman (1965), Cohen (1982), Andrews, Durvasula & Akhter (1990), Bei & Widdows (1999), Block (1982), Reynolds & Gutman (1984), Lehmann (1987), Kassarjain (1981), Westbrook & Fornell (1979), Slama & Tashchian (1985), Zaichkowsky (1985)

Tacit Knowledge - Reber (1993), Eraut (2000), Hedlund et al. (2003), Wagner & Sternberg (1985)

Environmental Influences (3.3)

Klein (1998), Zeithaml (1988), Bei, Chen & Widdows (2004)

Decision-making Process (2.4.2)

Engel, Blackwell & Miniard (1986), (Bettman, 1979), Oliver & Swan, 1989), Bettman, Johnson, & Payne (1990), Lynch and Ariely (1998), Laband (1991), Bettman (1979), Schmidt & Spreng (1996), Schmidt & Spreng (1996), Bettman, Luce & Payne (1998), Payne, Bettman, & Johnson (1993) , Loewenstein & Schkade (1999), West et al. (1999), Mandel & Johnson (1998), Beatty & Smith (1987), Punj & Staelin (1983), Srinivavsan & Ratchford (1991)

Online Search
Online Purchase

Medium Characteristics, (2.1, 3.3)

Usefulness & Ease of Use - Bei, Chen & Widdows (2004), Davis, Bagozzi & Warshaw (1989), Dabholkar (1996), Davis et al. (1989), Curran & Meuter (2005), Hyde (2008),

Self-service - Dabholkar (2006)

Internet - Ostry (1994), Glazer (1991), Strangelove (1994),Yerxa (1994), West et al.(1999), Edwards (2003), Yuan (2003), Trifts & Haubl (2003), Bakos (1997), Hoffman and Novak (1994), Li (2007), Werthner & Ricci (2004), Wagner & Turban (2002), Nash (1993), Blattberg, Glazer & Little (1994), Glushko, Tenenbaum, Meltzer (1999), Sweet (2001), McGaughey & Mason (1998)

Product/Service Characteristics, (2.1, 2.3, 3.3)

Travel & Tourism - Henderson (1997), Werthner & Ricci (2004), Guillebaud and Bond (1997), Ardissono (2003), Law, Leung & Wong (2004), Hudson et al. (2001)

Services - Zeithaml, Parasuraman and Berry (1985), Langeard & Eiglier, Lovelock (1983)

Product Category- Klein (1998), Zeithaml (1988), Bei, Chen & Widdows (2004), Dabholkar & Bobbitt (2001), Dabholkar (1996), Schulz (1994), Tranter, Stuart-Hill & Parker (2009)

ODA Characteristics, (2.2)

Ma (1999), Bechwati and Xia (2003), Novak, Hoffman & Yung (2000), Jarvelainen and Puhakainen (2004), Haubl and Trifts (2000), Belkin (2000), Olson & Widing (2002), Guttman (1999), Bergmann and Cunningham (2002), Ariely (2000), Swaminathan (2003), Jacoby (1977), Maes (1994), Maes, Guttman, & Moukas (1999), Haubl, Murray, & Trifts (2003), Haubl & Murray (2003), Yuan (2003), Schafer (1999), Goldberg, Nichols, Oki and Terry (1992), Ariely, Lynch, & Aparicio (2004), Viappiani, Pu & Faltings (2002), Ansari, Essegaier & Kohli (2000), Lynch and Ariely (2000), Alba et al. (1997), Bakos (1997), West et al. (1999), Jarvelainen and Puhakainen (2004), Haubl, Dellaert, Murray, & Trifts (2004), Blom (2003), Ambite, et al. (2002), Barish, DiPasquo, Knoblock & Minton (2000), Knoblock (2003), Etzioni, Knoblock, Tuchinda &Yates (2003), Knoblock et al. (2008), Haubl and Dellaert (2004), Pu and Faltings (2000), Pu & Faltings (2001), Torrens, Faltings, Pu (2001), Pu & Faltings (2002), West & Broniarczyk (1998), Cohen & Areni (1991), Gershoff, Mukherjee & Mukhopadhyay, (2003), Tuchinda and Knoblock (2004), Knoblock et al. (2008)
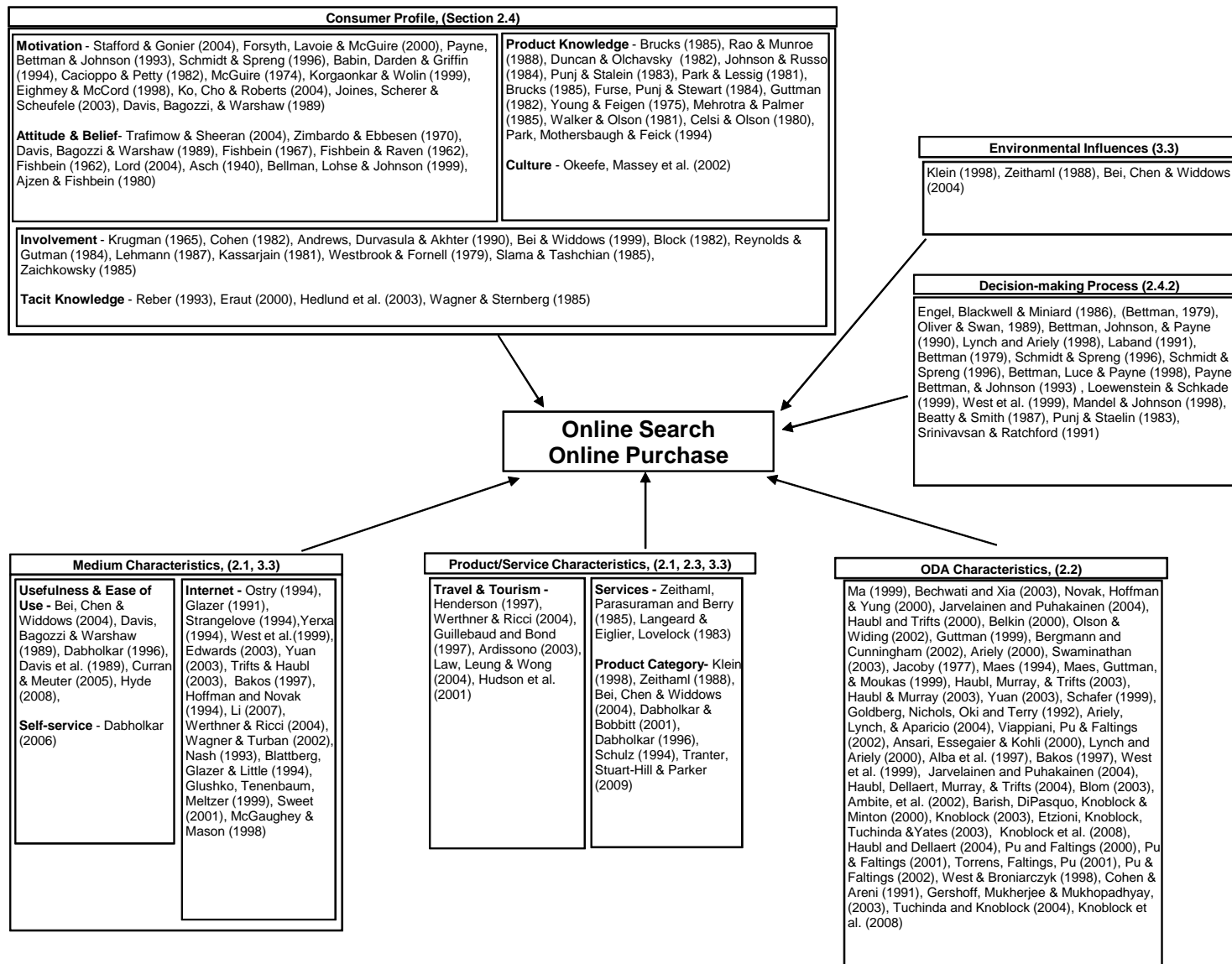
Figure 8. Environmental Influences on Consumer Decision-Making.

4 CONCEPTUAL FRAMEWORK AND METHODOLOGY

The qualitative research and review of literature aims to help identify all of the factors that affect leisure travel planning decision processes. The purpose of the subsequent quantitative research will be to examine how these factors differ among market segments and how the factors affect online travel booking intention. The reason for this choice is that the online decision process concerns a travel website the most when it comes to mapping out a strategy in the competitive marketplace. When a travel website understands how the various factors contribute to consumers' decisions to use an online aid for planning and purchasing travel products, it will be better able to target specific consumers and meet their needs.

As in the research of Yoh (1999), the theory of reasoned action (TRA) proposed by Fishbein and Ajzen (1975; Ajzen & Fishbein, 1980) and innovation adoption theory provided the core structure of the framework shown in Figure 9 below, and it is a good starting point. Some modifications to this framework were made to suit the unique dynamics of the travel product and the buying behavior of consumers. This contrasts with Yoh's model that is used to evaluate apparel shopping online. One of the primary considerations for instance, is the fact that most travel products are large ticket items usually requiring much thought, knowledge, and involvement so that consumers become engaged in a planning or researching process before buying or booking a travel product. Thus, information search and plans often take place before purchases. Participants in focus groups, interviews and case studies often raised this topic of the desire to research. Other researchers such as Hyde (2008) uncovered a similar dynamic. Hyde tested a model of pre-vacation decision-making and demonstrated three interrelated but unique stages including information search, plans and bookings. Tourists search for travel and destination information, make a plan of the vacation, and then book components of the vacation. Hyde also makes the point that many tourism researchers use information search and vacation planning interchangeably but rarely has the relationships between the three stages been explored. Thus, the Conceptual Framework incorporates the act of searching that sometimes precedes purchasing travel products.

Numerous researchers, Korgaonkar and Wolin (1999), Ko, Cho & Roberts (2004), and others assessed the importance of motivation to use the Internet, and Yoh (1999) acknowledged the value of including the construct of motivation in future research. Qualitative research findings in this report also support the inclusion of motivation. Consequently, Uses and Gratifications Theory proposes the addition of motivation as one of the determinants in the Conceptual Framework.

The existence of moderators between attitudes and intention were considered by Dabholkar & Bobbitt (2001), and Dabholkar (2006). A discussion of the impact of experience versus search goods was included in the Literature Review of this study. These moderators are shown on the Conceptual Framework. Dabholkar (2006) also evaluated propositions concerning the attitude consumers have toward self-service

technology. In addition, situational influences through the Theory of Planned Behavior is shown to impact on actual online behavior, and The Theory of Reasoned Action is expected to provide logical explanations of how intention to shop through the Internet will have a direct positive effect on Internet shopping behavior. These elements are also shown in the Conceptual Framework.

Lastly, the determinants of knowledge and involvement were outlined in the Literature Review and they surfaced as key concepts during the qualitative research.

Therefore, the Conceptual Framework in Figure 9 emerged from analyses of the qualitative data collected and the current readings on the many factors that affect online behavior described in the Literature Review. The presumptions made from the Framework are that a consumer can plan their travel with an online aid or with an offline aid, and a third option is to plan their leisure travel with the assistance of both an online and offline aid. In addition, a consumer can purchase a travel product with the guidance of an online aid or offline aid. The arrows in the diagram illustrate these alternatives. There are two additional scenarios demonstrated in the Framework. They include the option of no purchase by the consumer or the choice to use neither an online nor an offline aid. The latter situation could occur when a traveler will go somewhere without any needed assistance. For instance, a traveler may decide to visit a relative and will simply drive to the destination. Furthermore, the factors that shape the choice of aid a consumer uses to plan or purchase a travel product are the degree of influence an aid has on the consumer, which is probably related to the amount of trust the consumer places in the aid, the level of the consumer's product knowledge and involvement, the consumer's motivations and gratifications, and the consumer's demographics.

It is beyond the scope of this study to test all aspects of the Conceptual Framework but it is a useful framework to explain the dynamics of decision processes as they relate to purchases of travel products.

One of the quantitative analyses that will be used in analyzing data gathered from a survey instrument is logistic regression. Regression methods are important parts of any data analysis that seeks to describe the relationship between a response variable and one or more explanatory variables. In the last decade, logistic regression has become a standard method of analysis when the outcome variable is discrete, that is, having two or more possible values. The goal of any model-building technique is to find the best fitting and parsimonious, yet reasonable model to describe the relationship between the dependent variable and a set of independent variables state Hosmer and Lemeshow (2000). Given the interest is essentially in the interplay of the main variables that lead to online booking intention, it was decided to initially focus the model building exercise around seven key research questions. These questions and their related hypotheses are shown in section 4.1 below. Consequently, key hypotheses from the parsimonious component of the Conceptual Framework that point to online travel booking intention, which is the primary focus, will be selected for testing in the logistic regression analysis that follows later in this study. What results from this analysis will be later referred to as Model 1. These key elements and hypotheses are shown in Figure 10 below.

The Conceptual Framework includes the determinants of online and offline leisure travel planning decision processes. After identifying the factors, the focus is on how certain determinants combine to make consumers use online tools as this is of greatest interest to the sponsor, DiscoverTheIslands.com. The Framework may also be used to test hypotheses around the use of both online and offline planning and purchasing at a later date as future research.
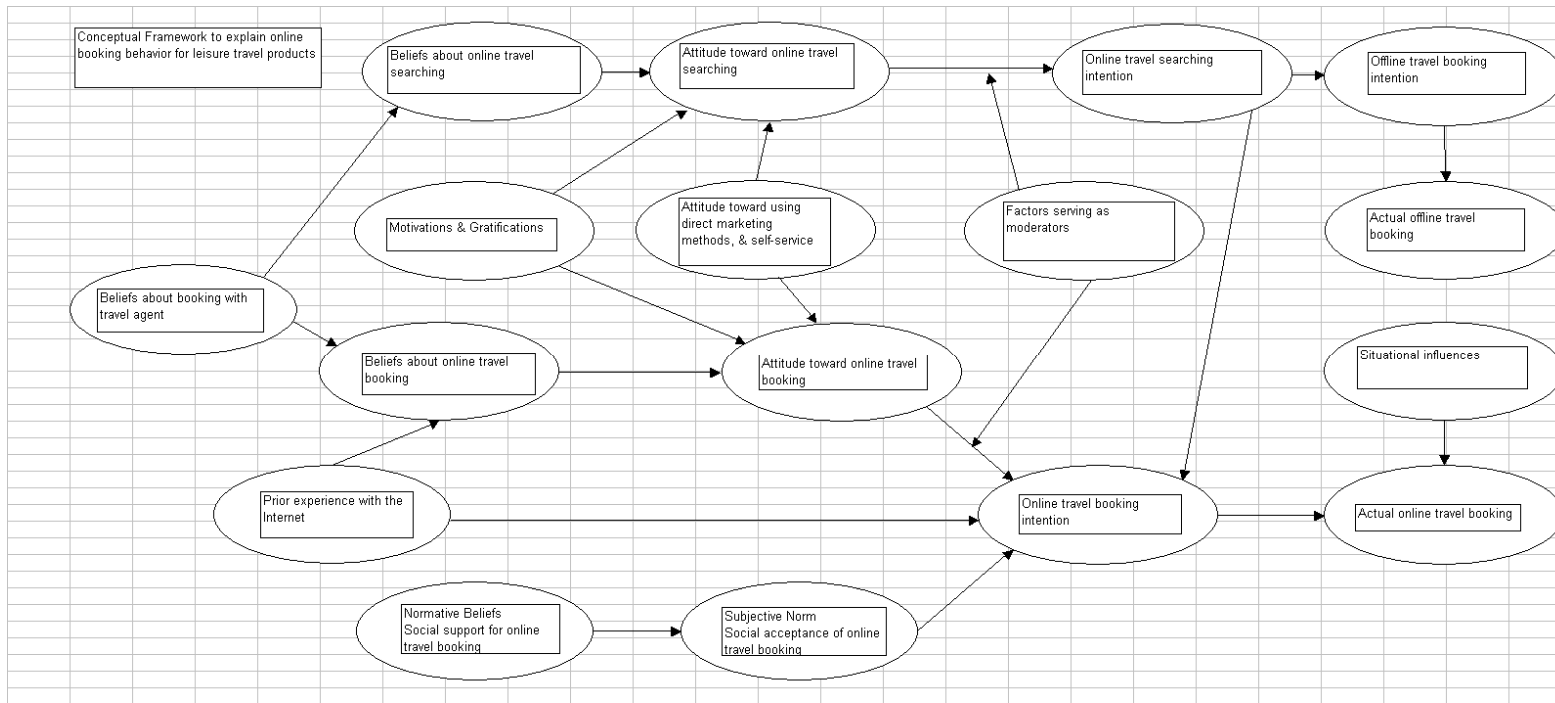
Figure 9. Conceptual Framework Explaining Purchases of Leisure Travel Products.

4.1   HYPOTHESES AND RESEARCH QUESTIONS

Figure 10 shows the portion of the framework that will be used for generating hypotheses to be tested through logistic regression featured in Model 1 and illustrated in section 5.10. Recall, these determinants emerged from theoretical frameworks consisting of the theory of reasoned action and innovation adoption theory.
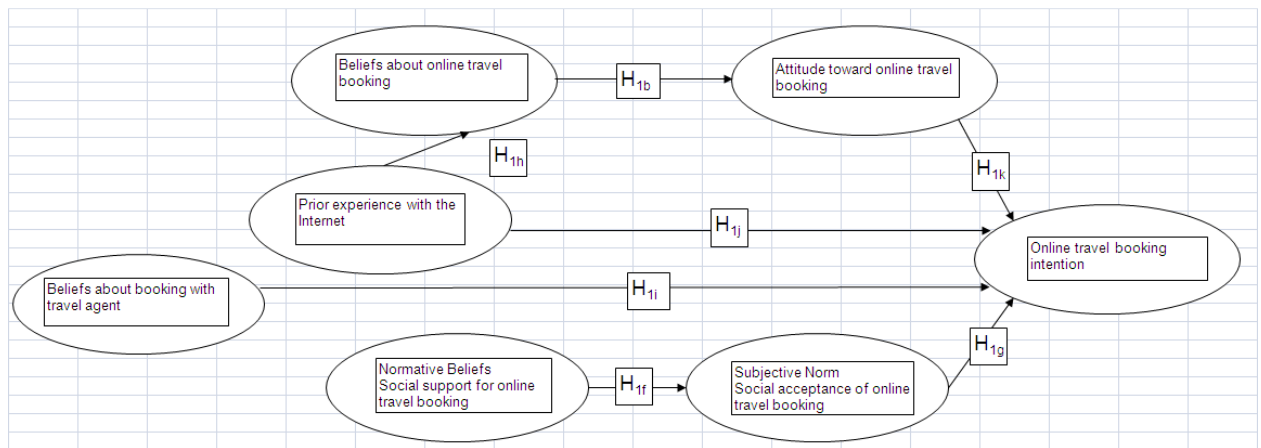
Figure 10. Parsimonious Model for Logistic Regression Analysis

The research questions and accompanying hypotheses to be tested are as follows:

1b. How do consumers' beliefs about online travel booking influence their attitude toward online travel booking?

H1b   Consumers who have more positive beliefs about online travel booking will have a more positive attitude toward online travel booking than consumers who have less positive beliefs about online travel booking.

1k. How do consumers' attitudes toward online travel booking affect their intention to purchase travel products online?

H1k   Consumers with a more positive attitude toward online travel booking have greater intention to purchase travel products online than consumers who have a less positive attitude toward online travel booking.

1f. How does a consumer's beliefs about social support for online travel booking impact acceptance of online travel booking?

H1f.   Consumers who have more social support for online travel booking will perceive more social acceptance of online travel booking than consumers who have less social support.

1g. How does a consumer's perceptions of the extent to which significant referents approve of Internet use for online travel booking (subjective norm) affect online travel booking intention?

H1g.   A consumer's perceptions of the extent to which significant referents approve of Internet use for online travel booking will positively affect prediction intention to use the Internet for travel booking.

1h. How do consumers' prior experience with the Internet influence their beliefs about online travel booking?

H1h   Consumers with more prior experience with the Internet and Internet travel will have more positive beliefs about online travel booking than do consumers who have less prior experience with the Internet.

1i. How do consumers' beliefs about travel agents impact their decision processes?

H1i.   Consumers who have more positive beliefs about travel agents will have lesser intention to purchase travel online than do consumers who have less positive beliefs about travel agents.

1j. How do consumers' prior experience with the Internet influence their online travel booking intention?

H1j   Consumers who have more prior experience with the Internet and Internet travel will have greater intention to purchase travel online than do consumers who have less prior experience with the Internet.

It will also be useful to determine the impact of other factors contributing to the behavior of consumers. These additional factors emerged from the qualitative research, literature review and include motivation and gratification theory. Therefore, other research questions of interest are: 1) Among consumers who purchase leisure travel online, what level of product knowledge and involvement do they have?; 2) How might ODAs influence consumers in their leisure travel planning decision process?; 3) Among consumers who purchase leisure travel online, what underlying motivations prompts this choice of purchase?; 4) How do the gratifications and motivations differ among market segments of those who purchase online? As a result, data consisting of the variables knowledge, involvement and motivation and how they impact online booking intention will be analyzed using logistic regression as well. Results from this analysis will be later referred to as Model 2.

And, finally there are some research questions around demographic dimensions. What significant differences exist in terms of age, gender, education, occupation, or family income of those consumers who do and do not purchase leisure travel online? Spearman's Rank Order Correlation and the Kruskal-Wallis test will be employed to help

answer these questions. If there are significant demographic predictors of online booking intention they will be included in a third logistic regression model, Model 3, which will utilize the most important variables from Models 1 and 2.

Hypotheses

H2a   Age is negatively related to intention to book travel through the Internet.
H2b   Level of education is positively related to intention to book travel through the Internet.
H2c   Level of household income is positively related to intention to book travel through the Internet.
H2d   Gender and purchase behavior are independent of each other.

4.2   SURVEY INSTRUMENT

An online survey questionnaire shown in Appendix G was used to determine how the various factors affect travel planning and purchasing decisions. Respondents were invited by various businesses that expressed an interest in the research including The Prestige Hotels & Resorts, Budget Car Rentals, The Kettle Valley Steam Railway, The Fintry Queen boat charters, and DiscoverTheIslands.com.

Thirty five questions were asked to assess prior experience with computers and the Internet, purchasing patterns online and offline, beliefs and attitudes about travel agents and travel websites, knowledge of travel and involvement with it, motivations for using the Internet, and various demographics. A total of 1300 respondents completed surveys. One hundred and two surveys were deleted, as responses were not complete. The survey was pre-tested after about 250 surveys were collected as discussed fully in Section 5.0.

Some of the tests that will be used on the data collected from the survey instrument include the following:

- Factor analysis, which simplifies the data by reducing the information contained in a large number of variables into a smaller number of subsets or factors. This helps identify the main factors.
- Pearson chi-square test of independence and logistic regression to determine which variables are most strongly associated with the intention to book online.
- Spearman correlation analysis and the Kruskal-Wallis test to assess demographic data.
- Tests of association such as the Spearman correlation coefficient, measure the degree of linear association between two variables.

Section 4.2.1 to 4.2.7 below show the elements of the survey that were based on Yoh's (1999) model but modified to suit this study's subject of travel.

4.2.1   Beliefs about Booking with a Travel Agent, and a Travel Website

Five 7-point semantic differential items (safe/risky for credit card use, convenient/inconvenient, expensive/inexpensive, difficult/easy, enjoyable/unenjoyable, were used to measure beliefs about booking with a travel agent and booking with a travel website. If necessary, these five key items will be used to create a scale as advocated by Fishbein and Ajzen (1975). The other three items, inefficient/efficient certain/prone to errors, reliable/unreliable were used to enhance our understanding of beliefs. In addition, to supplement the eight belief-measuring items, 7-point Likert scale items measuring service provided by travel agents, ease of use, trust, relative price, and convenience were added, with endpoints of "definitely agree" (1) and "definitely disagree" (7).

4.2.2   Importance of Beliefs

Importance of each belief (i.e. credit card safety, convenience, price, ease of transactions, enjoyment was asked in relation to purchasing of leisure travel products in general with 7-point Likert scales using endpoints "very unimportant" (1) and "very important" (7). To calculate belief scores as recommended by Fishbein and Ajzen (1975), each importance weight is multiplied by each belief about booking with a travel agent to create a score for beliefs about booking with a travel agent. Importance weights could be used to generate a score for beliefs about booking with a travel website. The means of the sums of weighted belief scores may be used to generate the research variables: beliefs about booking with a travel agent, and beliefs about booking with a travel website.

Beliefs such as accuracy of data, travel deals, and service will not be used in the scale unless it was shown that the statements are differentiating, correlated properly with the five key beliefs, and contributed meaningfully to the scale.

4.2.3   Attitudes about Booking with a Travel Agent, and a Travel Website

For a global measure of attitude, four 7-point semantic differential items (positive/negative, good/bad, desirable/undesirable, useless/beneficial were used. If needed, the mean of the four items will be used as the variable, attitude toward booking with a travel agent, and attitude toward booking with a travel website.

4.2.4   Social Support for Booking Travel Online

Social influence on Internet travel booking was measured by two 7-point scales that were based on Fishbein and Ajzen (1975), with endpoints "definitely agree" (1) and "definitely disagree" (7). In addition, one likely/unlikely 7-point scale item asking about the degree of willingness to comply with salient others was included. Once could use this willingness weight item multiplied by the two measures of social influence on Internet travel booking. The mean of the sums of weighted scores could be used to generate the score social support for booking travel online, which is a social norm component in the theory of reasoned action (Fishbein & Ajzen, 1975).

4.2.5 Social Acceptance of Online Travel Booking

Social acceptance of online travel booking was determined by a question asking about the degree of agreement that some of my friends or family buy travel products online with a 7-point scale from "definitely agree" (1) and "definitely disagree" (7).

4.2.6 Online Travel Researching and Booking Intention

Two 7-point highly likely/highly unlikely bi-polar scales were used to determine travel researching and booking intention.

4.2.7 Prior Experience with the Internet and Internet Travel

A variety of questions to assess prior experience with the Internet, Internet travel and various travel products purchased and researched were included in the questionnaire.

Other questions in the survey from 4.2.8 to 4.2.12 were designed to measure specific constructs deemed important for travel products and assessing the determinants of leisure travel planning decision processes.

4.2.8 Construct of Involvement

Involvement research by Zaichkowsky (1985) point to several items for measuring this construct, however J. Zaichkowsky (personal email correspondence, April 24, 2008) confirmed the appropriate use of 10 semantic differential items as follows: unimportant/important, valuable/worthless, interesting/boring, exciting/unexciting, unappealing/appealing, involving/not involving, fascinating/mundane, needed by me/not needed, irrelevant/relevant, and means nothing to me/means a lot.

4.2.9 Construct of Product Knowledge

For a product class knowledge scale, three items from Park, Mothersbaugh & Feick (1994) were used on a 7-point scale ranging from very familiar to very unfamiliar. Respondents during the qualitative research used the terms 'travel products' and 'travel destinations' interchangeably and so it was thought to repeat the questions by referring to products and then referring to destinations. Factor analysis will reveal if the underling factor is the same or not.

1. How much do you feel you know about travel products?
2. Compared to your friends and acquaintances, how much do you feel you know about travel products?
3. Compared to a travel agent, how much do you feel you know about travel products?

1. How much do you feel you know about travel destinations?

2. Compared to your friends and acquaintances, how much do you feel you know about travel destinations?
3. Compared to a travel agent, how much do you feel you know about travel destinations?

4.2.10 Construct of Motivation

A total of eleven questions asked respondents to indicate to what extent they agreed or disagreed with the reasons for using the Internet listed below.

For the social-interaction motivation scale, three items were used from Ko, Cho, & Roberts (2004) on a 7-point disagree to agree likert scale.

1. I wonder what other people said
2. To express myself freely
3. To meet people with my interests

The convenience motivation scale used three items from Ko et al. on a 7-point disagree to agree format.

1. It's convenient to use
2. I can get what I want for less effort
3. I can use it anytime, anywhere

The information motivation scale used five items from Korgaonkar & Wolin (1999).

1. Because it gives quick and easy access to large volumes of information
2. Overall, I learn a lot from using the Web
3. So I can learn about things happening in the world
4. Overall, information obtained from the Web is useful
5. Because it makes acquiring information inexpensive

4.2.11 Demographic Variables

Common demographic questions on occupation, age, gender, income, education, and family life cycle were included.

4.2.12 Switching Behavior

Some additional questions were designed to assess the dynamic of switching behavior from online to offline travel booking. Several statements were presented in a 7-point disagree to agree format suggesting why the respondent decided to purchase travel offline when their original intent was to book it online.

5 DATA ANALYSIS

Many single item measures appear in the survey instrument as opposed to multiple-item scales and the reasons for this follow. Drolet and Morrison point out that a focus on reliability or the internal consistency between items of a multiple-item scale could have a negative impact on the information gathered by a researcher. For instance, even though a larger number of scale items will increase the reliability (coefficient alpha) of a scale, an increase in the number of scale items could contribute to respondent fatigue, boredom and inattention to survey questions. Moreover, they argue, when considering a fixed number of questions, the use of multiple-item measures reduces the number of different constructs a researcher can investigate. They also add that the incremental information from each additional item is extremely small even with very modest error term correlations between the items (Drolet & Morrison, 2001).

Rossiter (2002) states that if the object can be conceptualized as concrete and singular and the attribute can be conceptualized as concrete, it does not require multiple items to represent it in the measure. The term 'concrete' refers to objects and attributes that nearly all the consumers in a survey describe identically since the raters agree on the definition of both the object and attribute of the construct. In addition, the term 'singular' means the constructs do not have different 'facets'. Drolet and Morrison (2001) show mathematically how increasing the number of items in a measure of a doubly concrete construct will actually decrease its validity compared with a measure of one or two good items.

Bergkvist and Rossiter (2007) using the criterion of predictive validity show that single-item measures of constructs consisting of a concrete singular object and a concrete attribute such as attitude toward the ad and attitude toward the brand are equally valid as multiple-item measures. They also point to Zaichkowsky's measure of personal involvement as an example where use of a single item can be made for measures in which multiple items representing the attribute are synonymous adjectives.

Pre-testing the questionnaire was important to validate the instrument. After about 250 surveys were collected the data was analyzed to assess the survey instrument and determine whether any changes were needed. Despite the small proportion of unfinished surveys referred to below, there were no significant gaps in responses to indicate that questions were unclear to respondents or that respondents were skipping a particular question. Question items seemed easy to read and understand, meaningful to participants and sufficiently detailed. Directions provided in the questionnaire appeared to be helpful as well.

The time taken by each respondent to do the survey was recorded. The average time respondents spent completing the survey was 23 minutes. Surveys that were completed in five minutes or less (about four percent of the total) were inspected to see if respondents rushed through the survey only to receive the incentive provided by

merchants. When it appeared a large proportion of questions were left unanswered the survey was discarded on the basis that the information provided was untrustworthy.

Some questions had reverse-scale items and respondents seemed to notice these and answered those questions correctly since their responses were logical and consistent across similar questions. For instance, beliefs of 'expensive' and 'difficult' were reversed compared to other beliefs of 'convenient', 'safe using credit card', and 'enjoyable'. The average value for beliefs of 'expensive' booking with a travel agent was 3.34 whereas the average value for beliefs of 'expensive' booking with a travel website was 4.33. A higher value indicates respondents felt that travel websites are more inexpensive comparatively speaking since 4 is the midpoint on a 7-point semantic differential bi-polar scale and a value of 1 is shown in the questionnaire next to the word 'expensive' while a value of 7 is the endpoint 'inexpensive'.

Respondents also selected responses properly when comparing researching online through travel websites with researching using travel agencies. For example, one might expect most respondents would find researching with travel websites is more convenient than with travel agencies and response patterns confirm this. The average value for feelings of 'convenient' researching with a travel agent was 3.93 while the average value for feelings of 'convenient' researching with a travel website was 1.89. A lower value indicates respondents felt that travel websites are more convenient compared to travel agents since 4 is the middle value on a 7-point scale and a value of 1 is the endpoint 'convenient' while a value of 7 is shown next to 'inconvenient' on the semantic differential scale.

Responses to similar questions presented in different parts of the questionnaire were unvarying. For example, when asked 'to what extent you agree or disagree with each of the following statements', respondents indicated an average value of 4.83 on the statement, 'it's more convenient to research travel offline by visiting a travel agent'. A value of 1 equals 'definitely agree', and 7 is the endpoint 'definitely disagree', thus an average value of 4.83 indicates somewhat disagreement with the statement.

Respondents also appeared to notice the distinction in questions between researching and booking. In the questions, 'How much of your leisure/personal travel have you researched online in the past 12 months?' and 'How much of your leisure/personal travel have you purchased online in the past 12 months?' the proportion of leisure travel researched online was greater than the proportion of leisure travel purchased online. An average value for the former was 4.39 and the latter was 3.73. On the survey questionnaire a value of 1 represents 0%, 2 = less than 25%, 3 = 25% to less than 50%, 4 = 50% to less than 75%, 5 = 75% to less than 100%, and 6 = 100%.

Respondents were not confused with the six questions asking their familiarity with travel products, destinations and travelling in general. They indicated consistent responses demonstrating they equate knowledge about travel products with knowledge about destinations. After all the data was collected, factor analysis of the construct product knowledge confirmed this assertion as seen in Appendix J.

Thus, the overall consistent and expected pattern of responses seems to be thoughtful, rational and dependable and so no changes were made to the survey. A total of 1300 surveys were submitted. One hundred and two surveys were deleted, as responses were not complete, leaving 1198 completed surveys for data analysis.

Data analysis was performed using both SPSS 17.0, and Stata 10 software. Statistical analysis was conducted using Pearson's chi-square test of independence, logistic regression analysis, Spearman correlation analysis, factor analysis, and the Kruskal-Wallis test. A 95% confidence interval was used to determine the level of statistical significance for tests.

The data was assessed for normality, linearity and homoscedasticity. Multivariate normality was not evident with most variables. Transformations of these variables did not improve normality; furthermore, the data needed to be simplified in order to make comparisons easier. Therefore, categories of these variables were merged when needed.

Even though factor analysis is not recommended for logistic regression analysis, it was employed to examine the underlying patterns or relationships among involvement, knowledge, and motivation statements of the questionnaire (see sections 4.2.8, 4.2.9, and 4.2.10 respectively). Appendix J contains graphics of this analysis.

Ten involvement statements established Zaichkowsky's (1985) affective and cognitive components in the questionnaire. An examination of the correlation matrix revealed the presence of many coefficients of 0.3 and above. The Kaiser-Meyer-Oklin value was 0.886 and Bartlett's Test of Sphericity reached statistical significance, supporting the factorability of the correlation matrix. Principal components analysis revealed the presence of two components with eigenvalues exceeding 1, explaining 50.05%, and 14.77% of the variance respectively. An inspection of the scree plot shows a clear break after the second component. This was further supported by the results of Parallel Analysis, which showed only two components with an eigenvalue exceeding the corresponding criterion value for a randomly generated data matrix of the same size (10 variables x 1198 respondents). The interpretation of the two components is consistent with previous research by Zaichkowsky's (1985) on affective and cognitive components. Affective items loaded on Component 1 and most cognitive items loaded on Component 2. There was a negative correlation between the two factors ($r = -0.356$).

Six product knowledge statements were used in the questionnaire. The Kaiser-Meyer-Oklin value was 0.824 and Bartlett's Test of Sphericity reached statistical significance, supporting the factorability of the correlation matrix. Principal components analysis revealed the presence of one component with an eigenvalue exceeding 1, explaining 72% of the variance. An inspection of the scree plot shows a clear break after this first component. This was further supported by the results of Parallel Analysis, which showed only one component with an eigenvalue exceeding the corresponding criterion value for a randomly generated data matrix of the same size (6 variables x 1198 respondents). The interpretation of the one component is consistent with previous research on product knowledge by Park, Mothersbaugh & Feick (1994). Furthermore, factor analysis

establishes that respondents regard travel destinations and travel products as one and the same when asked to state their familiarity with travel.

Eleven motivation statements were assessed. An examination of the correlation matrix revealed the presence of many coefficients of 0.3 and above. The Kaiser-Meyer-Oklin value was 0.872 and Bartlett's Test of Sphericity reached statistical significance, supporting the factorability of the correlation matrix. Principal components analysis revealed the presence of three components with eigenvalues exceeding 1, explaining 41.53%, 14.53%, and 9.72% of the variance, respectively. An inspection of the scree plot shows a clear break after the third component. The interpretation of the three components is similar to the previous study on social-interaction and convenience motivation conducted by Ko et al. (2004), as well as information motivation by Korgaonkar & Wolin (1999). Information motivation items loaded on Component 1, social motivation on Component 2, and convenience loaded on Component 3, but also on Component 1.

Based on the goals of the study, for each hypothesis shown in Figure 10 section 4.1, a chi-square test of independence was firstly used. Univariate logistic regression tests followed to determine if the independent variable was significantly related to the outcome variable. A model containing variables that explain the response variable of each hypothesis tested was developed. Therefore, there are seven models, one for each H_1 hypothesis. Lastly, three final models predicting online travel booking intention were built using a stepwise method by selecting specific variables for multivariable analysis.

Spearman correlation analysis and the Kruskal-Wallis test revealed insights on the demographic data that are useful for segmentation purposes. Demographic dimensions could be combined with variables of the final models to target leisure travelers for marketing purposes.

Table 5.1 shows the demographic distribution of the sample before merging categories to accommodate certain statistical tests. Females represented the largest gender of respondents. Family income was quite evenly distributed. The dominant age groups were between 26 and 55 years of age. Almost 90% of respondents had a level of education beyond high school and the largest category had completed trade school, college, or a university degree.

Table 5. 1
Frequency Distribution of Demographic Variables

Statistics

		Gender	Which category best describes the total combined annual income of all members of your household?	In which one of the following categories does your current age fall?	Which one of the following categories best corresponds with your last completed year in school?
N	Valid	1141	1150	1154	1152
	Missing	57	48	44	46

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	425	35.5	37.2	37.2
	female	716	59.8	62.8	100.0
	Total	1141	95.2	100.0	
Missing	System	57	4.8		
Total		1198	100.0		

Which category best describes the total combined annual income of all members of your household?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	under $25,000	50	4.2	4.3	4.3
	$25,000 to $49,999	169	14.1	14.7	19.0
	$50,000 to $74,999	228	19.0	19.8	38.9
	$75,000 to $99,999	186	15.5	16.2	55.0
	$100,000 to $149,999	224	18.7	19.5	74.5
	$150,000 or more	150	12.5	13.0	87.5
	Prefer not to answer	143	11.9	12.4	100.0
	Total	1150	96.0	100.0	
Missing	System	48	4.0		
Total		1198	100.0		

Table 5.1 continued, Frequency Distribution of Demographic Variables

In which one of the following categories does your current age fall?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	under 18	1	.1	.1	.1
	18 to 25	137	11.4	11.9	12.0
	26 to 35	298	24.9	25.8	37.8
	36 to 45	307	25.6	26.6	64.4
	46 to 55	271	22.6	23.5	87.9
	56 to 65	120	10.0	10.4	98.3
	66 to 70	12	1.0	1.0	99.3
	over 70	8	.7	.7	100.0
	Total	1154	96.3	100.0	
Missing	System	44	3.7		
Total		1198	100.0		

Which one of the following categories best corresponds with your last completed year in school?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	some grammar school (1-8 grade)	2	.2	.2	.2
	completed grammar school	3	.3	.3	.4
	some high school (9-12 grade)	22	1.8	1.9	2.3
	completed high school	105	8.8	9.1	11.5
	some trade school, college, or university	267	22.3	23.2	34.6
	completed trade school, college, or university degree	552	46.1	47.9	82.6
	graduate studies or degree (masters)	150	12.5	13.0	95.6
	post graduate studies or advanced degree (PhD)	51	4.3	4.4	100.0
	Total	1152	96.2	100.0	
Missing	System	46	3.8		
Total		1198	100.0		

5.1   STATISTICAL CALCULATIONS

5.1.1   Logistic Regression

The logistic regression approach starts with an association study, followed by univariate analysis, and ends with stepwise logistic regression multivariable model building. Appendix L contains details on the approach used. The process will be employed firstly to test H_1 hypotheses shown in Figure 10 and the results are illustrated in individual models for each hypothesis.

5.1.2   Final Model Building

Logistic regression is also utilized in the final model building stage where Models 1, 2 and 3 are developed and compared to determine the best fitting model for predicting online booking intention, which is the ultimate goal of this research study. The final model building process involves determining which variables best predict online travel booking intention. The first model developed, Model 1, will use the variables from each relevant hypothesis test that contributes directly to online travel booking intention shown earlier in Figure 10. These variables come from hypotheses H_{1g}, H_{1i}, H_{1j} and H_{ik}. Model 2 contains variables of product knowledge, involvement and motivation that are not shown in Figure 10 but are known to influence online booking intention as revealed by qualitative research and through the literature review. The development of Model 2 follows the same statistical procedure outlined above. Model 3 utilizes the most statistically significant variables from Models 1 and 2. The three models will be compared to find the one that best explains determinants affecting the outcome variable, online travel booking intention. Thus, a total of three final models are built using logistic regression. All three models, exhibited in Section 5.10, use relevant variables or determinants that contribute to online booking intention.

5.1.3   Spearman correlation analysis and Kruskal-Wallis

Spearman correlation analysis and the Kruskal-Wallis test will be employed to evaluate demographic variables. Relationships between age, education level, household income, gender and key variables are examined in section 5.11.

5.2   HYPOTHESIS TESTS

Hypotheses in the parsimonious component of the Conceptual Framework (Figure 10 of section 4.1) were tested using logistic regression. For each hypothesis featured below, Pearson chi-square test of independence was firstly used to assess if there was independence between each predictor and corresponding response variable. After each association test was conducted, a summary table of the independence tests is provided to indicate which variables were kept and which ones dropped. This is followed by univariate logistic regression tests to determine whether the independent variable in the model is significantly related to the outcome variable. A summary table of the univariate fits is provided. Finally, a model was built for each hypothesis by selecting variables for

the multivariable analysis using a stepwise method to explain the predictors for the response variable of each hypothesis. A summary of the model building is shown.

Seven hypotheses in the parsimonious component of the Conceptual Framework were tested. They are listed below.

H1b   Consumers who have more positive beliefs about online travel booking will have more positive attitude toward online travel booking than consumers who have less positive beliefs about online travel booking.

H1k   Consumers with a more positive attitude toward online travel booking have greater intention to purchase travel products online than consumers who have a less positive attitude toward online travel booking.

H1f.   Consumers who have more social support for online travel booking will perceive more social acceptance of online travel booking than consumers who have less social support.

H1g.   A consumer's perceptions of the extent to which significant referents approve of Internet use for online travel booking will positively affect prediction intention to use the Internet for travel booking.

H1h   Consumers with more prior experience with the Internet and Internet travel will have more positive beliefs about online travel booking than do consumers who have less prior experience with the Internet.

H1i.   Consumers who have more positive beliefs about travel agents will have lesser intention to purchase travel online than do consumers who have less positive beliefs about travel agents.

H1j   Consumers who have more prior experience with the Internet and Internet travel will have greater intention to purchase travel online than do consumers who have less prior experience with the Internet.

As stated earlier, predictor variables retained from testing hypotheses H_{1g}, H_{1i}, H_{1j} and H_{ik} will comprise the elements used in the first final Model 1 to be developed using logistic regression. Other variables of interest in explaining online travel booking intention deal with product knowledge, involvement and motivation. Consequently, logistic regression examines these in Model 2.

Research questions of a demographic nature include what significant differences exist in terms of age, gender, education, occupation, or family income of those consumers who do and do not purchase leisure travel online?

Hypotheses to be tested in section 5.11 are the following:

H2a Age is negatively related to intention to book travel through the Internet.

H2b Level of education is positively related to intention to book travel through the Internet.

H2c Level of household income is positively related to intention to book travel through the Internet.

H2d Gender and purchase behavior are independent of each other.

5.3   BELIEFS AFFECTING ATTITUDES

Hypothesis H1b **-** Consumers who have more positive beliefs about online travel booking will have a more positive attitude toward online travel booking than consumers who have less positive beliefs about online travel booking.

5.3.1   Association (Correlation) Study

The response variable is attitude (desirable - booking with a travel website) and consists of four categories (1=very desirable, 2=2, 3=3, 4= undesirable) after merging three of them.

Predictor variables are beliefs about booking with a travel website: convenient, safe using credit card, expensive, difficult, and enjoyable, each in three categories (e.g. 1= very convenient, 2= convenient, 3= inconvenient). Also, corresponding variables for the importance of those beliefs, measured in three categories (1= unimportant, 2=important, 3=very important). Two exceptions were credit card importance and price importance which were collapsed into two categories (1= somewhat important, 2= very important).

A Chi-square test for independence with an alpha of 0.05 between variables indicated statistically significant associations between the attitude 'desirable' – booking with a travel website, and beliefs 'convenient', 'safe using credit card', 'expensive', 'difficult', 'enjoyable', 'convenience importance', 'enjoyment importance', and 'ease of transactions importance'. The belief predictors having a strong association with the attitude response variable 'desirable' - booking with a travel website are summarized in Table 5.31.

Table 5.3 1
Summary of Pearson Chi-square Test of Independence

Variable	Keep/Drop	Pearson	p-value	n	df
Convenient	Keep	302.437	<0.001	1150	6
Safe using credit card	Keep	144.918	<0.001	1151	6
Inexpensive/Expensive	Keep	24.3633	<0.001	1149	6
Easy/Difficult	Keep	70.9345	<0.001	1147	6
Enjoyable	Keep	264.758	<0.001	1148	6
Credit Card Safety Importance	Drop	3.867	0.276	1146	3
Convenience Importance	Keep	40.7434	<0.001	1145	6

Price Importance	Drop	0.7805	0.854	1145	3
Enjoyment Importance	Keep	32.826	<0.001	1147	6
Ease of Transactions Importance	Keep	42.1254	<0.001	1146	6

Eight of the predictor variables from the correlation study are kept and two discarded. Next, with attitude variable 'desirable' - booking with a travel website set as the dependent or response variable and testing the belief 'convenient' as a predictor, univariate logistic regression was performed using a level of significance of 0.05. Other remaining predictor variables are tested in this manner also. The decision to keep predictor variables at this stage was made primarily based on the likelihood test. Results for all eight variables are summarized in Table 5.32.

The predictors, 'ease of transactions importance' and 'enjoyment importance', are not useful predictors when considering both the likelihood test and Wald test and hence they were dropped at this stage of analysis.

Table 5.3 2
Summary of the Univariate Fits - Ordered Logistic Regression

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
Convenient	**Keep**	249.84	0.0000	-1443.8785
Safe using credit card	**Keep**	120.82	0.0000	-1510.4479
Inexpensive/Expensive	**Keep**	17.91	0.0010	-1558.9879
Easy/Difficult	**Keep**	60.81	0.0000	-1534.8168
Enjoyable	**Keep**	241.35	0.0000	-1446.718
Convenience Importance	**Keep**	23.47	0.0000	-1550.4147
Enjoyment Importance	**Drop**	6.94	0.0311	-1560.9091
Ease of Transactions Importance	**Drop**	6.88	0.0320	-1560.4595

5.3.3   Model Building

Stepwise ordinal logistic regression was performed to assess the impact of the remaining six predictor variables on the attitude 'desirable' - booking with a travel website. The importance of each variable included in the model was verified through an examination of the Wald test statistic. Evidence of interactions in the data was tested and no interaction was found between variables. Five predictors were kept to comprise an adequate model for predicting the attitude desirable - booking with a travel website. This

model, seen in Table 5.33, yields the largest Log likelihood and largest R-squared value, which means these predictors accounted for over 14% of the variability in the outcome variable. With categorical variables Stata creates k indicator variable sets as explained in Appendix L. The procedure is to omit the first group of variables so it acts as a baseline for other categories to help understand their odds ratios. For example, in Table 5.33, the odds ratio for 'Convenient_2' is 2.36, and it is the odds of the "convenient" towards booking with a travel website being "Desirable - Booking with a travel website" divided by the odds of "very convenient" towards booking with a travel website being "Desirable - Booking with a travel website". The variable "very convenient" is the omitted category used as a baseline. Likewise, the odds ratio of 5.36 for 'Convenient_3' is the odds of the "inconvenient" towards booking with a travel website being "Desirable - Booking with a travel website" divided by the odds of "very convenient" towards booking with a travel website being "Desirable - Booking with a travel website". Interpreting odds ratios among categories of such predictor variables implies that when a respondent believes booking with a website is more 'convenient' there is a greater probability their attitude would be desirable about booking with a website. The same applies to other belief variables of 'safe using credit card', 'enjoyable', and the 'importance of convenience'.

The belief variable 'difficult' is reversed in the questionnaire so that 1 = very difficult and 7 = very easy; thus, the odds ratios are interpreted accordingly and the foregoing comment on how beliefs affect desirability is upheld. Hypothesis H_{1b} is supported with predictor variables for the attitude 'desirable' consisting of 'beliefs' 'convenient', 'safe', 'easy', 'enjoyable' and 'convenience importance'. It is also supported with predictor variables for the attitude 'positive' consisting of 'beliefs' 'convenient', 'safe', 'easy', and 'enjoyable' as revealed in Appendix H. These two attitudes were deemed most important in supporting hypothesis H_{1b} especially when one considers the outcome of hypothesis H_{1k} shown in section 5.9.3.

Table 5.3 3
Model Building for Hypothesis H1b

Ordered logistic regression			Number of obs	=	1124	
LR chi2(10) = 448.36			Prob > chi2	=	0.0000	
Log likelihood = -1308.0296			Pseudo R2	=	0.1463	

Desirable	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Convenient_2	2.358838	.3189057	6.35	0.000	1.809752	3.074519
Convenient_3	5.359373	.9072796	9.92	0.000	3.846054	7.468141
Safe_2	1.400351	.1858937	2.54	0.011	1.079547	1.816486
Safe_3	2.287803	.3585625	5.28	0.000	1.682719	3.110467
Easy/Difficult_2	1.796947	.2815473	3.74	0.000	1.321807	2.442881
Easy/Difficult _3	1.080542	.1518013	0.55	0.581	.8204641	1.423062
Enjoyable_2	2.536173	.3333304	7.08	0.000	1.960221	3.281351
Enjoyable_3	5.723521	.9994333	9.99	0.000	4.064692	8.059329

Convenience_2 Importance	.9180914	.1323792	-0.59	0.553	.6920724	1.217924
Convenience _3 Importance	.6994149	.1086951	-2.30	0.021	.5157638	.9484599

```
-------------+----------------------------------------------------------------
      /cut1          .5715657    .1762238                    .2261735    .916958
      /cut2          2.124583    .1880352                    1.756041    2.493125
      /cut3          3.213266    .2007895                    2.819726    3.606806
```

5.4   SOCIAL SUPPORT IMPACTS SOCIAL ACCEPTANCE

Hypothesis H1f - Consumers who have more social support for online travel booking will perceive more social acceptance of online travel booking than consumers who have less social support.

5.4.1   Association (Correlation) Study

The response variable is 'some of my friends or family buy travel products on the Internet' measured in four categories (1=definitely agree, 2=generally agree, 3=somewhat agree, 4=disagree).

Predictor variables are 'my friends or family think I should purchase via the Internet' (1= agree, 2=neutral, 3= disagree) and 'my friends or family encourage me to purchase travel products via the Internet' (1= agree, 2=neutral, 3=disagree).

A Chi-square test for independence with an alpha of 0.05 between variables indicated statistically significant associations between the response and both predictor variables are summarized in Table 5.41.

Table 5.4 1
Summary of Pearson Chi-square Test of Independence

Variable	Keep/Drop	Pearson	p-value	n	df
Friends or family encourage me to purchase	Keep	200.018	<0.001	1179	6
Friends or family think I should purchase	Keep	119.543	<0.001	1176	6

Both predictor variables from the correlation study are kept. Next, with social acceptance - 'some of my friends or family buy travel products on the Internet' set as the dependent or response variable and testing social support 'my friends or family think I should purchase via the Internet' as a predictor, univariate logistic regression was performed using a level of significance of 0.05. The second predictor variable was tested as well.

Both variables are useful predictors and therefore they were retained at this stage of analysis.

Table 5.4 2
Summary of the Univariate Fits - Ordered Logistic Regression

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
Friends or family encourage me to purchase	**Keep**	200.90	0.0000	-1476.2487
Friends or family think I should purchase	**Keep**	112.97	0.0000	-1516.2071

5.4.3   Model Building

Stepwise ordinal logistic regression was performed to assess the impact of the two predictor variables. Only one predictor was kept as an adequate model to predict social acceptance – 'some of my friends or family buy travel products on the Internet'. This model, seen in Table 5.43, yields the largest Log likelihood and largest R-squared value. When both variables, 'my friends or family think I should purchase via the Internet' and 'my friends or family encourage me to purchase travel products via the Internet' are considered together as predictors, the significance of variable 'my friends or family think I should purchase via the Internet' is reduced dramatically demonstrating that these predictors are correlated and pointing to the need to drop one of them in the final hypothesis H_{1b} model. Also, when both predictor variables are considered in another model as an interaction, the log likelihood is slightly larger –1467.2888 than in the model below but the *p*-values in the Wald tests are 0.556 and 0.943 for the two categories of 'my friends or family think I should purchase via the Internet', and the *p*-value is 0.393 for the interaction variable. Thus, the introduction of the interaction term dramatically affects the odds ratios and *p*-values of other variables in the model. Odds ratios indicate hypothesis H_{1f} is supported with the predictor variable 'my friends or family encourage me to purchase travel products via the Internet'.

Table 5.4 3
Model Building for Hypothesis H1f

Ordered logistic regression   Number of obs   =   1179
                              LR chi2(2)   =   200.90

```
                         Prob > chi2    =     0.0000
Log likelihood = -1476.2487            Pseudo R2    =    0.0637
------------------------------------------------------------------------
Some of my friends    | Odds Ratio  Std. Err.    z   P>|z|   [95% Conf. Interval]
or family buy
-------------+----------------------------------------------------------
My friends or family_2    4.126538   .5229572  11.18  0.000   3.21894    5.290039
encourage me to purchase
My friends or family_3    7.426781   1.196088  12.45  0.000   5.416441   10.18327
encourage me to purchase
-------------+----------------------------------------------------------
    /cut1 |                -.3320433  .0947562                -.517762   -.1463246
    /cut2 |                1.468659   .1064667                1.259988   1.67733
    /cut3 |                3.022479   .1297167                2.768239   3.27672
```

5.5   SOCIAL ACCEPTANCE AFFECTS ONLINE BOOKING INTENTION

Hypothesis H1g - A consumer's perceptions of the extent to which significant referents approve of Internet use for online travel booking will positively affect prediction intention to use the Internet for travel booking.

5.5.1   Association (Correlation) Study

The response variable is, 'how likely is it that you will book or purchase any travel product through the Internet within the next six months?' The variable is very positively skewed and so categories were merged. (1=highly likely, 2=likely, 3=somewhat likely, 4= unlikely).

The predictor variable is 'some of my friends or family buy travel products on the Internet' (1=definitely agree, 2=generally agree, 3=somewhat agree, 4= disagree).

A Chi-square test for independence with an alpha of 0.05 between variables indicated a statistically significant association between the response and predictor variables (see Table 5.51).

Table 5.5 1
Summary of Pearson Chi-square Test of Independence

Variable	Keep/Drop	Pearson	p-value	n	df
Some of my friends or family buy travel products	Keep	133.747	<0.001	1172	9

Table 5.5 2

There is no need to create Table 5.52 or to conduct this test, accordingly, model building is the next step.

5.5.3   Model Building

Ordinal logistic regression was performed to assess the impact of the predictor variable as shown in Table 5.53. Hypothesis H_{1g} is supported with the predictor variable 'some of my friends or family buy travel products' as demonstrated by the odds ratios.

Table 5.5 3
Model Building for Hypothesis H1g

Ordered logistic regression   Number of obs   =   1172
                          LR chi2(3)   =   94.44
                          Prob > chi2   =   0.0000
Log likelihood = -1349.767   Pseudo R2   =   0.0338

```
------------------------------------------------------------------------
Online booking intention | Odds Ratio  Std. Err.    z   P>|z|   [95% Conf. Interval]
-------------+----------------------------------------------------------
```

	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Some of my friends or_2 family buy travel products	1.575911	.2535146	2.83	0.005	1.149741	2.160048
Some of my friends or _3 family buy travel products	2.982762	.5000484	6.52	0.000	2.147425	4.143041
Some of my friends or _4 family buy travel products	5.341185	1.057895	8.46	0.000	3.62281	7.874623

```
-------------+----------------------------------------------------------
```

/cut1		.830102	.1311966			.5729615	1.087243
/cut2		1.753132	.1389964			1.480704	2.02556
/cut3		2.624315	.1514581			2.327462	2.921167

5.6   PRIOR EXPERIENCE WITH INTERNET INFLUENCES BELIEFS

Hypothesis H1h - Consumers who have more prior experience with the Internet and Internet travel will have more positive beliefs about online travel booking than do consumers who have less prior experience with the Internet.

5.6.1   Association (Correlation) Study

The response variable is the belief about 'booking with a travel website being convenient' (1= very convenient, 2=convenient, 3= inconvenient). Other studies follow with beliefs 'safe using credit card', 'inexpensive', 'easy', and 'enjoyable', as illustrated in Appendix I.

Predictor variables are associated with the following questions: "Could you access the Internet with your present computer at home or work?" (1=yes, 2=no), "Do you have access to the Internet from places other than home or work?" (1=yes, 2=no), "How long have you been using the Internet?" (1= less than or equal to 10 years, 2= more than 10 years), "About how much time do you use the Internet each week for any reason other than work?" (1=less than 4 hours, 2=5-10 hours, 3= more than 11 hours), "How many leisure trips have you taken in the past year?" (1= less than or equal to 5, 2= more than 6), "How often do you visit a travel website to research or book a leisure travel product?" (2= less than twice a year, 3= once every few months, 4=every month, 5= at least once a week), "How much of your leisure travel have you researched online in the past 12 months?" (2=less than 25%, 3=25 to less than 50%, 4=50% to less than 75%, 5=75% to less than 100%, 6=all), "How much of your leisure travel have you purchased online in the past 12 months?" (1=none, 2=less than 25% but more than 0%, 3=25% to less than 50%, 4=50% to less than 75%, 5=75% to less than 100%, 6=all). Additional predictor variables were prior experience purchasing specific travel products online such as 'cruises or charters', 'destination tour/attraction tickets', 'vacation packages', 'boat tours', 'hotels or accommodation', 'wine tours', 'all-inclusive resorts', 'airline tickets', 'car rentals', 'scenic rail tours', 'long-distance train tickets'.

A Chi-square test for independence with an alpha of 0.05 between variables indicated statistically significant associations between the response and predictor variables is summarized in Table 5.61.

Table 5.6 1
Summary of Pearson Chi-square Test of Independence

Variable	Keep/Drop	Pearson	p-value	n	df
Access Internet from home	Drop	1.7491	0.417	1138	2
Access internet elsewhere	Drop	4.0582	0.131	1129	2
How long using Internet	Drop	2.7667	0.251	900	2
How much time use Internet	Drop	6.3637	0.174	1141	4
Cruises or Charters	Drop	5.6812	0.058	1150	2
Destination tour/ attraction tickets	Strong - Keep	22.2613	<0.001	1150	2
Vacation packages	Strong - Keep	20.5326	<0.001	1150	2
Boat tours	Moderate - Keep	7.3372	0.026	1150	2
Hotels or accommodation	Strong - Keep	52.2531	<0.001	1150	2
Wine tours	Drop	5.0558	0.080	1150	2
All-inclusive resorts	Drop	5.9089	0.052	1150	2
Airline tickets	Strong - Keep	45.0086	<0.001	1150	2
Car rentals	Strong -	28.3406	<0.001	1150	2

	Keep				
Scenic rail tours	Drop	2.1208	0.346	1150	2
Long-distance train tickets	Drop	1.1972	0.550	1150	2
Number of leisure trips	Drop	1.210	0.876	1146	4
Frequency visit website	Moderate - Keep	14.4985	0.025	1137	6
Travel researched online	Strong - Keep	47.7511	<0.001	1140	8
Travel purchased online	Strong - Keep	91.0628	<0.001	1142	10

5.6.2   Univariate Logistic Regression Fits

Nine predictor variables from the correlation study are kept. Next, with 'beliefs about booking with a travel website – convenient' set as the dependent or response variable and testing each of the nine remaining variables as a predictor, univariate logistic regression was performed using a level of significance of 0.05.

Table 5.62 shows the useful predictors, thus they were kept after this stage of analysis.

Table 5.6 2
Summary of the Univariate Fits - Ordered Logistic Regression

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
Destination tour/ attraction tickets	**Keep**	22.05	0.0000	-1148.0103
Vacation packages	**Keep**	19.21	0.0000	-1149.4309
Boat tours	**Drop**	2.83	0.0926	-1157.62
Hotels or accommodation	**Keep**	38.19	0.0000	-1139.9379
Airline tickets	**Keep**	37.57	0.0000	-1140.2501
Car rentals	**Keep**	28.08	0.0000	-1144.9957
Frequency visit website	**Keep**	9.94	0.0191	-1139.417
Travel researched online	**Keep**	48.02	0.0000	-1122.2274
Travel purchased online	**Keep**	81.05	0.0000	-1111.1073

Ordinal logistic regression was performed to assess the impact of the predictor variables, (see Table 5.63). Evidence of interactions in the data was tested and no interaction was found between variables. Three predictor variables are retained, namely "How much of your leisure travel have you purchased online in the past 12 months?", and prior experience purchasing specific travel products online, 'destination tour/attraction tickets' and 'airline tickets'.

Table 5.6 3
Model Building for Hypothesis H1h

Ordered logistic regression   Number of obs   =   1142
                                       LR chi2(7)   =   91.96
                                       Prob > chi2   =   0.0000
Log likelihood = -1105.6496   Pseudo R2   =   0.0399

Convenient belief	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Destination tour/ attraction tickets_1	.7703476	.1014477	-1.98	0.048	.5951018	.9971998
Airline tickets_1	.6917295	.1088812	-2.34	0.019	.5081051	.9417142
Travel purchased ~2 online	.6178131	.1402221	-2.12	0.034	.3959715	.9639407
Travel purchased ~3 online	.6223413	.1467944	-2.01	0.044	.3919692	.98811
Travel purchased ~4 online	.3885707	.0900114	-4.08	0.000	.2467695	.6118554
Travel purchased ~5 online	.3553591	.0837524	-4.39	0.000	.2238993	.5640037
Travel purchased ~6 online	.2323604	.0602342	-5.63	0.000	.1398	.3862041
/cut1	-1.014697	.1737116			-1.355165	-.6742282
/cut2	.2768121	.1706348			-.057626	.6112502

Based on odds ratios generated, hypothesis H_{1h} is supported with predictor variables as indicated above in Table 5.63 and in the four models developed to test other belief variables in Appendix I.

5.7 TRAVEL AGENT BELIEFS INFLUENCES ONLINE BOOKING

Hypothesis H1i - Consumers who have more positive beliefs about travel agents will have lesser intention to purchase travel online than do consumers who have less positive beliefs about travel agents.

5.7.1 Association (Correlation) Study

The dependent variable is online booking intention operationalized by the survey question, 'how likely is it that you will book or purchase any travel product through the Internet within the next six months?' (1=highly likely, 2=likely, 3= unlikely).

Independent variables are beliefs about booking with a travel agent, 'convenient' (1=very convenient, 2=2, 3=3, 4=4, 5=5, 6=6, 7= very inconvenient), 'safe using credit card' (1=very safe, 2=somewhat safe, 3=risky), 'expensive' (1=very expensive, 2=expensive, 3=somewhat expensive, 4=neutral, 5= inexpensive), 'difficult'(1=very difficult, 2=2, 3=3, 4=4, 5=5, 6=6, 7= very easy), 'enjoyable' (1=very enjoyable, 2=enjoyable, 3=somewhat enjoyable, 4=neutral, 5= unenjoyable).

A Chi-square test for independence was conducted with an alpha of 0.05 between variables. The belief predictors having a strong association with online booking intention are summarized in Table 5.71.

Table 5.7 1
Summary of Pearson Chi-square Test of Independence

Variable	Keep/Drop	Pearson	p-value	n	df
Convenient	Keep	77.2893	<0.001	1153	12
Safe using credit card	Keep	15.7054	0.003	1151	4
Inexpensive/Expensive	Keep	24.4302	0.002	1148	8
Easy/Difficult	Keep	39.1877	<0.001	1140	12
Enjoyable	Drop	12.8426	0.117	1146	8

5.7.2 Univariate Logistic Regression Fits

Four of the predictor variables from the correlation study are kept for univariate analysis using a level of significance of 0.05. Results for all four variables are in Table 5.72.

Table 5.7 2
Summary of the Univariate Fits - Ordered Logistic Regression

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
Convenient	Keep	66.77	0.0000	-1123.0574
Safe using credit card	Drop	5.16	0.0758	-1152.2255

Inexpensive/Expensive	**Keep**	22.17	0.0002	-1140.1399
Easy/Difficult	**Keep**	14.07	0.0288	-1136.098

5.7.3   Model Building

Stepwise ordinal logistic regression was performed to assess the impact of the remaining predictor variables. This model can be seen in Table 5.73. Odds ratios imply that when belief in the inconvenience of travel agent booking becomes stronger the probability of booking online increases, and vice versa. Similarly, a stronger belief that booking with agents is expensive causes the probability of booking travel online to be greater, and the opposite is true. Hypothesis H_{1i} is supported with predictor variables beliefs, 'convenient' and 'expensive' likely to influence online booking intention.

Table 5.7 3
Model Building for Hypothesis H1i

Ordered logistic regression   Number of obs   =   1144
                                  LR chi2(10)   =   84.80
                                  Prob > chi2   =   0.0000
Log likelihood = -1103.6079   Pseudo R2   =   0.0370

Online booking	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Convenient Agent_2	.6949821	.1470624	-1.72	0.086	.4590439	1.052187
Convenient Agent_3	.56535	.1126525	-2.86	0.004	.3825654	.8354665
Convenient Agent_4	.4832885	.0947551	-3.71	0.000	.3290919	.7097341
Convenient Agent_5	.3222874	.0659659	-5.53	0.000	.215784	.4813573
Convenient Agent_6	.3759087	.0803525	-4.58	0.000	.2472484	.5715196
Convenient Agent_7	.2366068	.0530696	-6.43	0.000	.152443	.3672374
Expensive Agent_2	.96842	.2062165	-0.15	0.880	.6379812	1.470008
Expensive Agent_3	1.339712	.2681934	1.46	0.144	.904923	1.983404
Expensive Agent_4	1.558646	.3092299	2.24	0.025	1.056506	2.299444
Expensive Agent_5	1.872257	.3630945	3.23	0.001	1.280231	2.738056
/cut1	-.238606	.1876412			-.606376	.129164
/cut2	.673292	.1884401			.3039561	1.042628

5.8   PRIOR EXPERIENCE INFLUENCES ONLINE BOOKING INTENTION

Hypothesis H1j - Consumers who have more prior experience with the Internet and Internet travel will have greater intention to purchase travel online than do consumers who have less prior experience with the Internet.

5.8.1 Association (Correlation) study

The dependent variable is defined by this survey question, "How likely is it that you will book or purchase any travel product through the Internet within the next six months?" (1=highly likely, 2=likely, 3= unlikely).

Predictor variables are associated with the following questions: "Could you access the Internet with your present computer at home or work?", "Do you have access to the Internet from places other than home or work?", "How long have you been using the Internet?", "About how much time do you use the Internet each week for any reason other than work?", "How many leisure trips have you taken in the past year?", "How often do you visit a travel website to research or book a leisure travel product?", "How much of your leisure travel have you researched online in the past 12 months?", "How much of your leisure travel have you purchased online in the past 12 months?". Additional predictor variables were prior experience purchasing specific travel products online such as 'cruises or charters', 'destination tour/attraction tickets', 'vacation packages', 'boat tours', 'hotels or accommodation', 'wine tours', 'all-inclusive resorts', 'airline tickets', 'car rentals', 'scenic rail tours', 'long-distance train tickets'. The same categories found in Section 5.6.1 are used for this study.

A Chi-square test for independence with an alpha of 0.05 indicated statistically significant associations between the response and predictor variables. See Table 5.81.

Table 5.8 1
Summary of Pearson Chi-square Test of Independence

Variable	Keep/Drop	Pearson	p-value	n	df
Access Internet from home	Drop	1.1990	0.549	1152	2
Access internet elsewhere	Keep	10.6725	0.005	1142	2
How long using Internet	Keep	12.3355	0.002	914	2
How much time use Internet	Keep	26.4283	<0.001	1154	4
Cruises or Charters	Keep	24.2710	<0.001	1162	2
Destination tour/ attraction tickets	Keep	83.0406	<0.001	1162	2
Vacation packages	Keep	51.4516	<0.001	1162	2
Boat tours	Keep	12.4100	0.002	1162	2
Hotels or accommodation	Keep	167.3162	<0.001	1162	2
Wine tours	Drop	3.8269	0.148	1162	2
All-inclusive resorts	Keep	34.4294	<0.001	1162	2
Airline tickets	Keep	149.8317	<0.001	1162	2
Car rentals	Keep	104.3931	<0.001	1162	2
Scenic rail tours	Keep	9.3069	0.010	1162	2
Long-distance train tickets	Keep	20.1219	<0.001	1162	2
Number of leisure trips	Keep	26.999	<0.001	1174	4

Frequency visit website	Keep	113.5537	<0.001	1164	6
Travel researched online	Keep	195.1190	<0.001	1168	8
Travel purchased online	Keep	396.6179	<0.001	1169	10

<u>5.8.2 Univariate Logistic Regression Fits</u>

Seventeen predictor variables from the correlation study are kept. Next, with 'online booking intention' set as the dependent or response variable and testing each of the seventeen remaining variables as a predictor, univariate logistic regression was performed using a level of significance of 0.05. Table 5.82 shows useful predictors and therefore they were retained after this stage of analysis.

Table 5.8 2
Summary of the Univariate Fits - Ordered Logistic Regression

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
Access internet elsewhere	**Keep**	10.34	0.0013	-1145.0631
How long using Internet	**Keep**	10.80	0.0010	-909.02287
How much time use Internet	**Keep**	22.67	0.0000	-1150.8708
Cruises or Charters	**Keep**	25.75	0.0000	-1156.7137
Destination tour/ attraction tickets	**Keep**	83.03	0.0000	-1128.072
Vacation packages	**Keep**	51.39	0.0000	-1143.8935
Boat tours	**Keep**	11.97	0.0005	-1163.6054
Hotels or accommodation	**Keep**	153.29	0.0000	-1092.9424
All-inclusive resorts	**Keep**	32.75	0.0000	-1153.2141
Airline tickets	**Keep**	137.87	0.0000	-1100.6526
Car rentals	**Keep**	103.19	0.0000	-1117.9918
Scenic rail tours	**Keep**	9.15	0.0025	-1165.0126
Long-distance train tickets	**Keep**	22.19	0.0000	-1158.4914
Number of leisure trips	**Keep**	25.27	0.0000	-1169.5325
Frequency visit website	**Keep**	113.57	0.0000	-1115.747
Travel researched online	**Keep**	180.29	0.0000	-1084.1797

Travel purchased online	**Keep**	394.07	0.0000	-981.3132

5.8.3   Model Building

Ordinal logistic regression was performed to assess the impact of the predictor variables as summarized in Table 5.83. Evidence of interactions in the data was tested and no interaction was found between variables. Nine predictor variables are retained. After dropping variable 'how long' from the model the Log Likelihood was drastically reduced therefore it is better to have 'how long' in the model even though the *p*-value is greater than 0.05. An interpretation of odds ratios implies that the probability of purchasing online goes up given one has access to the Internet from places other than home. The probability of online purchasing rises given one has had prior experience booking travel products online such as destination tour/attraction tickets, hotels, airlines, car rentals, and long distance train tickets. The probability also goes up given: a) one has been using the Internet for over 10 years; b) a respondent spends more time using the Internet each week, and c) more than six leisure trips have been taken in the past year. Hypothesis $H1_j$ is supported with predictor variables as indicated.

Table 5.8 3
Model Building for Hypothesis H1j

Ordered logistic regression   Number of obs   =   905
                                                 LR chi2(10)   =   211.36
                                                 Prob > chi2   =   0.0000
Log likelihood = -798.24388   Pseudo R2   =   0.1169

Online booking intent	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Access internet ~2	1.4931	.2538671	2.36	0.018	1.069946	2.083608
How long _2	.7970714	.1105501	-1.64	0.102	.6073506	1.046056
How much time ~2	.6690802	.1106377	-2.43	0.015	.4838662	.9251904
How much time ~3	.6866295	.1157825	-2.23	0.026	.4933887	.9555552
Destination tour_1	.585597	.0936697	-3.35	0.001	.4280004	.8012233
Hotels_1	.5844946	.1088823	-2.88	0.004	.4057092	.8420662
Airlines_1	.4263674	.0848113	-4.29	0.000	.288713	.6296534
Car rentals_1	.61966	.1013073	-2.93	0.003	.4497713	.8537194
Long-distance train _1	.4451325	.1715177	-2.10	0.036	.2091731	.9472678
# leisure trips ~2	.520033	.1041964	-3.26	0.001	.3511397	.7701616
/cut1	-1.739807	.1900862			-2.112369	-1.367245
/cut2	-.6616858	.180963			-1.016367	-.3070049

5.9   ATTITUDES AFFECT ONLINE BOOKING INTENTION

Hypothesis H1k - Consumers who have a more positive or affirmative attitude toward online travel booking have greater intention to purchase travel products online than consumers who have a less positive attitude toward online travel booking.

5.9.1   Association (Correlation) study

The dependent variable is online booking intention as related to the survey question, 'How likely is it that you will book or purchase any travel product through the Internet within the next six months?' (1=highly likely, 2=likely, 3= unlikely).

Independent or predictor variables are attitudes associated with booking through a travel website, 'positive' (1=very positive, 2=positive, 3=somewhat positive, 4= negative), 'good' (1=very good, 2=good, 3=somewhat good, 4= bad), 'desirable' (1=very desirable, 2=desirable, 3=somewhat desirable, 4= undesirable), 'beneficial'(1=very useless, 2=2, 3=3, 4=4, 5=5, 6=6, 7=very beneficial).

A Chi-square test for independence with an alpha of 0.05 between variables indicated statistically significant associations between the response and predictor variables is shown in Table 5.91.

Table 5.9 1
Summary of Pearson Chi-square Test of Independence

Variable	Keep/Drop	Pearson	p-value	n	df
Positive	Keep	56.7686	<0.001	1143	6
Good	Keep	75.4782	<0.001	1137	6
Desirable	Keep	77.9602	<0.001	1143	6
Beneficial	Keep	56.0263	<0.001	1135	12

All predictor variables are showing strong association with the response variable and are subsequently kept for univariate analysis.

5.9.2   Univariate Logistic Regression Fits

Table 5.92 shows useful predictors following univariate analysis with a level of significance of 0.05 and therefore they were retained for model building.

Table 5.9 2
Summary of the Univariate Fits - Ordered Logistic Regression

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
Positive	Keep	53.75	0.0000	-1117.7315

Good	**Keep**	68.72	0.0000	-1103.5631
Desirable	**Keep**	74.97	0.0000	-1108.8751
Beneficial	**Keep**	53.93	0.0000	-1109.2622

5.9.3   Model Building

Ordinal logistic regression was performed to assess the impact of the predictor variables as shown in Table 5.93. Evidence of interactions in the data was tested and no interaction was found between variables. Two predictor variables are retained, that is, attitudes 'positive' and 'desirable'. Hypothesis H_{1k} is supported with predictor variables as indicated.

Table 5.9 3
Model Building for Hypothesis H1k

```
Ordered logistic regression                Number of obs   =      1139
                          LR chi2(6)    =    90.63
                          Prob > chi2   =    0.0000
Log likelihood = -1095.8494              Pseudo R2     =    0.0397
-----------------------------------------------------------------------------
Online booking intention | Odds Ratio  Std. Err.    z   P>|z|   [95% Conf. Interval]
-------------+---------------------------------------------------------------
Attitude - Positive_2        1.657191   .3090251   2.71   0.007   1.149859   2.388364
Attitude - Positive _3       1.850172   .3728868   3.05   0.002   1.246406   2.746406
Attitude - Positive _4       2.035      .3948651   3.66   0.000   1.391233   2.976658
Attitude - Desirable_2       1.059371   .1782909   0.34   0.732   .7617139   1.473345
Attitude - Desirable _3      2.011242   .3811825   3.69   0.000   1.387201   2.91601
Attitude - Desirable _4      2.455406   .4529616   4.87   0.000   1.7104     3.524917
-------------+---------------------------------------------------------------
/cut1 |                      1.006965   .1437764                  .7251686   1.288762
/cut2 |                      1.95028    .1522511                  1.651873   2.248686
-----------------------------------------------------------------------------
```

5.10   FINAL MODELS

As stated earlier, the final model building process involves determining which variables best predict online travel booking intention. The first model developed, Model 1, includes retained variables resulting from the tests of hypotheses H_{1g}, H_{1i}, H_{1j} and H_{ik} since they contribute directly to online travel booking intention as illustrated in Figure 10. These variables were exhibited in Tables 5.53, 5.73, 5.83 and 5.93 respectively. In the final models odds ratios may be interpreted to gauge the relative importance of predictors and their predictive ability.

Thus in Model 1, Table 5.101, the dependent or response variable is online booking intention as related to the survey question, **"**How likely is it that you will book or purchase any travel product through the Internet within the next six months?" Categories were merged so that three remain, 1 = highly likely, 2 = likely, and 3 = somewhat likely.

Furthermore, 13 independent or predictor variables are as follows:
Some of my friends or family buy travel products on the Internet,
Belief that booking with a travel agent is 'convenient/inconvenient',
Belief that booking with a travel agent is 'expensive',
Having access to the Internet from places other than home or work,
Length of time a person has been using the Internet,
Number of leisure trips taken in the past year,
The attitude that it is positive to book with a travel website
The attitude it is desirable to book with a travel website
Prior experience purchasing five specific travel products online such as, 'destination tour/attraction tickets', 'hotels or accommodation', 'airline tickets', 'car rentals', 'long-distance train tickets'.

At this stage model building was a simple task since all variables have already been merged where necessary, and assessed using a Chi-square test for independence, and univariate analysis using a level of significance of 0.05. One variable was dropped through an examination of the Wald test statistic. This was the variable related to the question, "About how much time do you use the Internet each week for any reason other than work?"

The results of Model 1 can be seen in Table 5.101. The model as a whole yielded a log likelihood of -709.05 and an R^2 of 16.46%. As Hilbe (2009) indicates the proportional odds model assumes equality of slopes among response levels or categories, so that the odds ratios pertaining to 1 = 'highly likely' to book apply as well to the categories of 2='likely', and 3= 'somewhat likely'. A notable predictor of online booking intention was social acceptance as expressed in the survey statement, "Some of my friends or family buy travel products on the Internet". The social influence component of the theory of reasoned action seems critical in explaining consumers' intention to book travel online. Another important predictor is a 'positive' attitude toward booking online. A person's attitudes are strongly influenced by groups to which he or she belongs so it is not surprising to see these two variables emerging as key predictors together in this model. The variable "Internet access other~2" recorded an odds ratio of 1.589 meaning that the expected odds of booking travel online ('highly likely' to book) is almost 1.6 times greater among respondents indicating they had access to the Internet asides from home or work, than respondents who said they do not have such access, controlling for all other factors in the model. Other key variables from hypotheses tests H_{1g}, H_{1i}, H_{1j} and H_{ik} are significant in this final model.

Table 5.10 1
Model 1

Ordered logistic regression   Number of obs   =   856
                                      LR chi2(27)   =   279.47
                                      Prob > chi2   =   0.0000
Log likelihood = -709.04845   Pseudo R2   =   0.1646

Predictor Variables	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Some of my friends _2	1.490089	0.307572	1.93	0.053	.9942923	2.233111
Some of my friends _3	2.635803	0.57086	4.47	0.000	1.724092	4.029633
Some of my friends _4	3.846541	1.003958	5.16	0.000	2.306239	6.415587
Belief convenientA_2	0.8059347	0.219541	-0.79	0.428	.4725286	1.374585
Belief convenientA_3	0.6573546	0.167291	-1.65	0.099	.3991864	1.082489
Belief convenientA_4	0.6292642	0.155203	-1.88	0.060	.3880525	1.020412
Belief convenientA_5	0.4359062	0.112895	-3.21	0.001	.262386	.724178
Belief convenientA_6	0.5405856	0.159231	-2.09	0.037	.3034873	.9629159
Belief convenientA_7	0.5648519	0.158715	-2.03	0.042	.3256568	.9797359
Belief expensiveA_2	1.037616	0.284288	0.13	0.893	.6064888	1.775212
Belief expensiveA_3	1.395234	0.359014	1.29	0.196	.8425983	2.310328
Belief expensiveA_4	1.234324	0.313146	0.83	0.407	.7507253	2.029447
Belief expensiveA_5	1.625916	0.398791	1.98	0.048	1.005363	2.629501
Internet access other~2	1.589834	0.288948	2.55	0.011	1.113392	2.270154
How long using net_2	0.7402478	0.111729	-1.99	0.046	.5506833	.9950671
Number of trips~2	0.6097605	0.130586	-2.31	0.021	.4007438	.9277945
Destination tour _1	0.5910556	0.100093	-3.11	0.002	.4241122	.8237131
Hotels_1	0.6086096	0.122005	-2.48	0.013	.4108682	.9015193
Airline tickets_1	0.5602512	0.12405	-2.62	0.009	.3630033	.8646794
Car rentals_1	0.6281079	0.108598	-2.69	0.007	.4475738	.8814626
Long-distance train_1	0.367288	0.148985	-2.47	0.014	.165855	.8133637
Attitude positiveW_2	1.654819	0.396524	2.1	0.036	1.034636	2.646754
Attitude positive W_3	1.968378	0.512919	2.6	0.009	1.181143	3.280305
Attitude positiveW_4	1.934779	0.48258	2.65	0.008	1.186647	3.154577
Attitude desirableW_2	1.188753	0.25725	0.8	0.424	.7778375	1.816747
Attitude desirableW_3	1.6572	0.393676	2.13	0.033	1.040321	2.639868
Attitude desirableW_4	1.749352	0.416959	2.35	0.019	1.096459	2.791012
/cut1	-.0922823	.352925			-.7840026	.599438
/cut2	1.092407	.3544086			.3977792	1.787035

<u>5.10.2 Model 2 Analysis and Results</u>

Model 2 contains variables of involvement, product knowledge, and motivation that were
described in sections 4.2.8, 4.2.9, and 4.2.10 respectively. With online booking intention
(three categories) set as the response variable and each involvement, product knowledge,
and motivation variable designated as a predictor the same process of association study,
univariate analysis and model building was followed. (Predictor variables were
organized in the following categories: the first two 'knowledge' variables in the Table
below used five categories 1= very familiar, 2=familiar, 3=a little familiar, 4=neutral, 5=a
little unfamiliar. The third knowledge variable kept all seven categories, 1= very
familiar, 2=familiar, 3=a little familiar, 4=neutral, 5=a little unfamiliar, 6=unfamiliar,
7=very unfamiliar. The first 'involvement' variable in the Table used five categories,
3=unimportant, 4=4, 5=5, 6=6, 7=very important. The other 'involvement' variables
used five categories, 1=very, 2=2, 3=3, 4=4, 5=very opposite. Lastly, all motivation
variables used five categories, 1=definitely agree, 2=generally agree, 3=somewhat agree,
4=neutral, 5=somewhat disagree).

The resulting model is shown in Table 5.102. The model as a whole yielded a log
likelihood of -946.36 and an R^2 of 15.74%. This confirms the importance of these
additional variables even though the model is not as good a fit as Model 1 given that the
log likelihood is smaller. A key predictor of online booking intention was 'information'
motivation as expressed in the survey statement, "Because it gives quick and easy access
to large volumes of information". Survey respondents highly motivated in this fashion
could easily account for them being more knowledgeable about travel products than their
friends and acquaintances. Another significant predictor of online booking intention was
'product knowledge compared to friends'. Product knowledge is obviously a key
predictor since three different product knowledge variables show as significant in this
model. Factor analysis indicates respondents recognized the same concept of product
knowledge in all six product knowledge questions asked in the questionnaire. In the
interest of parsimony two of these variables could be dropped without compromising the
predictive integrity of the model. Involvement is also important, though factor analysis
reveals different aspects of involvement are being evaluated by respondents and so these
variables should be kept.

Table 5.10 2
Model 2

Ordered logistic regression   Number of obs   =   1122
                        LR chi2(42)   =   353.59
                        Prob > chi2   =   0.0000
Log likelihood = -946.3569   Pseudo R2   =   0.1574

Predictor Variables	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
know products_2	1.42138	0.4021235	1.24	0.214	.8163876	2.474709
know products_3	2.265074	0.7456288	2.48	0.013	1.188172	4.318027
know products_4	2.688009	1.160722	2.29	0.022	1.153106	6.266027
know products_5	2.472388	1.180543	1.90	0.058	.9697851	6.303152
know products - friends_2	1.73192	0.4123519	2.31	0.021	1.08609	2.761786
know products - friends_3	2.294179	0.685995	2.78	0.005	1.276747	4.122396
know products - friends_4	3.694205	1.269418	3.80	0.000	1.883769	7.244599
know products - friends_5	3.405407	1.332792	3.13	0.002	1.581356	7.333449
know destinat- agent_2	0.4064232	0.1339048	-2.73	0.006	.2130747	.7752201
know destinat- agent_3	0.3848565	0.1294188	-2.84	0.005	.1990941	.7439423
know destinat- agent_4	0.7087415	0.2533918	-0.96	0.336	.3516926	1.428277
know destinat- agent_5	0.5274955	0.1862276	-1.81	0.070	.2640643	1.053726
know destinat- agent_6	0.5477279	0.2051782	-1.61	0.108	.2628487	1.141363
know destinat- agent_7	0.5669857	0.2517587	-1.28	0.201	.2374723	1.353727
involvt -importantR-_4	1.244616	0.414085	0.66	0.511	.6483953	2.389082
involvt –importantR_5	0.7358123	0.2204664	-1.02	0.306	.4090038	1.323752
involvt –importantR_6	0.6018485	0.1508861	-2.03	0.043	.3682029	.9837555
involvt –importantR_7	0.5134391	0.1196775	-2.86	0.004	.3251489	.810766
involvt -interest_2	1.455826	0.2809873	1.95	0.052	.9972865	2.125195
involvt -interest_3	1.910878	0.4570903	2.71	0.007	1.195699	3.053824
involvt -interest_4	1.789493	0.5585396	1.86	0.062	.9706248	3.299198
involvt -interest_5	1.148814	0.257665	0.62	0.536	.7401773	1.783052
involvt -involving_2	1.502138	0.2924143	2.09	0.037	1.025676	2.199932
involvt -involving_3	1.115191	0.2521972	0.48	0.630	.7159006	1.737185
involvt -involving_4	1.134252	0.2758304	0.52	0.604	.7042263	1.826867
involvt -involving_5	1.571724	0.3928404	1.81	0.070	.9629971	2.565238
involvt -fascinating_2	0.7241881	0.1505663	-1.55	0.121	.4818121	1.088492
involvt -fascinating_3	0.5193604	0.118872	-2.86	0.004	.331623	.8133792
involvt -fascinating_4	0.7227088	0.1793371	-1.31	0.191	.4443666	1.175399
involvt -fascinating_5	0.8549578	0.2288317	-0.59	0.558	.5059625	1.444678
conven - less effort_2	1.055353	0.2066437	0.28	0.783	.7189989	1.549058
conven - less effort_3	1.285446	0.2663133	1.21	0.225	.8564567	1.929311
conven - less effort_4	2.032516	0.5808509	2.48	0.013	1.160856	3.558687
conven - less effort_5	2.154875	0.5739149	2.88	0.004	1.278553	3.631829
conven - anytime_2	1.402351	0.2206199	2.15	0.032	1.030255	1.908838
conven - anytime_3	2.028492	0.4911488	2.92	0.003	1.262049	3.260397
conven - anytime_4	1.4412	0.656126	0.80	0.422	.5904773	3.517592
conven - anytime_5	1.611523	0.864618	0.89	0.374	.5630514	4.61238
info - volumes_2	1.645063	0.2470594	3.31	0.001	1.225595	2.208096
info - volumes_3	1.770851	0.4178338	2.42	0.015	1.115168	2.812055
info - volumes_4	3.209755	1.53354	2.44	0.015	1.258315	8.187558
info - volumes_5	10.74689	12.53421	2.04	0.042	1.092742	105.6934

	/cut1	.9325723	.3743291		.1989007	1.666244
	/cut2	2.044496	.3783624		1.30292	2.786073

<u>5.10.3 Model 3 Analysis and Results</u>

A stepwise method was used in which variables from Models 1 and 2 were selected either for inclusion or exclusion from Model 3 in a sequential fashion based on statistical criteria. Following the fit of the multivariable model, the importance of each variable included in the model was verified through an examination of the Wald test statistic with a level of significance of 0.05. Variables that did not contribute to the model based on these criteria were removed and a new model was fit. The new model was compared to the old model using the likelihood ratio test. The estimated coefficients from the full model were compared to the remaining variables. Variables whose coefficients have changed noticeably in magnitude were subject to close inspection to assess if one or more of the excluded variables were important. This process of deleting, refitting and verifying continued until only the important variables were included in Model 3. A noteworthy variable dropped through an examination of the Wald test statistic from Model 1 (Time Internet) is included as a significant predictor in Model 3. This was the variable related to the question, "About how much time do you use the Internet each week for any reason other than work?" None of the demographic variables of gender, age, income, or education were significant in the multivariable model although income and education were significant in univariate testing with the response variable. Table 5.103 illustrates the results of all the retained variables.

The model as a whole yielded a log likelihood of -646.70 and an R^2 of 22.22%. This is clearly the best fitting final model. The log likelihood is the largest of the three final models and it explains the greatest amount of variability in the outcome variable. Hosmer and Lemeshow (2000) indicate that diagnostic statistics and goodness-of fit tests have not been extended for use with ordinal models.

Two key predictors from Model 2 are retained in Model 3. An important predictor of online booking intention in Model 3 is 'information' motivation. Another key predictor of online booking intention is 'product knowledge'. An additional predictor is social acceptance, where variable 'Some of my friends_4', shows an odds ratio of 3.08. Furthermore, the odds could be as little as 1.765 or as much as 5.381 with a 95% confidence interval. Convenience motivation is a significant predictor as well as having a positive attitude toward travel booking with a website.

Table 5.10 3
Model 3

Ordered logistic regression   Number of obs =   841
LR chi2(36)   =   369.13   Prob > chi2 =   0.0000
Log likelihood = -646.70306   Pseudo R2   =   0.2220

Predictor Variables	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Some of my friends_2	1.317252	0.2887109	1.26	0.209	.8572454	2.024101
Some of my friends_3	2.382851	0.5522984	3.75	0.000	1.512882	3.753089
Some of my friends_4	3.08194	0.8764173	3.96	0.000	1.765088	5.381236
Destination tour_1	0.6673071	0.1193163	-2.26	0.024	.4700333	.9473772
Hotels_1	0.5826351	0.1220075	-2.58	0.010	.3865001	.8783015
Airline tickets_1	0.4528628	0.0991482	-3.62	0.000	.2948543	.6955458
info - volumes_2	1.479185	0.2657191	2.18	0.029	1.040192	2.103446
info - volumes_3	1.136576	0.3324216	0.44	0.662	.6406816	2.016299
info - volumes_4	5.205959	3.270445	2.63	0.009	1.519728	17.83346
info - volumes_5	1.23E+14	6.07E+20	0.00	1.000	0	.
Long-distance train_1	0.3711771	0.1564427	-2.35	0.019	.1624872	.8478973
involvt -importantR_4	0.9119874	0.3995499	-0.21	0.833	.386429	2.152325
involvt -importantR_5	0.7596313	0.2885032	-0.72	0.469	.3608459	1.59913
involvt -importantR_6	0.5970821	0.1898895	-1.62	0.105	.3201306	1.11363
involvt -importantR_7	0.4240772	0.1225824	-2.97	0.003	.2406574	.7472924
know products_2	2.558378	0.7461747	3.22	0.001	1.444455	4.531329
know products_3	4.448903	1.34558	4.94	0.000	2.459264	8.048234
know products_4	6.13559	2.638694	4.22	0.000	2.641104	14.25368
know products_5	4.906514	2.428835	3.21	0.001	1.859556	12.94604
conven - anytime_2	1.156033	0.2120137	0.79	0.429	.8069781	1.656069
conven - anytime_3	2.235479	0.6169236	2.92	0.004	1.301563	3.839513
conven - anytime_4	0.9858012	0.5329235	-0.03	0.979	.3416885	2.844123
conven - anytime_5	2.898528	1.751958	1.76	0.078	.8865136	9.476971
Attitude positiveW_2	1.498511	0.3605825	1.68	0.093	.9350559	2.401497
Attitude positiveW_3	1.988891	0.5047609	2.71	0.007	1.20944	3.270676
Attitude positiveW_4	1.7568	0.4144557	2.39	0.017	1.106397	2.789547
Belief convenientA_2	0.6672882	0.1911064	-1.41	0.158	.3806586	1.169745
Belief convenientA_3	0.6222962	0.1665248	-1.77	0.076	.3683138	1.05142
Belief convenientA_4	0.438166	0.1156215	-3.13	0.002	.2612324	.7349374
Belief convenientA_5	0.3642798	0.1010474	-3.64	0.000	.211505	.6274071
Belief convenientA_6	0.4767156	0.1441961	-2.45	0.014	.2635053	.862441
Belief convenientA_7	0.5241969	0.1557032	-2.17	0.030	.2928602	.9382714
Time Internet_2	0.6833531	0.1290117	-2.02	0.044	.4720033	.9893396
Time Internet_3	0.8130282	0.1554328	-1.08	0.279	.5589526	1.182596
How long using net_2	0.8292258	0.1316106	-1.18	0.238	.6075393	1.131804
Number of trips_2	0.6256372	0.142688	-2.06	0.040	.4001202	.9782606
/cut1 | -.2540939	.4864935				-1.207604	.6994159
/cut2 | 1.03672	.4865252				.0831483	1.990292

The probability of group membership in each category can be easily determined using the parameter estimates together with the cut points by employing a post-estimation predict command in Stata. Table 5.104 shows the probability of booking online (intention) when involvement is 'unimportant' - category 3. Calculations imply that the probability a respondent would be 'highly likely' to book online given their involvement with travelling and travel planning is unimportant to them is about 35.6%. The probability a respondent would be 'somewhat likely' to book online given that their involvement with travelling and travel planning is unimportant to them is about 44.5%.

Table 5.10 4
Group Membership - involvement is 'unimportant'

Variable		Obs	Mean	Std. Dev.	Min	Max
Highly likely		71	.3558734	.2870786	.0067716	.9408474
Likely		71	.1990489	.0982982	.0174165	.3116957
Somewhat likely		71	.4450777	.3088054	.0169987	.9758119

In contrast, Table 5.105 shows the probability of booking online (intention) when involvement is 'very important' (category 7) to a respondent. Calculations imply that the probability a respondent would be 'highly likely' to book online given their involvement with travelling and travel planning is very important to them is about 63.8%. The probability a respondent would be 'somewhat likely' to book online given that their involvement with travelling and travel planning is very important to them is about 18.4%.

Table 5.10 5
Group Membership - involvement is 'very important'

Variable		Obs	Mean	Std. Dev.	Min	Max
Highly likely		498	.6383429	.2591405	3.14e-15	.9882993
Likely		498	.1780513	.0923791	8.28e-15	.3119304
Somewhat likely		498	.1836058	.2021924	.0032458	1

We can interpret any other probability of group membership in each category of predictors in a similar way. For instance, Table 5.106 shows the probability of booking online (intention) when product knowledge is 'very familiar' - category 1. These results imply that the probability a respondent would be 'highly likely' to book online given they are very familiar with travel products, destinations and travelling in general, is about 81.3%. The probability a respondent would be 'likely' to book online given they are very familiar with travel products, destinations and travelling in general, is about 11.01%.

Table 5.10 6
Group Membership - product knowledge is 'very familiar'

Variable		Obs	Mean	Std. Dev.	Min	Max
Highly likely		128	.8134754	.1906701	.0872361	.9882993
Likely		128	.1101715	.0890908	.0084549	.3119293
Somewhat likely		128	.0763531	.1119224	.0032458	.7421255

The probability of booking online (intention) when a travel product such as 'Destination Tour/Attraction tickets' were previously purchased - category 1, can also be determined (see Table 5.107). Results imply that the probability a respondent would be 'highly likely' to book online given they purchased 'Destination Tour/Attraction tickets' is about 70.62557 %. The probability a respondent would be 'somewhat likely' to book online given that they purchased Destination Tour/Attraction tickets previously is about 12.80%. Calculations imply that the probability of booking online (intention) is less when the travel product 'Destination Tour/Attraction tickets' was not purchased (category 0) in the past. The probability that a respondent would be 'highly likely' to book online given they did not purchase Destination Tour/Attraction tickets is about 46%. The probability a respondent would be 'somewhat likely' to book online given that they did not purchase Destination Tour/Attraction tickets is about is about 33%.

Table 5.10 7
Group Membership - 'Destination Tour/Attraction tickets'

Variable		Obs	Mean	Std. Dev.	Min	Max
Highly likely		316	.7062557	.2142796	.0668898	.9882993
Likely		316	.1657184	.0937896	.0084549	.3119494
Somewhat likely		316	.128026	.1347103	.0032458	.7932556

Calculations using the parameter estimates together with the cut points imply that a consumer who has taken fewer than five leisure trips in the past year has a reduced probability, 52.12%, of being 'highly likely' to book online compared to a consumer who took more than six leisure trips, 71.36%. The probability increases from 71.36% to 75.4% when a consumer has been using the Internet longer (how long using Internet). The probability increases again to 78.8% when the length of time each week using the Internet is larger and to 98% probability when the customer has previously purchased long-distance train tickets. This predictive ability of the Model is valuable to travel website operators.

Model 3 includes the following 14 socio and psychographic predictors: social acceptance - having some friends and family who buy travel products on the Internet, a belief that booking with a travel agent is inconvenient, an attitude that booking with a travel website is positive, the number of leisure trips taken in a year, the amount of time spent each week on the Internet, information motivation – the Internet provides quick and easy access to large volumes of information, convenience motivation – the Internet being available anytime and anywhere, being involved with travel and travel planning and considering it important, using the Internet for a longer period of time, and feeling knowledgeable about travel products, destinations and travelling in general. Prior experience predictors were booking travel products online, specifically, destination tour/attraction tickets, hotels or accommodations, airline tickets, and long-distance train tickets.

5.11 DEMOGRAPHIC DIMENSIONS

Patterns of relationship between demographic variables and research variables are always of interest to marketers. Consequently, relationships between age, education level, household income and gender were examined in this study as well. The following are the relevant hypotheses tested.

H2a   Age is negatively related to intention to book travel through the Internet.
H2b   Level of education is positively related to intention to book travel through the Internet.
H2c   Level of household income is positively related to intention to book travel through the Internet.
H2d   Gender and purchase behavior are independent of each other.

5.11.1 Age and Online Booking Intention

H2a   Age is negatively related to intention to book travel through the Internet.

The relationship between age and online travel booking intention was investigated using Spearman's Rank Order Correlation. Age is negatively associated with intention to book travel through Internet but this association is negligible, rho = -0.0286, n = 1142. The hypothesis of independence cannot be rejected as the p-value = 0.3350 > 0.05. To check if rho is significantly less than zero, we divide the p-value by 2. So for a one tail test (left tail) the p-value = 0.1675. This means there is no significant negative relationship between age and intention to book travel online. Therefore, hypothesis H_{2a} is not supported.

Categories of online booking intention were merged so that three remain, 1 = highly likely, 2 = likely, and 3 = somewhat likely. A Kruskal-Wallis test revealed there was a statistically significant difference in online booking intention levels across different age categories: under 18, n = 1: 18 to 25, n = 137: 26 to 35, n = 294: 36 to 45, n = 302: 46 to 55, n = 270: 56 to 65, n = 119: 66 to 70, n = 11: over 70, n = 8), χ^2 (7, n = 1142) = 15.591, p = 0.029. The oldest age level recorded a higher median score (Md = 3) than any other

age level category, indicating a 'somewhat likely' intent to book online. A negative
relationship between age and booking intention was anticipated. Spearman's correlation
confirms such a relationship even though it is not statistically significant. Table 5.111
shows all other median scores.

Table 5.11 1   Age

How likely is it that you will BOOK OR PURCHASE any travel product through the Internet within the next six months?

In which one of the following categories does your current age fall?	N	Median
under 18	1	1.00
18 to 25	137	2.00
26 to 35	294	1.00
36 to 45	302	1.00
46 to 55	270	1.00
56 to 65	119	1.00
66 to 70	11	2.00
over 70	8	3.00
Total	1142	1.00

Figure K5.111 in Appendix K plots the mean scores of online travel booking intention,
and age graphically using all eight categories of age. In the levels of online travel
booking intention a score of 1 means 'highly likely' and higher scores mean less likely.
A sigmoidal or S-shaped relationship is clearly evident with females who represented the
largest number of survey respondents. This pattern will influence the data that
Spearman's correlation uses in its calculation. Intention to book travel online decreases
beyond the age of 65 for both males and females.

5.11.2 Level of Education and Online Booking Intention

H2b   Level of education is positively related to intention to book travel through the
        Internet.

The relationship between education and online booking intention was studied using
Spearman's correlation. Education level is negatively associated with intention to book
travel through the Internet, rho = -0.1703, n = 1140. The hypothesis of independence is
rejected since the p-value = 0.0000 < 0.05. Since the Spearman's rho is -0.1703, it is
significantly less than zero as the p-value for a left tail test will be less than the 0.05 level

of significance. This means there is a significant negative relationship between level of education and intention to book travel online. Hypothesis H$_{2b}$ is not supported.

Categories of online booking intention were collapsed so that three remain, 1 = highly likely, 2 = likely, and 3 = somewhat likely. A Kruskal-Wallis test revealed there was a statistically significant difference in online booking intention levels across different education categories (some grammar school, n = 2: completed grammar school, n = 3: some high school, n = 22: completed high school, n = 105: some trade school, college, or university, n = 266: completed trade school, college, or university degree, n = 545: graduate studies or masters degree, n = 147: post graduate studies or advanced PhD degree, n = 50), χ^2 (7, n = 1140) = 40.522, p = 0.000. The education level groups who have completed trade school, college, university and higher level qualifications recorded a lower median score (Md = 1) than any other education level category, indicating 'highly likely' intent to book online. This seems to contradict Spearman's test results of hypothesis H$_{2b}$.

Figure K5.112 in Appendix K plots the mean scores of online travel booking intention, as well as education graphically using eight category levels of education. A positive relationship is seen where booking intention increases with rising education levels. This supports the Kruskal-Wallis test results.

5.11.3 Household Income and Online Booking Intention

H2c   Level of household income is positively related to intention to book travel through the Internet.

Spearman's correlation was employed to evaluate the relationship between household income and online travel booking intention. Household income is negatively associated with intention to book travel online, rho = -0.1340, n = 1138. The hypothesis of independence is rejected as the p-value = 0.0000 < 0.05. Because Spearman's rho is -0.1340, it is significantly less than zero as the p-value for a left tail test will be less than 0.05. This means there is a significant negative relationship between level of household income and intention to book travel through the Internet. Hypothesis H$_{2c}$ is not supported.

Categories of online booking intention were collapsed so that three remain, 1 = highly likely, 2 = likely, and 3 = somewhat likely. The Kruskal-Wallis test conducted with the demographic of income and online booking intention revealed a statistically significant difference in online booking intention levels across different income groups (under $25,000, n = 50: $25,000 to $49,999, n = 165: $50,000 to $74,999, n = 227: $75,000 to $99,999, n = 183: $100,000 to $149,999, n = 222: $150,000 or more, n = 141: prefer not to answer, n = 150), χ^2 (6, n = 1138) = 44.622, p = 0.000. The income group under $25,000 recorded a higher median score (Md = 3) than any other income group, indicating a 'somewhat likely' intent to book online, whereas, the higher income groups recorded a median score (Md = 1) indicating 'highly likely' intent. Mid-level income groups ($25,000 - $74,999) had a median score (Md = 2) showing a 'likely' intent to

book online. These results were anticipated but they are not confirmed in hypothesis test H_{2c}. Even though Kruskal-Wallis suggests there is a statistically significant difference in online booking intention levels across different income groups, Spearman's Rank Correlation shows there is a significant negative or opposite relationship between level of household income and intention to book travel through the Internet so that hypothesis H_{2c} was not supported.

Figure K5.113 in Appendix K plots the mean scores of online travel booking intention, as well as the seven categories of income. A curvilinear relationship is clearly evident. Online travel booking intention becomes more likely with increasing annual household income until the income category of \$100,000 to \$149,999, and then the likelihood intent to book online reverses sharply. This could easily explain the conflicting results of Spearman's and the Kruskal-Wallis test.

5.11.4 Gender and Online Booking Intention

H2d   Gender and purchase behavior are independent of each other.

The relationship between gender and online travel booking intention was investigated using Spearman's Rank Order Correlation. Gender and purchase behavior are independent of each other, rho is 0.0366, n = 1130. The hypothesis H_{2d} is not rejected since the *p*-value = 0.2185 > 0.05.

Categories of online booking intention were collapsed so that three remain, 1 = highly likely, 2 = likely, and 3 = somewhat likely. A Kruskal-Wallis test was conducted with the demographic of gender and online booking intention and it revealed no statistically significant difference in online booking intention levels across gender, thus confirming the Spearman's correlation analysis.

5.12   DEMOGRAPHIC ANALYSIS

The results of Spearman's Rank Order Correlation hypothesis tests H_{2a}, H_{2b}, and H_{2c} are rather puzzling when these results are compared with Kruskal-Wallis tests for most demographic variables. However, there may be reasonable explanations for this that the charts in Appendix K imply.

It is natural to assume consumers who book travel online are younger and have a higher education and income. However, there appear to be demographic parameters within which marketers should focus their efforts. Higher income people may not book online as often as marketers believe. Wealthy people may feel their time is too valuable to spend hunting around the Internet for travel deals and so they call a travel agent and are willing to pay them for their effort. Figure K5.113 suggests marketers should target people in a family income range no higher than between \$100,000 to \$149,999. It could be that above this range people call a travel agent. Since income and education are correlated, there could be an education level ceiling above which marketers should not target also. In this study Spearman's correlation between education level and income is

positive, rho = 0.1263, n = 1143, *p*-value = 0.0000 < 0.05. Figure K5.115 in Appendix K plots education level and mean number of leisure trips taken in the past year. The number of trips forms a plateau at an intermediate education level - some trade school, college or university, and at the post-graduate studies level, the mean number of leisure trips decreases. Highly educated people could be time-starved and have less leisure time; as a result, they take fewer vacations and they may also want an agent to arrange their trip rather than spending time online. Figure K5.111 suggests online travel marketers should target both male and female consumers up to the age of 65. Non-bookers tend to be those aged 65 plus years and have a less 'wired' lifestyle. Perhaps older respondents are less likely to book online as the Internet is overwhelming to them so they rather call a travel agent.

Given final Model 3 significant predictors, 'Time Internet', combined with 'How long using net', one could argue that travel website operators should target consumers having a 'wired' lifestyle where they spend a lot of time on the Web, have been using the Internet for a long time, and have had a lot of experience with it. Managers should focus on these customers and profile these individuals as they represent key segments that could drive sales volume and increase conversion rates.

Lastly, the questionnaire operationalized travel website usage with a single item asking, "How often do you visit a travel website to research or book a leisure travel product?" This is a similar volume segmentation variable as outlined in a study by Goldsmith and Litvin (1999) where they investigated travel agency usage. Such volume segmentation may be meaningful in travel website usage especially when used in combination with key psychographic and demographic variables. Figure K5.116 graphs education level and the mean number of times a respondent visited a travel website to research or book a travel product. There appears to be a gender difference at the higher education levels. Figure K5.117 graphs age and mean number of times visited a travel website. Above the age range of 56-65 there is also a gender difference in mean number of website visits.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 SUMMARY AND DISCUSSION OF RESULTS

The main point of this research as stated in section 1.2 was to identify the determinants involved in a consumer's decision process as they plan and book leisure travel products online. This research started with identifying the many factors that affect consumers' use of human and online aids as they make leisure travel planning decisions. The research then focused on the decision process that relies on online aids and how these differ among market segments. The study provides tourism marketers with some understanding of leisure travelers and the factors guiding the travel planning and purchasing process, thereby helping marketers design suitable travel websites, online tools, travel agency services and marketing strategies. This is expected to advance understanding and make a new contribution to the topic of E-Commerce.

The Conceptual Framework used and hypotheses tested are consistent with the aim of assessing determinants of online leisure travel planning decision processes, and which factors are most strongly associated with online booking intention. The Framework helps one evaluate how a consumer purchases a travel product with the assistance of an online aid, guidance of an offline aid, or with the assistance of both an online and offline aid. The central process this research documents is the impact of various factors on the consumers' choice of online aids for travel purchases. Consequently, a portion of the Framework was used to test the main hypotheses emanating from research questions.

The key research questions and hypotheses tested in this research were derived from theoretical frameworks, primarily, the theory of reasoned action and innovation adoption theory. Hypotheses shown in Figure 10 revolved around beliefs, attitudes, social support, social acceptance, prior experience and how these determinants emerged to affect online travel booking intention. Key variables from these hypotheses were tested through ordinal logistic regression in Model 1.

Complementary questions and hypotheses were: 1) the significant differences that may exist in terms of age, gender, education, or family income of those consumers who intend to purchase leisure travel online, 2) motivations behind purchasing travel products with online aids, 3) gratifications a consumer derives from the online purchase of leisure travel products , 4) how the gratifications and motivations differ among market segments of those who purchase online, 5) the level of product knowledge and involvement of consumers who purchase online, 6) how ODAs might gain consumers' trust and influence consumers in their leisure travel planning decision process. Model 2 consisting of the variables knowledge, involvement and motivation and how they impact online booking intention was developed using logistic regression.

6.1.1   Determinants

Chi-square test of independence, univariate analysis and stepwise logistic regression techniques were applied to develop a predictive model containing 14 socio and psychographic variables featured in Model 3. This model contains key variables from Model 1 and Model 2 and was deemed the best fitting final model. Variables affecting online travel booking intention include: social acceptance for travel booking, prior experience booking specific travel products online including destination tour/attraction tickets, hotels or accommodations, airline tickets, long-distance train tickets, beliefs that booking with a travel agent is inconvenient, an attitude that booking with a travel website is positive, information motivation, convenience motivation, involvement with travel, being knowledgeable about travel products, destinations and travelling in general, the number of leisure trips taken in a year, how long one has used the Internet, and the amount of time spent each week on the Internet.

6.1.2   Decision Making Process

Consumers feeling overwhelmed by information on the Internet (Dabholkar, 1996), having perceptions of complexity in an online environment, or perceiving risk with

online transactions, are less likely to book travel products online. Furthermore, when consumers lack knowledge (Brucks, 1985; Park & Lessig, 1981) about travel and need a human contact (Bobbitt & Dabholkar, 2001; Dabholkar, 1996) they consult an offline aid or travel agent. Even though some consumers think there is a financial incentive to book online the incentive is not sufficient to overcome these concerns. These consumers lack trust in the Internet and their own ability (Jarvelainen & Puhakainen, 2004) and would rather put trust in a travel agent to guide their travel purchases. Offline bookers are not motivated by the convenience or wealth of information on the Web; in fact, they find this information daunting, risky and confusing (Bei, Chen & Widdows, 2004).

On the other hand, when consumers have affirmative feelings and attitudes about the online medium and using technology in general (Bellman, Lohse & Johnson, 1999; Morrison, Jing, O'Leary & Cai, 2001; Stafford & Gonier, 2004, Bobbitt & Dabholkar, 2001; Dabholkar, 1996) and have positive perceptions about the financial benefits of booking online, they are more likely to be online bookers. This is especially the case if they are aware of other people who booked online and if they have been using the Internet for longer periods of time. Online information sources from other consumers are regarded as critical with experience products such as travel products (Bei, Chen & Widdows, 2004). Findings from the Web User Survey by the Georgia Technology University (1998) also reveal that online purchasing increases incrementally with online experience. This research proposes that consumers who booked travel products such as destination tour/attraction tickets, hotels or accommodations, airline tickets, long-distance train tickets demonstrate a greater intention to book travel products online. It could be there is a hierarchical structure of vacation planning and purchasing where travelers book the travel products listed above before booking other travel products. One conclusion of Beldona's (2003) work is that early in the planning process travelers reduce uncertainty by taking care of core elements of travel such as transportation and accommodations. In addition, according to Hyde (2008), once accommodation has been booked, the vacation itinerary is relatively predetermined and fixed. Moreover, we could presume that once consumers have become comfortable purchasing online they are more receptive to buying other travel products online.

Online bookers are motivated, travel is important to them and so they take a great interest in travel, becoming involved with it, and gathering large volumes of information over the Internet and elsewhere (Payne, Bettman & Johnson, 1993; Fodness and Murray, 1999). They also develop ways of reducing risk by searching for information to the point where they feel confident in their knowledge of travel (Morrison, Jing, O'Leary & Cai, 2001) and feel more familiar about travel than their friends and acquaintances. Thus, increased knowledge equates to greater confidence (Morrison, Jing, O'Leary & Cai, 2001) and these are characteristics of those who are early adopters of technology. Information search could be viewed as an alternative to experience. Hoffman and Novak (1996) determined that a consumer's confidence in his/her ability to perform is related to how easy it is to shop using the Internet. Furthermore, information is sought after to aid in decision making and the convenience of the Internet makes information search and online booking enjoyable and a positive experience. Travelers regard the Internet as easy to use

and useful (Bei, Chen & Widdows, 2004; Dabholkar, 1996) and they feel empowered by online information and the ability to book travel online.

Survey respondents' attitude of desirability toward online travel booking is shaped by their beliefs that online travel booking is safe using their credit card, easy, enjoyable, and they highly regard the importance of its convenience. Interestingly though, survey respondents indicated the prime reason for switching from online booking intention to booking through a travel agent is credit card concerns. They probably believe it is safer to use a credit card when booking with an agent than a website. A desirable attitude coupled with a positive one are the key variables leading to online travel booking intention. Respondents believe it is more expensive and inconvenient booking with an agent than a website. Also, it is more enjoyable and easier booking with a website.

6.2 CONCLUSIONS AND MANAGERIAL IMPLICATIONS

A new age for humanity and business is dawning. There are signs all around us that point to this new ordering of things and the Internet is certainly evidence of this. The Internet comes at a critical junction in human history and it cannot be ignored. The Internet brings with it the opportunity to apply novel forms of intelligence such as AI applications, ODAs or online intelligent tools. The new age is accompanied by an emerging consciousness where different paradigms abound and they necessitate innovative business practices and models. Mass customization, customer relationship management, information gathering, collaboration with business partners through sharing of information, database mining and predictive analytics are just some of the ways in which business appropriately responds to the enormous shifts the world is experiencing. The Internet is a powerful force that could be harnessed to benefit virtually every business. How it impacts a business is dependent on the actions of business managers. If an organization recognizes these shifts and the implications they bring, the organization can change its business practices to suit the new era. If these shifts are ignored, the business landscape will not reserve a place for the organization, but for its rivals. In reference to the role of the Internet and related technologies and the appropriate organizational response to avoid becoming marginalized, Li (2007) writes, "New structures, processes and inter-organizational relations as well as new ways of thinking and working need to be implemented in their organizations" (p.130).

This study holds important strategic implications for the travel industry, and the following are offered to travel website operators and travel agents so they will prosper in the new marketplace. The first set of implications deal with consumers' beliefs and attitudes. Websites should note the perceptions online consumers have that booking with a travel website is positive. Understanding what particular attributes of online shopping make people feel this way is important. One could speculate that online bookers have not had negative experiences with credit card safety, for instance. They will feel assured about doing transactions online when online merchants indicate how these risks are mitigated. It could be that online bookers regard the savings in time and money as a positive benefit. Yet, these savings are not always realized by using a website, so the online retailer should consider how to convey the belief that savings will result.

Furthermore, because these consumers expect to save time and money, the online retailer should meet those consumer needs if it wants to satisfy consumers. However, website operators should recognize that a financial incentive is not enough to attract certain consumers. Many online bookers are more motivated by the rich information available on the Web and the convenience of accessing it. These bookers find the use of travel agents inconvenient and probably inefficient. Offline consumers often want the assistance and interaction only a human could provide. Travel agencies are best advised to make their services convenient, efficient and very personable.

Travel agencies should be aware that consumers believe the services provided by this offline channel have been reduced and so consumers are looking for additional services to be provided in order to become loyal to their agencies. Law, Leung, & Wong (2004) report it is unclear whether travelers consider travel agencies less valuable given the presence of online travel websites. Consumers are aware of how the Internet can empower and engage them and they are not willing to give this up even if travel agents offer them good personal service. Travel agents could be trained on the usage of intelligent online tools and combine the assistance these tools provide with the unique aspects of advice that comes from a human touch (human intelligence). Agents could think about inimitable aspects of human knowledge, intelligence and reasoning that cannot be currently provided by online intelligent tools. Combining these methods in novel and powerful ways will exceed the expectations of consumers. Planning long haul or complex trips seems to be the strength of travel agencies (Law, Leung & Wong, 2004) and so consumers desiring these vacations should be the targets of agencies. Given the greater involvement and knowledge of consumers inclined to purchase online, travel agents should enhance the quality and value of the services they provide.

Managers must be aware of the demographic and other predictors of future online purchase intention. Demographic variables of income and education could be useful bases for segmentation. Online travel marketers should target both male and female consumers up to the age of 65, those with a family income no higher than the range of $100,000 to $149,999, and those generally having higher education levels. The research findings of Goldsmith and Litvin (1999) using travel agencies were that populations, segmented by usage, are different in both their identifiable psychographic and demographic characteristics. There could be some parallels with travel website usage also. Other predictors of online travel booking such as involvement, knowledge, information and convenience motivation could assist online marketers in segmentation. Besides, targeting consumers who have been online longest, those taking the most number of leisure trips in a year, and spending the most amount of time each week on the Internet would be profitable.

Since it seems prior experience booking specific travel products such as tour/attraction tickets, hotels or accommodations, airline tickets, and long-distance train tickets improves intention to book travel online, hospitality and travel businesses are best to advertise on the websites of these types of companies and collaborate with them in mutually beneficial ways.

Promoting hospitality and travel businesses through social networking websites in such a way that consumers could see whether their friends and family have purchased travel products on the Internet will likely yield good results. This seems justifiable given the dynamics of social acceptance and the support found for hypothesis H_{1g}. It would also be beneficial to identify consumers who feel more familiar about travel than their friends and acquaintances.

Online transactions seem to be preferred by consumers making short haul or uncomplicated trips. Targeting these consumers is a good strategy for online travel merchants.

Davis, Bagozzi and Warsaw (1989) report that perceived usefulness has a direct influence on behavioral intention. Perceived usefulness and ease-of-use are important (Dabholkar, 1996) and therefore marketers should take these into consideration in the design of user-friendly websites. Figures K5.111, K5.114, and K5.116 in this study suggest there are differences in the way men and women research and book online travel products, particularly in older and younger age groups. Hyde's (2008) research indicated females are more exhaustive and elaborative in external information search. It could be that men and women differ in their method of information processing (Kim, Lehto and Morrison, 2007). Females tend to research more and they are more involved (Hyde, 2008). There are differences between genders in preferences for colors according to website ColorMatters.com (http://www.colormatters.com/khouw.html). Travel websites should consider crafting gender-sensitive website content, colors and design with easy to select options such as clicking a female or male symbol icon, just as clicking on a flag icon allows the selection of different languages on websites. Marketers should also consider the fact that online information is accumulated with other information searched by consumers (Bei, Chen and Widdows, 2004), thus traditional information sources cannot be neglected. Some consumers may use the Internet more frequently than average Internet users due to the easy and free access of the Internet.

Attitudes, which are essentially a person's mental state of readiness (Zimbardo and Ebbesen, 1970) have been used to predict and explain behavior in many research studies (Fishbein, 1967; Davis, Bagozzi, & Warshaw, 1989; Trafimow & Sheeran, 2004; Lord, 2004). Consumer attitudes change when people learn by looking, listening or reading (Fishbein, 1962). Instructions, rules or communications can be used to change behavior. Marketers can become sensitive to the varied reasons underlying the attitude in question. Attitudes are formed and maintained because of needs for information or for social acceptance by others, for example. Giving new information could help influence attitudes (Fishbein, 1962) as well as providing new sources of reinforcement. Nevertheless, consumers should be seen as more than a rational, information-processor because they are sometimes irrational or inconsistent.

Businesses such as travel websites should consider whether their customers have unfavorable attitudes toward using Internet technology. If customers have unfavorable attitudes, a business should attempt to understand what the causes are and then work toward changing those attitudes. For instance, it could be some customers perceive the

Internet to be overwhelming with the abundance of information and so a business should inform customers of the measures it has taken to help manage the information and customize it in an intuitive and user-friendly manner.

Marketers can use direct reinforcement to change behavior. Reinforcement can take place in the form of rewards. For instance, travel website IgoUgo issues *GO Points*^{SM} redeemable for online gift certificates and frequent-flyer miles to travelers who share their trip stories and pictures. This user-generated content helps the company build a library of honest opinions, tips, and travel experiences. Their travel community has contributed hundreds of thousands of reviews and photos of everything from cheap meals to luxury hotels in 5,500 destinations worldwide.

The next set of implications deal with consumers' motivations and gratifications starting with information motivation. The function of the Internet as an information source does not replace the traditional offline sources, but adds valuable information. Marketers of experience products should value the importance of the Internet and provide more impartial information for consumers (Bei, Chen & Widdows, 2004). One way to do this might be to create a discussion room for consumers to exchange experiences and to invite neutral input (Armstrong & Hagel, 1996). Customer-to-customer (C2C) know-how exchanges are being recognized as having the potential to create customer value that could result in positive outcomes for organizations such as enhanced loyalty intentions.

Given the knowledge of how travelers seek out and use various information sources such as customer reviews, wiki sites, and ratings, a travel website operator could enhance its credibility in a number of ways. It can make available customer reviews and ratings, acquire an industry seal of accreditation or approval, and provide the ability to customize the information offered. Other ways to provide more information for consumers might be to create a discussion room, blog or web log that facilitates neutral input and the exchange of experiences. Any one of these has the potential to be a powerful feature that could radically change information flows and exchanges. Li (2007) points out, for instance, that blogs might even challenge the dominance of established media.

To appeal to consumers who have high information motivation, websites should accommodate interactivity with features such as keyword searches and multimedia shows. In contrast, consumers with high social-interaction motivation would benefit from other website features such as feedback, comments, information exchanges, online discussion forums, chat rooms, a sense of pseudo-community among customers, and so forth. To alleviate customers' concerns about transactional privacy, a company should provide anonymous guest access to information databases and make confidentiality policies clearly evident on the website.

Researchers have found positive relationships between perceptions of convenience and the use of Internet banking (Gerrard and Cunningham, 2003). The convenience motivation seems relevant in this study of leisure travelers also. Those more likely to book travel online were respondents who find the Internet offers convenience.

Online businesses could attempt to know in advance the gratifications consumers expect to receive and match these with gratifications provided. When gratifications obtained either meet or exceed gratifications sought, satisfaction with their website should result. The Internet's ability to provide hedonic benefits such as entertainment, and social interaction should be fully exploited by travel websites. Some of the gratifications discovered by researchers (Cowles and Kiecker, 2000; McGuire, 1974; Korgaonkar and Wolin, 1999; Eighmey and McCord, 1998; Ko, Cho & Roberts, 2004) include: surveillance (knowledge or information); escape from boredom or problems; communication utility (social interaction); filling time, passing time, or habit; diversion, entertainment, or excitement; and advice, decision-making, or guidance. Meeting these gratifications in part or in full via Internet shopping experiences will help satisfy a consumer.

Lassar, Manolis & Lassar (2004) tested whether Internet users' web usage intensity and opinion leadership influenced online banking adoption and found they do. Consumers who have opinions and therefore knowledge about a domain are likely to be early adopters of technology and users of innovative products and services. Identifying opinion leaders in the travel domain by searching though blogs, chat rooms, etc. may be a good strategy for travel web operators.

6.2.1   Recent Developments and Best Practices

In spite of the benefits offered by online intelligent tools, e.g. improved decision quality, increased consumer satisfaction, engendering consumer trust (Murray & Häubl, 2008), they have not yet been widely adopted in the marketplace. Murray and Häubl (2009) offer explanations for this assertion and make the argument that better RAs could be designed today since the technology and knowledge required to do so exists. These tools could be made more accessible and usable. They discuss best practices of personalization technologies, without interrogating consumers, can be seen at Amazon.com, Netflix.com, and Pandora.com. However, one of the best RAs, MyProductAdvisor.com, which uses an interrogation approach, is not as usable as it could be since it presumes a certain level of expertise among users in the products featured such as cars, and televisions, etc. (Murray and Häubl, 2009). Ironically though, consumers who are knowledgeable are less likely to use an RA. Furthermore, the manner in which RAs typically interface with users is unnatural and uncomfortable for many consumers state Murray and Häubl. For example, RAs are not often programmed to consider the context of consumers' enquiries or the emotional and social intelligence that consumers appreciate. An RA that specialized in restaurant recommendations would be best engineered to incorporate GPS information, local maps, time of day, knowledge of food preferences and access to a user's calendar to suggest the top choices of restaurants given these appropriate contexts (Murray and Häubl, 2009). Murray & Häubl point out that Acura's in-car navigation system uses a basic type of such a contextually sensitive RA.

Portable devices such as smartphones, personal digital assistants (PDAs), etc. are growing in popularity worldwide. A smartphone is a device that enables one to make telephone calls, but also has features that you might find on a PDA or a computer. These

devices most often incorporate access to the Web, high quality cameras, and enabling applications such as online computational photography. For travelers, having such a portable communications device is ideal. Consequently, the latest in augmented reality (AR) capabilities are available for these devices through iphone apps, for instance. On a continuum that spans from the real environment to a pure virtual environment, AR falls in between the real and virtual environments (Milgram & Kishino, 1994).

The smartphone's camera viewfinder provides the user interaction with the environment giving the traveler data about their surroundings, nearby landmarks, and other points of interest by overlaying information on the real-time camera view of a smartphone. For example, when a user points their smartphone at a street scene, the image on the phone's screen becomes layered with things such as restaurant reviews of restaurants shown on the street, or directions to the nearest subway stop since the device recognizes its location by combining GPS technology, the smartphone's internal compass and the camera viewfinder.

Numerous AR applications built for smartphones are currently on the market using Google's Android operating system. A special browser app such as Wikitude World Browser runs on Android phones and iPhones. Wikitude.org has thousands of entries for frequently visited tourist locations in London, Paris and other major cities, points of interest (POI) and location-specific, hyperlinked media content which can be viewed on the Wikitude World Browser. Furthermore, companies like Sony are developing systems that a person can wear like sunglasses that will accomplish the same thing (Cascio, 2009). These devices will change sightseeing and touring activities of tourists. Pointing the device on a building can tell you what you are looking at so that the device acts as a guidebook. As a result, companies such as Lonely Planet are collaborating with AR technology developers. Cities, guidebooks, tour companies and resorts are creating their own databases of information that will work with AR browsers so that tourist-friendly information about sights, restaurants, shops, etc. are uploaded to the portable device (Yu, 2010).

One would expect that simple actions of users, such as pointing a mobile device or wearing specialized eyeglasses, is what will be required to enable users to manually interact with smart devices, computers or robots into the future (Masliah,1999; Drascic, Grodski, et al., 1993).

Advanced tools, mobile software, databases, and AR apps for travelers are currently available from Lightning Laboratories, RTP, Google Goggles, and Mobilizy.com. With this very promising emerging AR technology we can expect that travelers will become more and more comfortable using technology and the Web, and the products will become more user-friendly. Consequently, one could predict that the inclination to depend on and use the Internet will grow, hence online travel booking will benefit. Travel marketers could position themselves in the marketplace by interfacing with such technologies and striking alliances with firms that are deploying AR products.

Murray and Häubl, (2009) discovered that people resent being interrogated by a computer through simply responding to a series of questions but would rather interact in a social fashion similar to a human-to-human interaction. Making computers more anthropomorphic is currently being done through avatars that change expressions and whose appearance can be altered by users. Examples of this can be seen at Yahoo's messenger service and through online poker sites such as FullTiltPoker.com. Komiak, Wang, & Benbasat (2005) establish that computer voice and Avatar technologies should be used to increase interface richness and facilitate trust formation between users and virtual salespersons.

As Qui and Benbasat (2009) note, anthropomorphizing a recommendation agent would mean adding humanlike characteristics such as facial expressions, speech, body gestures, human emotion and social intelligence. As they point out, leading commercial producers and Web-based services that facilitate the design of animated characters include Oddcast.com and Haptek.com. The 3D character Greta, and other facial animation engines such as Reallusion.com, are growing in popularity as well (Qui and Benbasat, 2009). Qui and Benbasat's experiments indicate that using human embodiment and voice output in a decision aid significantly influences users' perceptions of social presence, which impacts positively on users' trusting beliefs, perceptions of enjoyment and their intentions to use the intelligent aid. Social presence in their research is a construct that refers to the feeling of 'being with another human'. Their study showed the importance of integrating social presence with traditional TAM constructs to facilitate users' adoption of online recommendation agents. Kumar and Benbasat (2006) through an innovative research design and experimental methodology, show that recommendation and consumer reviews improve social presence aspects of Web shopping.

Murray and Häubl (2009) suggest RAs should be designed so they reduce the initial effort required to use them. Perceived usefulness is influenced by the amount of effort users must expend to use the technology (Davis, 1989). Content filtering is one way of providing better advice than collaborative filtering and it could reduce the effort required by users (Russo, 2002). Search effort is also reduced in a study conducted by Aksoy, Bloom, Lurie, & Cooil (Aksoy, Bloom, Lurie, & Cooil, 2006). Perceived cognitive effort of users is reduced when explanations of the decision aid's actions or functions are given (Wang and Benbasat, 2009).

There is evidence that some progress on other fronts is being made as well. One such example is Lee, Chang & Wang's (2009) experimentation with an ontological recommendation multi-agent that provides a personalized travel route for Tainan City tourists. The Tainan City travel ontology is predefined by human experts and the intelligent agent benefits from ant colony optimization and a fuzzy inference mechanism. These approaches exploit a human understandable, machine-readable format, the ability to reason, and contextually relevant travel tour information that produces a personalized tour plotted on a Google map for travelers. The experiment provided some good results such that the authors plan to expand the domain ontology to other cities.

In another example, researchers test the similarity between an electronic agent and a consumer in terms of the weights given to attributes of a product and the decision strategy used. They found that consumer usage of electronic agent recommendations is very much determined by perceived similarity on the two dimensions listed above. Therefore, agents should think like the consumer they are trying to assist, and when this occurs, the choice quality is higher and the search effort is reduced (Aksoy et al. 2006). Other researchers investigated how the similarity of perceived decision process and decision outcome affects users' evaluations of decision aids. The specific decision aid characteristics of interest were their usefulness and trustworthiness. The approach used by the researchers fit the *Computers are Social Actors* (Reeves & Nass, 1996) paradigm, which states that users of interactive technological artifacts (e.g., computers) perceive the artifacts as social actors and regard their interactions with them as social and interpersonal. Al-Natour, Benbasat & Cenfetelli proposed that users would perceive decision aids in the way they perceive human decision makers. Their findings revealed that only perceived decision process similarity had a significant positive effect on perceived usefulness and trust (Al-Natour, Benbasat & Cenfetelli, 2008).

User-generated content (human recommendations) and peer-to-peer information can be quite influential in the consumer buying process. They could become even more influential as they grow into large and valuable repositories of information. Blogs based on peer-production sometimes contain so much information that users cannot retrieve information effectively (Li & Chen, 2009). Consequently, Li and Chen propose a blog recommendation mechanism that is human-oriented and textually sensitive. In addition, a crucial element of their recommendation system includes trustworthiness. Their mechanism is considered to be an improvement over Weblog aggregators such as Technorati, which provides a search engine platform to assist users, while Blogpulse and Daypop utilize common keyword-based search engines similar to Google. Li and Chen's approach can be seen at the Taiwanese blogging system, Wretch, http://www.wretch.cc/.

Some RAs, even though effective in helping consumers manage information and choice, may not be readily adopted when RAs are regarded by consumers as "double agents" (Murray and Häubl, 2006). "Double agents" because they are designed to influence consumers in a way that benefits sellers while at the same time aiding consumers to make better decisions. A prime example of this is GM's Auto Choice Advisor which may influence a consumer to purchase a GM product over a Toyota. In contrast, electronic decision aids such as Epocrates Inc., http://www.epocrates.com/company/ , show no bias in its recommendations. Their website states the company "develops clinical information and decision support tools that enable healthcare professionals to find answers more quickly and confidently at the point of care."

When appropriate explanations are provided to users, trust in the recommendation agent is enhanced (Wang and Benbasat, 2007). In an earlier study, Wang and Benbasat (2005) tested the validity of trust in RAs using an integrated Trust-TAM framework to reveal that higher consumer trust in an electronic agent results in a greater likelihood of adoption. Additionally in the 2005 study, consumers regarded online recommendation agents as having human characteristics of benevolence and integrity, for example. Gefen

et al. (2003) assert that trust is expected to operate as an antecedent of consumers' intentions to adopt online recommendation agents. Furthermore, when the similarities and differences between virtual and human salespersons were assessed, overall, customers trusted virtual salespersons more than their human counterparts (Komiak, Wang & Benbasat, 2005).

Godek & Murray (2008) experiment with consumers' willingness to pay for advice, and find, that when consumers process information rationally (as opposed to experientially), they are willing to pay for advice.

Murray, Haubl & Johnson (2009) propose a model demonstrating how increased loyalty to a firm can be obtained through personalization of the customer interface and making this apparent to customers. Expedia's ability to remember a traveler's home airport, destination, and travel preferences is such an example.

The product advising function is shifting from humans to software-based product recommendation agents. As these and online decision aids grow in sophistication their importance is being recognized by companies akin to Ebay, which acquired Shopping.com in 2005 as reported in *The Economist* (June 4, 2005, p.11). Increased capabilities of high-end online tools used on travel websites such as Kayak.com, and non-travel sites e.g. BizRate.com, could impact a business considerably. Leaders in travel E-Commerce would be well advised to closely monitor developments in online software entities, incorporate them and continually update them to remain competitive.

6.3   RESEARCH LIMITATIONS

As with all research endeavors, this study has its limitations. Survey respondents expressed their intention to purchase travel online but these do not necessarily reflect enduring behavioral patterns of subjects.

The survey instrument was administered on the Internet. Subjects were referred to the website which included the survey and appropriate instructions. Every respondent saw the same questionnaire and had the same instructions to guide them. Although the survey was pretested it is difficult to determine if participants fully understood the questions asked. In addition, consumers without much Internet experience most likely did not complete the survey.

Respondents were referred to the online survey by various British Columbia businesses that expressed an interest in the research including, The Prestige Hotels & Resorts, Budget Car Rentals, The Kettle Valley Steam Railway, The Fintry Queen boat charters, and DiscoverTheIslands.com. Even though 1198 completed surveys were produced they represent the client base of these businesses and therefore the results may not be generalized to the Canadian or U.S. population. Additionally, an incentive for completing the online study was provided so that systemic bias could result.

Lassar, Manolis & Lassar's (2005) model supported the TAM perspective when applied to online banking adoption just as Yoh's (1999) SEM model verified the usefulness of TAM for understanding online clothing purchases. The TAM perspective is confirmed in this study as it relates to online travel booking also, notwithstanding the fact that external variables of motivation, product knowledge, and involvement were needed to improve the predictive model. Even though several studies show the relevance of the TAM viewpoint there may be better theoretical perspectives for explaining travel buyers' behavior.

Any research attempting to explain travel purchase behavior is difficult since the travel sector is multi-faceted, knowledge intensive, and consumers' relationship with travel is complex and subjective. Additionally, travel products vary widely with respect to their cost, complication, transaction transparency to consumers, and hedonic benefit. This variance is expected to influence a consumer's involvement, their experience with a travel product and these will in due course impact online booking intention.

In this study offline aids were restricted to travel agents but other offline aids exist such as travel brochures, tourism offices, guidebooks, travel magazines, etc. and it is possible some of these are more influential than travel agents.

Online consumer behavior is still rather immature and the Web is changing rapidly, therefore, the relevancy of this research in the long-term may be limited.

In spite of its limitations, this study is believed to provide valuable insights in understanding the online leisure travel decision process and buyer behavior.

6.4   RECOMMENDATIONS FOR FUTURE RESEARCH

There still appears to be a gulf between the visions of what artificial intelligence can accomplish and the capability of current technology used in building intelligent agents. Computers are not as yet very good with knowledge-intensive tasks such as complex travel planning at which experienced travel agents excel. However, advancements in AI and computerization, the increasing power of reasoning systems, and the development of the semantic web can be expected to improve databases of information, the ways in which they are queried, and allow the conversion of data or information into knowledge. ODAs will eventually be able to discover what information is being requested by a consumer, determine where to find that information on the World Wide Web or elsewhere, extract the information from a network of assorted information sources (Knoblock, 2003), report its findings clearly and in a meaningful way so that a human can understand it and recognize what information may be lacking.

ODAs will be ultimately engineered to have reasoning abilities (Ardissono, 2003) and decision processes that are quite human-like. Borrowing from Poole, Mackworth & Goebel's (1998) conception of an infobot as a black box, a future ODA will contain inputs of prior knowledge such as information sources and how to access them, past experience about where information is obtained and information about the preferences

and profile of users. In addition, ODAs will be given goals about what information it needs to find (Knoblock et al., 2008), ways to assess tradeoffs between the volume, cost and quality of information, and observations about what information is at a current website, what links are available and the Internet traffic load on various connections. Further research studies could examine how the gulf is closing and where the technological or other bottlenecks exist.

The output of an ODA is information presented to travelers in a user-friendly way. Consequently, aside from similar outputs to the inputs listed above, an ODA will need to be able to explain how it derived an answer or why some information was unavailable, draw conclusions about a lack of knowledge, determine conflicting knowledge, recognize disjunctive knowledge, use default reasoning about where to obtain different information, learn about what information the user is interested in, and volunteer information that users don't know exists. In addition, acquisition of customers' demands should adapt to the customer (Bergmann and Cunningham, 2002). Further research into how humans will interface with this advancing technology could prove beneficial.

This researcher believes future collaborative, content filtering processes and recommendation agents will provide increasingly sophisticated insights into the collective mindset of different customer groups. Future research into how this mindset develops could prove interesting and provide terrific marketing opportunities. Marketers could use these insights by assessing the exact preference structure of customers who prefer certain goods and services so they could better recommend related products in other categories that meet specific attributes or preference structures deemed important by the customer. For example, men who enjoy the latest technological innovations in personal care items such as electric shavers are likely to be interested in high quality men's cosmetics, as well as hair products that use organic ingredients or contain other healthful elements. A vendor that sells both categories of products would benefit by interfacing the knowledge of preference structures acquired from customers who purchased electric shavers in order to recommend appropriate hair products. It is expected that vendors such as AOL and Apple will eventually move in this direction. For instance, the website aol.com currently is configured to expect that readers interested in certain political stories are more inclined to read other articles based on particular lifestyles that are correlated with the nature of the political content. At AOL Electronics Shopping, where numerous electronic items are advertised, presumably readers interested in digital cameras would likely be interested also in cell phones. A natural evolution may be that readers of a political story at aol.com will be guided to information on certain electronic products at AOL Electronics Shopping.

Another example of how this could evolve is illustrated through Apple's itunes website. When a customer buys a song (tune) at itunes.com, the website currently provides a list of songs that other customers purchased, thus interrelating the mindset of a customer buying the song with the mindset of customers who previously bought other songs. Similarly, for a purchase within the new category of movies, the website provides a list of movies other customers bought. The next step expected is for itunes to show the songs and movies previous customers bought when a customer buys a song. Likewise, itunes

could show a list of movies and songs when a customer buys a movie. This evolutionary step in collaborative filtering and recommendation agents has the potential to create marketing opportunities and is worthy of further research into new potential determinants of online purchases.

With travel products we may see more sophisticated online information so that customers who prefer to stay in a type of accommodation will be recommended to go on specific kinds of tours, or attend certain concerts. Alternatively, an ODA could recognize a consumer is traveling to Australia with young children. Once the ODA calculates the lengthy flight time and having been given prior knowledge of the need to keep children preoccupied during long trips, it may suggest ways in which a parent could entertain their children. The ODA may also narrow the search for accommodations to hotels that are kid-friendly and suggest entertainment venues that families would enjoy. An ODA that is capable of reasoning in these ways will be acting in a human-like manner. Future research that illustrates these reasoning capabilities of ODAs will be fascinating.

Opinion leadership and innovation characteristics were found to influence online banking adoption by Lassar, Manolis & Lassar (2004). Assessing whether the same applies to online travel booking intention or adoption may be worth pursuing. Also, evaluating whether demographic dimensions such as household income, age, and education help identify innovators or online travel bookers. One would expect that the young, well-educated and wealthy consumers would be innovators and more likely to be online bookers.

Hyde (2008) states pre-vacation decision-making is a three step process consisting of a search for travel and destination information, making a plan for the vacation and then booking of selected elements of the vacation. Future research could consider this process so that searching and planning are viewed as separate phases. As Hyde pointed out, many antecedent factors of tourist information search are well researched, but antecedent factors which lead to vacation planning are not well known. Furthermore, Hyde's hypothesis testing was supported through the use of structural equation modeling software. Future research could incorporate these three phases into the Conceptual Framework developed in this study instead of the two activities of researching and booking. Online planning intention as it relates to TAM and innovation adoption theory could be included in a future study.

Questions will always remain about how diverse factors influence the decision-making process of humans. This writer believes further research will make known numerous elements of this process enabling machines to emulate the process and assist humans. But, ultimately, even though future developments in AI and complementary technologies such as robotics will enable machine intelligence and artificial beings to experience increasing measures of sentience, they will never make possible the true understanding and experience of sapience since that ability is consigned exclusively to humans.

Figure A1. Advanced Search Feature of Icruise.com Website

- [ ] Family Cabins
- [ ] Hair dryer in every cabin
- [ ] Mini Bar
- [ ] Radio (2-4 channels)
- [ ] Safe
- [ ] Satellite TV
- [ ] Telephone in every cabin
- [ ] VCR

- [ ] Helipad
- [ ] Hospital
- [ ] Hot Tub
- [ ] Kennel
- [ ] Laundry
- [ ] Library
- [ ] Newsstand
- [ ] Sauna & Steam Rooms
- [ ] Solarium Spa and Pool
- [ ] Stabilizers
- [ ] Swimming Pool (Indoor)
- [ ] Swimming Pool (Outdoor)
- [ ] Teen Center

- [ ] Piano Bar
- [ ] Poker Room
- [ ] Rendezvous Lounge
- [ ] Show Lounge
- [ ] Video Game Room
- [ ] Video Library

FOOD SERVICES
- [ ] 24 Hour Cafeteria
- [ ] Juice Bar
- [ ] Pizza Parlor
- [ ] Wine Cellar

RELIGIOUS
- [ ] Chapel
- [ ] Clergy
- [ ] Religious Services
- [ ] Synagogue

CHILDREN
- [ ] 24 Hour Child Care
- [ ] Babysitting
- [ ] Children's Activities
- [ ] Children's Supervised Pool

SERVICES
- [ ] 24 Hour Room Service
- [ ] Bank
- [ ] Barber Shop
- [ ] Beauty Salon
- [ ] Closing Stock Quotations
- [ ] Concierge
- [ ] Dry Cleaning
- [ ] Shore Excursions
- [ ] Tuxedo Rental & Tailor

SHOPS
- [ ] Boutique
- [ ] Drug Store
- [ ] Duty Free Shops
- [ ] Photo Shop

SPORTS / HEALTH
- [ ] Aerobics
- [ ] Basketball
- [ ] Croquet Court
- [ ] Exercise Classes
- [ ] Fitness Center
- [ ] Golf Range
- [ ] Horse Racing
- [ ] Jogging Track
- [ ] Ping-Pong
- [ ] Shuffle Board Courts
- [ ] Snorkeling
- [ ] Trap Shooting
- [ ] Volleyball
- [ ] Wind Surfing
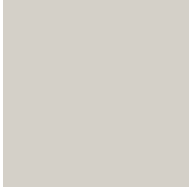
Note that icruise.com used this form with checkboxes until around 2006 but does not currently use it. Other companies that used similar checkboxes in the past have also abandoned their use which suggests databases do not operate properly with checkboxes and queries or searches through data.

OPERATIONAL DEFINITIONS OF TERMS

Artificial Intelligence -- "the science and engineering of making intelligent machines" (McCarthy, Minsky, Rochester and Shannon, 1955).

Attitudes – learned predispositions to respond to an object or class of objects in a favourable or unfavourable way (Fishbein, 1967).

Beliefs – hypotheses concerning the nature of these objects and the types of actions that should be taken with respect to them (Fishbein, 1967).

Collaborative filtering -- or social recommendation derives recommendations using the behavior and preferences of others, especially those who have displayed similar tastes and interests as a particular user (Goldberg, Nichols, Oki and Terry, 1992).

Information filtering -- is a process used to derive recommendations for a particular user from knowledge of that user's past behavior (Schafer, 1999).

Interactivity – the process by which a customer's needs and desires are uncovered, met, modified, and satisfied by the providing firm (Hoffman & Novak, 1996).

Online decision aid (ODA), or online aid – travel websites, consolidator such as Orbitz, online travel agency, travel search engines such as Kayak, and others on the IDS.

Offline aid – a travel agent.

Recommendation agent (RA) -- the shopbots that gather information on a consumer's personal preferences in a specific product category and then base product recommendations on this information (Haubl, Murray, and Trifts, 2003).

Shopbot -- a price comparison service, shopping comparison, or price engine that allows consumers to see lists of prices or features for specific products.

Trust -- the mutual confidence that no party to an exchange will exploit its informational advantage (Sabel, 1993).

Email Letter to Shopping Mall Managers

Ms. Fay Laing
Lougheed Town Centre
flaing@lougheedtowncentre.com

Dear Ms. Laing:

Thank you for your interest in my research work and the personal interviews I need to conduct over the next couple of weeks.

As I indicated on the telephone, I am a doctoral student enrolled in the Doctor of Business Administration degree Program offered jointly by Newcastle University of the UK (http://www.ncl.ac.uk/) & Grenoble Ecole de Management of France (http://www.grenoble-em.com).

My research involves innovation and improvements in travel website booking engines, and determining the profile of consumers who are inclined to use sophisticated online interactive decision aids. Specifically, I would be asking consumers questions such as: how they organize their vacation, how they search for and select the destination(s) of their choice, how they would like a travel website organized or structured so they could select the vacation(s) of their choice, and their perceived value & benefits of using an online interactive decision tool.

Consumers would be encouraged to spend time with the interviewer through a vacation for two giveaways so that I will not be disturbing or soliciting patrons of the mall to drop by my table.

I know as a marketer of the Lougheed Town Centre you are interested in providing a good shopping experience for your patrons. About 60 names of respondents will be used for a random draw of the vacation for two. If I obtain 22 respondents from the Town Centre then your patrons have a one in three chance of winning a vacation for two with a retail value of $3,000. I'm sure that if the selected winner were to be a patron of yours they would agree that their experience at the Centre was a terrific and worthwhile one.

Once I complete the personal interviews in Vancouver this summer, I will accept an invitation to visit the Swiss Federal Institute of Technology in Lausanne, Switzerland and meet with a research scientist in the Human Computer Interaction Group of the database laboratory. In early August I then meet my primary thesis advisor, Dr. Michel Polski, in Grenoble, France to update him and obtain further guidance for future research.

I look forward to hearing from you next week and I am available for any questions you may have at the coordinates below.

Thank you.

Regards,
Michael Conyette, BA, MBA

Telephone 604-444-0700

Email michael.conyette@grenoble-em.com
OR
homeair@telus.net

FOCUS GROUP 2005

1) "Do you use the internet for shopping? Quote the last time you experienced an online shopping experience. Did you prefer it or not to usual shopping or not? Why?"

2) How can a website enhance your online shopping experience? Do travel **websites engage** you?   If you enjoy the online experience will you become more involved with the experience, and will you continue to use that website, and will you develop favorable attitudes toward the online company?

3. Will you as a customer choose an online channel (travel website) versus offline (travel agent) because you believe it has **lower transactional costs**? It is believed that a customer would buy a product electronically if they perceive the transaction cost of the channel to be competitive.

4. How would **uncensored competitor price information** affect your decision making? Showed respondents cross-vendor comparisons with the aid of a third party intermediary such as a shopbot (shopping robot) Allbookstores.com.

5. How much **influence on your consumer decision-making** do a travel agent's recommendations have on you? Do travel agents have a considerable amount of influence?   Do agents attempt to push the holidays of their parent company rather than give impartial advice to consumers? How might this be different with a travel website? Showed respondents the hot rates on DiscoverTheIslands.Com, which are displayed first and with a yellow background.

6. Are **knowledgeable** consumers more likely to search for new information before making a decision? Are less knowledgeable consumers more likely to rely on attributes such as brand name, price or opinions of others?

7. Are **online behaviors of consumers subtly different** in nature from offline (traditional) consumers due to specific unique characteristics and interplay of technology and culture?   What differentiates them? For instance, do some Internet users have a primary goal of simplifying their lives and saving time?

8. Are **online consumers loyal** to travel websites?

9. Do you feel consumers evaluate and choose among online agents based on whether the online agent is considered **more informative or diagnostic**?

10. Are there **distinctive styles of information search** among online travel buyers?

11. How do you **compare the control consumers have** in traditional mass media such as television with the level of information control with electronic communication channels?

12. **Means-end chain links**   "How much <u>involvement</u> do you have in making leisure travel decisions?"   "How does your level of involvement affect your travel planning decisions?" "How <u>knowledgeable</u> are you about travel planning?" "Do you make travel plans by yourself?"   "Do you consult others before making plans?"

13. **Motivation**   What is your main purpose in using the Internet?

Also, respondents were asked to identify which (McGuire's) motives they felt described them. A list of these motives can be seen in Appendix F. Other motives included shopping enthusiasm and need for cognition (Schmidt and Spreng 1996).

14. **Learning and Tacit Knowledge**   Have you found that information you learned or discovered while booking travel for business purposes was used on leisure travel decisions at a later date?

15. **Segmentation**

Respondents were shown four descriptions of travelers, Appendix F and were asked to indicate which one described them.

INTERVIEW QUESTION FORMAT AND SYNTHESIS OF INTERVIEW RESPONSES

Format of Semi-structured Questions Asked

1. How do you as a consumer organize your vacation?
2. How do you search for and select the vacation destinations or island(s) of your choice?
3. What type of vacation(s) do you would like?
4. How do you organize such a vacation(s)?
5. What preferences & needs do you have (as a traveler) in vacation(s)?
6. How would you like a travel website organized or structured so you could select the vacation(s) of your choice?
7. What features, tools or abilities do you like in a travel website?
8. What are your expectations of a website called DiscoverTheIslands.com that caters to travelers to island destinations worldwide?
9. What does the website evoke for you as a traveler; how does it inspire you?
10. How can DiscoverTheIslands.com distinguish itself from other online travel companies?
11. What likelihood is there that you will utilize a 'web-bot' or online intelligent decision aid (assess propensity to use)?
12. What perceived value & benefits are there to you of using an online interactive decision tool?
13. Are there anticipated effects of interactive decision aids on how you make travel planning decisions? (consumer decision-making)
14. Would an online decision tool make you solicit a website more often? (effects of online decision tools on customer loyalty)
15. Does the use of an online decision aid make you feel more satisfied in your online travel booking? (impact of online decision aids on customer satisfaction)
16. Discover market segments that are most amenable to using interactive decision aids

Responses to key questions 1 & 4

How you organize a vacation; organize a specific vacation?

Respondents could be placed in the following categories; those who say:

1) I organize a vacation essentially around a budget; budget-oriented
2) I organize a vacation essentially around time available off work; time-oriented
3) I organize a vacation essentially around a destination: destination-oriented

4) I organize a vacation essentially around an activity; activity-oriented or relaxation
5) I organize a vacation essentially around a special or deal; on the spur of the moment
6) I organize a vacation essentially around my travel agent's recommendations

Responses to key question 6

How would you like a travel website organized or structured?

Respondents could be placed in the following categories; those who say:

1) Destination guide based
2) Deal based
3) Activity based
4) Plan own package/trip
5) By price ranges

Responses to key questions 12 & 13

Perceived Value/Benefit of ODA & Effect on Travel Planning Decision

Respondents could be placed in the following categories; those who say:

1) The ODA will save time & money; convenient, removes hassle
2) I have the ability to customize my trip; personalized travel, design my own package
3) ODA is accessible, convenient, helpful 24 hours a day, 7 days a week as compared to travel agent
4) I will allow the ODA to influence me, give me ideas
5) ODA intrigues me, makes me curious, sounds trendy and so I will use it

FOCUS GROUP 2005 – MOTIVATIONS

Put your name under the term that best describes you as a traveler

Choose one of the four below:

Explorer—They plan own itineraries and make own reservations although may use a travel agent. Tend to be very sociable & enjoy interacting with people.

Drifter- They are backpackers. Will seldom be found in a traditional hotel. Will stay at youth hotels with friends or camp out. Tend to mix with lower-socioeconomic native groups. Commonly found riding third-class rail or bus. Most tend to be young.

Organized Mass Tourist- Have little or no influence over their travel experience other than to purchase one package or another. Commonly travel in a group, view the destination through the windows of a tour bus, and remain in pre-selected hotels. Shopping in a local market often provides their only contact with the native population.

Individual Mass Tourist- Similar to the previous category but have somewhat more control over their itinerary. They may rent an auto to visit attractions, for instance.

Rate from 1 to 10 the following statements that describe motivations in travel planning or using the Web where 1 means that's not me and 10 means that is me.

1. Shopping enthusiasm-- enjoyment you feel for the task of collecting and processing information about a product   _____ Rating

2. Need for cognition-- is the tendency for individuals to engage in and enjoy thinking _____ Rating

3. Hedonic needs including amusement, fun, enjoyment, entertainment _____ Rating

4. Functional needs including information, efficiency, and convenience. _____ Rating

5. Use of Internet as a source of information for learning and research _____ Rating

6. Social escapism motivation, _____ Rating

7) transaction-based security and privacy concerns, _____ Rating

8) information motivation, _____ Rating

9) interactive control motivation, _____ Rating

10) socialization motivation, _____ Rating

11) nontransactional privacy concerns, _____ Rating

12) economic motivation_____ Rating

13) need to categorize. need to organize the vast array of information and experiences they encounter in a meaningful yet manageable way. In order to accomplish this, they establish categories or mental partitions that allow them to process large quantities of information. _____ Rating

14) the need for stimulation where a person seeks variety and difference. _____ Rating

15) the utilitarian need, which sees the consumer as a problem solver. _____ Rating

16) the need for tension reduction. This motive explains why consumers are attracted to recreational products and services to manage tension and stress. _____ Rating

17) the need for reinforcement. People act in certain ways because they were rewarded for behaving that way in similar situations in the past. _____ Rating

18) the need for affiliation. Affiliation is the need to develop mutually helpful and satisfying relationships with others. _____ Rating

Appendix G:

Survey Questionnaire

7. Indicate all types of LEISURE/PERSONAL travel products you have RESEARCHED online, and/or PURCHASED online (using the Internet). If you did neither, then check that box only. This is an important question so please take your time answering it.

	RESEARCHED ONLINE	PURCHASED ONLINE	Didn't RESEARCH OR PURCHASE with Internet
Cruises or Charters	☐	☐	
Destination tour/attraction tickets	☐	☐	☐
Vacation packages	☐	☐	☐
Boat tours	☐	☐	☐
Hotels or accommodation	☐	☐	☐
Wine tours	☐	☐	☐
All-inclusive resorts	☐	☐	☐
Airline tickets	☐	☐	☐
Car rentals	☐	☐	☐
Scenic rail tours	☐	☐	☐
Long-distance train tickets (CN Rail)	☐	☐	☐

8. How often do you visit a travel website to RESEARCH or BOOK a LEISURE/PERSONAL travel product?

◯ never   ◯ every month

◯ once or twice a year   ◯ at least once a week

◯ once every few months

9. How much of your LEISURE/PERSONAL travel have you RESEARCHED online (using the Internet) in the past 12 months.

◯ 0/None   ◯ 50% to less than 75%

◯ Less than 25%, but more than 0 ◯ 75% to less than 100%

◯ 25% to less than 50%   ◯ All

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10. Which of the following types of Web sites have you used to research your LEISURE/PERSONAL travel in the past 12 months? Select all that apply.

- [ ] General search engine (e.g., Google, Yahoo!)
- [ ] Group travel sites (e.g., Groople.com, TripHub.com)
- [ ] None of these
- [ ] Opaque/discount travel site where you pay before knowing full details of your trip (e.g., Priceline, Hotwire)
- [ ] Tourism Office/convention bureau Web site (e.g., HelloBC.com, VegasFreedom.com)
- [ ] Travel guide site (e.g., Fodors.com, MyTravelGuide.com)
- [ ] Travel sales and specials site (e.g., TravelZoo, SmarterTravel)

- [ ] Travel search/price comparison site (e.g., SideStep, InsideTrip, Farecast)
- [ ] Travel supplier Web site Travel supplier Web site (e.g., Marriott.com, AirCanada.com, Budget.com, PrestigeInn.com)
- [ ] Traveler community site (e.g., TripAdvisor.com, IGOUGO.com)
- [ ] Travel-related Web log, or "blog" (e.g., HoboTraveler.com, travelblog.org) or Travel forums
- [ ] Web portal travel site (e.g., Yahoo! Travel, MSN Travel Central)
- [ ] Web-based travel agency (e.g., Expedia, Travelocity)

Other Website (please specify)
_____

11. Which of the following offline resources have you used to research your LEISURE/PERSONAL travel in the past 12 months? Select all that apply.

- [ ] Calling or visiting a travel agency office (e.g., an American Express or Carlson Wagonlit travel agent)
- [ ] Travel supplier call center (e.g., toll-free number for Hilton, WestJet)
- [ ] Convention & Visitor Bureaus, Tourism Offices
- [ ] Print ads or TV commercials
- [ ] Advice from friends or family

- [ ] Travel magazine or newspaper article (e.g., Conde Nast Traveler, Sunday Newspaper Travel Section)
- [ ] Travel TV program (e.g., Great Hotels on the Travel Channel, Rick Steves' Europe)
- [ ] Guidebook (e.g., Lonely Planet guide, Frommers guide, Travel Best Bets)
- [ ] None of these

Other offline source (please specify)
_____

2. Section B. Booking Online- Travel Websites vs Offline- Travel Agents (3 que...

Questions on this page require you to distinguish between PURCHASING ONLINE with travel websites, and OFFLINE with travel agents or another offline resource.

1. How much of your LEISURE travel have you PURCHASED online (using the Internet) in the past 12 months

○ 0/None   ○ 50% to less than 75%

○ Less than 25%, but more than 0   ○ 75% to less than 100%

○ 25% to less than 50%   ○ All

2. If you have purchased online, which Web sites have you used to purchase LEISURE/PERSONAL travel in the past 12 months? Select all that apply

☐ Travel supplier Web site (e.g., Marriott.com,   ☐ Web portal travel site (e.g., Yahoo! Travel, MSN Travel
AirCanada.com, Budget.com, PrestigeInn.com)   Central)

☐ Web-based travel agency (e.g., Expedia, Travelocity) ☐ Travel search/price comparison site (e.g., SideStep,
                                                         InsideTrip, Farecast)
☐ Opaque/discount travel site where you pay before knowing
full details of your trip (e.g., Priceline, Hotwire)   ☐ Other online resource

3. If you have purchased offline, which resources have you used to purchase LEISURE/PERSONAL travel in the past 12 months? Select all that apply.

☐ Offline travel agent call/visit (e.g., call to a Carlson   ☐ I have not personally purchased my own
Wagonlit travel agent)   LEISURE/PERSONAL travel in the past 12 months

☐ Travel supplier call/visit (e.g., toll-free number for Hilton,   ☐ None of these
WestJet, Budget Rent-a-car)

Other offline resource (please specify)

3. Section C. Travel agents & travel websites LEISURE (after 8 questions ...

1. Select by clicking on the drop-down list (arrowhead) which number best describes your feelings about booking with a TRAVEL AGENT as compared with a TRAVEL WEBSITE. Rate both TRAVEL AGENTS and TRAVEL WEBSITES. This is an important question so please take your time answering it.

GUIDE FOR ANSWERING

Convenient_____1_____2_____3_____4_____5_____6_____7____ Inconvenient

Safe using credit card___ 1_____2_____3_____4_____5_____6_____7____ Risky using credit card

Expensive_____1_____2_____3_____4_____5_____6_____7____ Not Expensive

Difficult_____1_____2_____3_____4_____5_____6_____7____ Easy

Enjoyable_____1_____2_____3_____4_____5_____6_____7____ Not Enjoyable

Positive_____1_____2_____3_____4_____5_____6_____7____ Negative

Empowering_____1_____2_____3_____4_____5_____6_____7____ Disempowering

Good_____1_____2_____3_____4_____5_____6_____7____ Bad

Desirable_____1_____2_____3_____4_____5_____6_____7____ Undesirable

Useless_____1_____2_____3_____4_____5_____6_____7____ Beneficial

Reliable_____ 1_____2_____3_____4_____5_____6_____7____ Unreliable

Inefficient_____ 1_____2_____3_____4_____5_____6_____7____ Efficient

Certain_____1_____2_____3_____4_____5_____6_____7____ Uncertain

	Booking with a TRAVEL AGENT is:	Booking with a TRAVEL WEBSITE is:
Convenient	▾ ▾	▾ ▾
Safe using credit card	▾ ▾	▾ ▾
Expensive	▾ ▾	▾ ▾
Difficult	▾ ▾	▾ ▾

Please fill out the following form. You cannot save data typed into this form.
Please print your completed form if you would like a copy for your records.

2. Please describe in the space below what types of travel decisions you would most likely make with the assistance of a TRAVEL AGENT.

3. Please describe in the space below what types of travel decisions you would most likely make with the assistance of a TRAVEL WEBSITE.

4. When purchasing LEISURE/PERSONAL travel products in general, how important are the following?

	Very unimportant	Unimportant	Somewhat unimportant	Neutral	Somewhat important	Important	Very important
Accuracy of Data	○	○	○	○	○	○	○
Brand	○	○	○	○	○	○	○
Convenience	○	○	○	○	○	○	○
Credit card safety	○	○	○	○	○	○	○
Ease of Transactions	○	○	○	○	○	○	○
Enjoyment	○	○	○	○	○	○	○
Good service	○	○	○	○	○	○	○
Loyalty Programs	○	○	○	○	○	○	○
Price	○	○	○	○	○	○	○
Social Communication	○	○	○	○	○	○	○
Travel Deals	○	○	○	○	○	○	○
Website Quality	○	○	○	○	○	○	○

5. Indicate which best represents your feelings about travel.

	Definitely Agree	Generally Agree	Somewhat Agree	Neutral	Somewhat Disagree	Generally Disagree	Definitely Disagree
In general, I am among the last in my circle of friends to visit a new vacation spot	○	○	○	○	○	○	○
My friends or family think I should purchase via the Internet	○	○	○	○	○	○	○
I gather information about vacation travel from many media sources	○	○	○	○	○	○	○
I like to shop for deals and bargains	○	○	○	○	○	○	○
My friends or family encourage me to purchase travel products via the Internet	○	○	○	○	○	○	○
Some of my friends or family buy travel products on the Internet	○	○	○	○	○	○	○

6. Rate how likely or unlikely you are to act in the following ways. Please make a selection even if you don't currently research or book travel products over the Internet for LEISURE/PERSONAL use.

	Highly Likely	Likely	Somewhat Likely	Neutral	Somewhat Unlikely	Unlikely	Highly Unlikely
When it comes to online BOOKING, how likely are you to do what your friends or family say you should do?	○	○	○	○	○	○	○
How likely is it that you will RESEARCH any travel product through the Internet within the next six months?	○	○	○	○	○	○	○
How likely is it that you will BOOK OR PURCHASE any travel product through the Internet within the next six months?	○	○	○	○	○	○	○

7. Please indicate how familiar you are with travel products, destinations & traveling in general. This shows how much knowledge you have about travel.

	Very familiar	Familiar	A little familiar	Neutral	A little unfamiliar	Unfamiliar	Very unfamiliar
How much do you feel you know about travel products?	○	○	○	○	○	○	○
Compared to your friends and acquaintances, how much do you feel you know about travel products?	○	○	○	○	○	○	○
Compared to a travel agent, how much do you feel you know about travel products?	○	○	○	○	○	○	○
How much do you feel you know about travel destinations?	○	○	○	○	○	○	○
Compared to your friends and acquaintances, how much do you feel you know about travel destinations?	○	○	○	○	○	○	○
Compared to a travel agent, how much do you feel you know about travel destinations?	○	○	○	○	○	○	○

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8. Select by clicking on the drop-down list (arrowhead) which number best describes your involvement with travelling and vacation planning. This is an important question so please take your time answering it.

GUIDE FOR ANSWERING

Unimportant_____1_____2_____3_____4_____5_____6_____7_____ Important
Valuable_____1_____2_____3_____4_____5_____6_____7_____Worthless
Interesting_____1_____2_____3_____4_____5_____6_____7_____ Boring
Exciting_____1_____2_____3_____4_____5_____6_____7_____ Unexciting
Unappealing_____1_____2_____3_____4_____5_____6_____7_____ Appealing
Involving_____1_____2_____3_____4_____5_____6_____7_____ Uninvolving
Fascinating_____1_____2_____3_____4_____5_____6_____7_____ Mundane
Needed by me_____1_____2_____3_____4_____5_____6_____7_____Not needed
Irrelevant to me___1_____2_____3_____4_____5_____6_____7_____Relevant
Means nothing_____1_____2_____3_____4_____5_____6_____7_____Means a lot

Traveling and travel planning for me is:

Unimportant	[▾]
Valuable	[▾]
Interesting	[▾]
Exciting	[▾]
Unappealing	[▾]
Involving	[▾]
Fascinating	[▾]
Needed	[▾]
Irrelevant	[▾]
Means nothing to me	[▾]

4. Section D. Internet Researching and Booking (4 questions here then 1 minute...

1. Indicate to what extent you agree or disagree with the following reasons for using the Internet.

	Definitely Agree	Generally Agree	Somewhat Agree	Neutral	Somewhat Disagree	Generally Disagree	Definitely Disagree
I can get what I want for less effort	○	○	○	○	○	○	○
I can use it anytime, anywhere	○	○	○	○	○	○	○
Overall, information obtained from the Web is useful	○	○	○	○	○	○	○
To express myself freely	○	○	○	○	○	○	○
It's convenient to use	○	○	○	○	○	○	○
To meet people with my interests	○	○	○	○	○	○	○
Because it gives quick and easy access to large volumes of information	○	○	○	○	○	○	○
I wonder what other people said	○	○	○	○	○	○	○
Overall, I learn a lot from using the Internet	○	○	○	○	○	○	○
So I can learn about things happening in the world	○	○	○	○	○	○	○
Because it makes acquiring information inexpensive	○	○	○	○	○	○	○

2. Select by clicking on the drop-down list (arrowhead) which number best describes your feelings about RESEARCHING travel with a travel agent, as compared to RESEARCHING travel online. Rate both AGENT & ONLINE. This is an important question so please take your time answering it.

GUIDE FOR ANSWERING

Good_____1_____2_____3_____4_____5_____6_____7_____Bad
Efficient_____1_____2_____3_____4_____5_____6_____7_____Inefficient
Undesirable_____1_____2_____3_____4_____5_____6_____7_____Desirable
Beneficial_____1_____2_____3_____4_____5_____6_____7_____Useless
Empowering_____1_____2_____3_____4_____5_____6_____7_____
Disempowering
Negative_____1_____2_____3_____4_____5_____6_____7_____Positive
Convenient_____1_____2_____3_____4_____5_____6_____7_____
Inconvenient
Enjoyable_____1_____2_____3_____4_____5_____6_____7_____Unenjoyable
Certain_____1_____2_____3_____4_____5_____6_____7_____Prone to
errors
Easy_____1_____2_____3_____4_____5_____6_____7_____Difficult
Unreliable_____1_____2_____3_____4_____5_____6_____7_____Reliable

	RESEARCHING travel with an Agent is:	RESEARCHING travel with the Internet is:
Good	▾ ▾	▾ ▾
Efficient	▾ ▾	▾ ▾
Undesirable	▾ ▾	▾ ▾

Beneficial		
Empowering		
Negative		
Convenient		
Enjoyable		
Certain		
Easy		
Unreliable		

3. Please indicate to what extent you agree or disagree with each of the following statements.

	Definitely Agree	Generally Agree	Somewhat Agree	Neutral	Somewhat Disagree	Generally Disagree	Definitely Disagree
Because travel agents are expensive I use the Internet to book travel products.	○	○	○	○	○	○	○
It's difficult to find the travel information I want online.	○	○	○	○	○	○	○
It's more convenient to research travel offline by visiting a travel agent.	○	○	○	○	○	○	○
I do not trust the Internet for accurate or updated travel information.	○	○	○	○	○	○	○
I am more knowledgable than travel agents so I research and book things on the Internet myself.	○	○	○	○	○	○	○
Travel agents are biased towards selling travel products they make more commission on.	○	○	○	○	○	○	○
I am concerned about disclosing personal information to travel companies online.	○	○	○	○	○	○	○
Travel agents are professional counsellors and offer valuable services and advice.	○	○	○	○	○	○	○
Travel agents are unresponsive to my needs.	○	○	○	○	○	○	○
Travel Blogs and Forums are valuable to me.	○	○	○	○	○	○	○
Travel agents offer a human touch that I prefer to interact with than a website.	○	○	○	○	○	○	○

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4. With travel products you may have purchased in the past for LEISURE/PERSONAL use, assuming your INTENTION was to BOOK a travel product ONLINE, state your agreement to any statement below that explains why you decided to PURCHASE it through a TRAVEL AGENT INSTEAD. Select all that apply.

	Definitely Agree	Generally Agree	Somewhat Agree	Neutral	Somewhat Disagree	Generally Disagree	Definitely Disagree
Frustrating experience online	◯	◯	◯	◯	◯	◯	◯
Information overload on website	◯	◯	◯	◯	◯	◯	◯
Credit card concerns	◯	◯	◯	◯	◯	◯	◯
Key information not available online	◯	◯	◯	◯	◯	◯	◯
Travel website was too slow	◯	◯	◯	◯	◯	◯	◯
Travel product difficult to assess on website	◯	◯	◯	◯	◯	◯	◯
I didn't feel I knew enough about the travel product to book it online after all	◯	◯	◯	◯	◯	◯	◯
It took too long to find what I wanted online	◯	◯	◯	◯	◯	◯	◯
Travel website was too confusing	◯	◯	◯	◯	◯	◯	◯
I had difficulty accessing the Internet	◯	◯	◯	◯	◯	◯	◯
I didn't have enough experience with the Internet	◯	◯	◯	◯	◯	◯	◯
Travel website couldn't accommodate my travel option or preference	◯	◯	◯	◯	◯	◯	◯
Website was not responsive in helping me	◯	◯	◯	◯	◯	◯	◯
I decided to redeem loyalty points	◯	◯	◯	◯	◯	◯	◯
Not applicable	◯	◯	◯	◯	◯	◯	◯

Other (please specify)

5. Section DE. Demographics (last few questions)

1. What is/was your occupation? Please answer even if you are currently unemployed or retired. Select one answer.

- ○ I do not have an occupation
- ○ Executive/Management
- ○ Clerical
- ○ Craftsman/foreman (skilled production worker)
- ○ Farm worker
- ○ Homemaker
- ○ Laborer
- ○ Military
- ○ Operative (semi-skilled production worker)
- ○ Professional
- ○ Proprietor/manager
- ○ Sales
- ○ Self-employed (describe in Other box below)
- ○ Service worker/private household worker
- ○ Student

Other (please specify)
_____

2. Gender

- ○ Male
- ○ Female

3. Which category best describes the total combined annual income of all members of your household? Please use Canadian or US dollar equivalencies. Select one answer.

- ○ Under $25,000
- ○ $25,000 to $49,999
- ○ $50,000 to $74,999
- ○ $75,000 to $99,999
- ○ $100,000 to $149,999
- ○ $150,000 or more
- ○ Prefer not to answer

4. In which one of the following categories does your current age fall?

- ○ Under 18
- ○ 18 to 25
- ○ 26 to 35
- ○ 36 to 45
- ○ 46 to 55
- ○ 56 to 65
- ○ 66 to 70
- ○ Over 70

5. Which one of the following categories best corresponds with your last completed year in school?

- ○ Some grammar school (1-8 grade)
- ○ Completed grammar school
- ○ Some high school (9-12 grade)
- ○ Completed high school
- ○ Some trade school, college, or university
- ○ Completed trade school, college or university degree
- ○ Graduate studies or degree (Masters)
- ○ Post graduate studies or advanced degree (PhD)

Other (please specify)
_____

6. Indicate how many children under 18 years of age are in your household. (Otherwise leave blank)

◯ 1   ◯ 2   ◯ 3   ◯ 4   ◯ 5   ◯ 6   ◯ 7+

7. Indicate who or which business referred you to the survey.

◯ Prestige Hotels & Resorts   ◯ DiscoverTheIslands.com

◯ Budget Car & Truck Rental   ◯ A friend

◯ Great Estates of the Okanagan   ◯ Travel Forum or Blog

◯ Kettle Valley Steam Railway   ◯ Neither of these

◯ Caribbean Airlines

8. May we contact you in a few weeks to do a second short survey and provide you another incentive for doing so?

◯ Yes, I am willing to do another survey in a few weeks   ◯ No, I am not willing to do another survey in a few weeks

9. If you answered yes to the previous question, please create a code here that you will remember.

[   ]

Thank you for doing our survey!

Appendix H:

BELIEFS AFFECTING ATTITUDES

Hypothesis H1b **-** Consumers who have more positive beliefs about online travel booking will have more positive attitude toward online travel booking than consumers who have less positive beliefs about online travel booking.

The response variable is attitude (positive - booking with a travel website) and consists of five categories (1=very positive, 2=2, 3=3, 4=4, 5= negative).

Predictor variables are beliefs about booking with a travel website: convenient, safe using credit card, expensive, difficult, and enjoyable, each in three categories (e.g. 1= very convenient, 2= convenient, 3= inconvenient). Also, corresponding variables for the importance of those beliefs, measured in three categories (1= unimportant, 2=important, 3=very important). Two exceptions were credit card importance and price importance which were collapsed into two categories (1= somewhat important, 2= very important).

Association (Correlation) Study

A Chi-square test for independence with an alpha of 0.05 between variables indicated statistically significant associations between the attitude 'positive' – booking with a travel website, and beliefs 'convenient', 'safe using credit card', 'expensive', 'difficult', 'enjoyable', 'convenience importance', 'enjoyment importance', and 'ease of transactions importance'. The belief predictors having a strong association with the attitude response variable 'positive' - booking with a travel website are shown below in Table H5.31.

Table H5.31
Summary of Pearson Chi-square Test of Independence

Variable	Keep/Drop	Pearson	p-value	n	df
Convenient	Keep	262.6257	<0.001	1146	8
Safe using credit card	Keep	149.0259	<0.001	1150	8
Inexpensive/Expensive	Keep	27.5769	0.001	1147	8
Easy/Difficult	Keep	78.3073	<0.001	1144	8
Enjoyable	Keep	496.0237	<0.001	1145	8
Credit Card Safety Importance	Drop	2.5742	0.631	1142	4
Convenience Importance	Keep	42.4545	<0.001	1141	8
Price Importance	Keep	9.7779	0.044	1141	4
Enjoyment Importance	Keep	29.8155	<0.001	1143	8
Ease of Transactions Importance	Keep	31.5888	<0.001	1142	8

Univariate Logistic Regression Fits

Nine of the predictor variables from the correlation study are kept. Next, with attitude variable 'positive' - booking with a travel website set as the dependent or response variable and testing the belief 'convenient' as a predictor, univariate logistic regression was performed using a level of significance of 0.05. This was followed by other predictor variables. Results for all variables are shown below in Table H5.32.

Table H5.32
Summary of the Univariate Fits - Ordered Logistic Regression

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
Convenient	**Keep**	204.58	0.0000	-1705.5619
Safe using credit card	**Keep**	122.15	0.0000	-1753.6302
Inexpensive/Expensive	**Keep**	13.48	0.0012	-1802.6904
Easy/Difficult	**Keep**	53.36	0.0000	-1777.2822
Enjoyable	**Keep**	424.63	0.0000	-1594.4518
Convenience Importance	**Keep**	22.88	0.0000	-1788.9158
Price Importance	**Keep**	7.64	0.0057	-1796.4156
Enjoyment Importance	**Keep**	12.82	0.0016	-1796.7772
Ease of Transactions Importance	**Drop**	3.62	0.1640	-1799.5073

Stepwise ordinal logistic regression was performed to assess the impact of the remaining predictor variables on the attitude 'positive' - booking with a travel website, Table H5.33.

Table H5.33
Model Building for Hypothesis H1b Attitude – 'Positive'

```
Ordered logistic regression              Number of obs   =     1132
LR chi2(8)    =    565.71                Prob > chi2    =    0.0000
Log likelihood = -1501.5576              Pseudo R2      =    0.1585
------------------------------------------------------------------------
   Positive | Odds Ratio  Std. Err.    z   P>|z|   [95% Conf. Interval]
-------------+----------------------------------------------------------
Convenient_2             1.866812  .2435025   4.79   0.000   1.445679  2.410623
Convenient_3             3.735198  .617498    7.97   0.000   2.701433  5.164558
Safe_2                   1.533184  .1983406   3.30   0.001   1.189813  1.975651
Safe _3                  2.327664  .3551532   5.54   0.000   1.726016  3.139034
Easy_2                   1.445528  .2199793   2.42   0.015   1.072732  1.947878
Easy_3                   1.149143  .1563248   1.02   0.307   .8801972  1.500265
Enjoyable_2              4.746349  .640219   11.55   0.000   3.643711  6.18266
Enjoyable _3            16.44911   2.997045  15.37   0.000  11.50939  23.50889
```

```
-------------+-------------------------------------------------------------
     /cut1 |           .3345191   .1381707            .   0637095   .6053288
     /cut2 |           1.928186   .151859                 1.630548  2.225824
     /cut3 |           3.182398   .1693292                2.850519  3.514277
     /cut4 |           4.960069   .2020097                4.564137  5.356
```

Attitude – good/bad

The next response variable is attitude (good - booking with a travel website) and consists of five categories (1=very good, 2=2, 3=3, 4=4, 5=very bad) after merging two of them.

Predictor variables are beliefs about booking with a travel website: convenient, safe using credit card, expensive, difficult, and enjoyable, each in three categories (e.g. 1= very convenient, 2= convenient, 3= inconvenient). Also, corresponding variables for the importance of those beliefs, measured in three categories (1= unimportant, 2=important, 3=very important). Two exceptions were credit card importance and price importance which were collapsed into two categories (1= somewhat important, 2= very important).

Association (Correlation) Study

A Chi-square test for independence with an alpha of 0.05 between variables indicated statistically significant associations between the attitude 'good' – booking with a travel website, and beliefs 'convenient', 'safe using credit card', 'expensive', 'difficult', 'enjoyable', 'convenience importance', 'enjoyment importance', and 'ease of transactions importance'. The belief predictors having a strong association with the attitude response variable 'good'- booking with a travel website are summarized in Table H5.34.

Table H5.34
Summary of Pearson Chi-square Test of Independence

Variable	Keep/Drop	Pearson	p-value	n	df
Convenient	Keep	298.3628	<0.001	1143	8
Safe using credit card	Keep	129.7511	<0.001	1147	8
Inexpensive/Expensive	Keep	48.8729	<0.001	1145	8
Easy/Difficult	Keep	80.1105	<0.001	1141	8
Enjoyable	Keep	335.6311	<0.001	1142	8
Credit Card Safety Importance	Drop	3.9872	0.408	1139	4
Convenience Importance	Keep	53.2858	<0.001	1138	8
Price Importance	Drop	4.9184	0.296	1138	4
Enjoyment Importance	Keep	47.4215	<0.001	1140	8
Ease of Transactions Importance	Keep	34.6676	<0.001	1139	8

Univariate Logistic Regression Fits

Eight of the predictor variables from the correlation study are kept and two discarded. Next, with attitude variable 'good'- booking with a travel website set as the dependent or response variable and testing the belief 'convenient' as a predictor, univariate logistic regression was performed using a level of significance of 0.05. Other remaining predictor variables are tested in this manner also. The decision to keep predictor variables at this stage was made primarily based on the likelihood test. Results for all eight variables are summarized in Table H5.35.

Table H5.35
Summary of the Univariate Fits - Ordered Logistic Regression

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
Convenient	**Keep**	233.46	0.0000	-1634.8394
Safe using credit card	**Keep**	109.20	0.0000	-1705.0296
Inexpensive/Expensive	**Keep**	24.50	0.0000	-1745.0507
Easy/Difficult	**Keep**	49.75	0.0000	-1721.7504
Enjoyable	**Keep**	295.88	0.0000	-1603.9245
Convenience Importance	**Keep**	28.55	0.0000	-1731.6966
Enjoyment Importance	**Keep**	11.67	0.0029	-1743.0867
Ease of Transactions Importance	**Drop**	8.86	0.0119	-1742.7046

Stepwise ordinal logistic regression was performed to assess the impact of the remaining predictor variables on the attitude 'good'- booking with a travel website. Results can be seen in Table H5.36.

Table H5.36
Model Building for Hypothesis H1b Attitude – 'Good'

Ordered logistic regression   Number of obs   =   1118
                                LR chi2(12)   =   478.95
                                Prob > chi2   =   0.0000
Log likelihood = -1469.3176   Pseudo R2   =   0.1401

```
-------------------------------------------------------------------------
   Good              | Odds Ratio  Std. Err.    z   P>|z|   [95% Conf. Interval]
-------------+-----------------------------------------------------------
Convenient_2          2.043689   .2767778   5.28   0.000   1.567242   2.664977
Convenient_3          4.705846   .783405    9.30   0.000   3.395737   6.521408
Safe using credit card_2   1.438733   .1887847   2.77   0.006   1.112472   1.860679
Safe using credit card_3   2.064681   .3192478   4.69   0.000   1.524886   2.795558
```

Inexpensive/Expensive_2	.9882923	.1309807	-0.09	0.929	.7622083	1.281437
Inexpensive/Expensive_3	.6793486	.1001856	-2.62	0.009	.508819	.9070306
Easy/Difficult_2	1.536757	.2366914	2.79	0.005	1.136326	2.078296
Easy/Difficult_3	1.31352	.1852904	1.93	0.053	.996237	1.731851
Enjoyable_2	3.177255	.4224955	8.69	0.000	2.448294	4.123259
Enjoyable_3	7.850186	1.36028	11.89	0.000	5.589639	11.02494
Convenience Importance_2	.9771756	.136729	-0.17	0.869	.7427971	1.285509
Convenience Importance_7	.7072728	.1067719	-2.29	0.022	.5261229	.9507947

-------------+--

/cut1	.364862	.1836635		.0048881	.7248358
/cut2	2.081075	.194981		1.698919	2.463231
/cut3	3.174738	.2075333		2.767981	3.581496
/cut4	4.602541	.2315083		4.148793	5.056289

Attitude – beneficial/useless

The response variable is attitude (beneficial - booking with a travel website) and consists of seven categories (1=very useless, 2=2, 3=3, 4=4, 5=5, 6=6, 7=very beneficial).

Predictor variables are beliefs about booking with a travel website: convenient, safe using credit card, expensive, difficult, and enjoyable, each in three categories (e.g. 1= very convenient, 2= convenient, 3= inconvenient). Also, corresponding variables for the importance of those beliefs, measured in three categories (1= unimportant, 2=important, 3=very important). Two exceptions were credit card importance and price importance which were collapsed into two categories (1= somewhat important, 2= very important).

Association (Correlation) Study

A Chi-square test for independence with an alpha of 0.05 between variables indicated statistically significant associations between the attitude 'beneficial' – booking with a travel website, and beliefs 'convenient', 'safe using credit card', 'expensive', 'difficult', 'enjoyable', 'convenience importance', 'enjoyment importance', and 'ease of transactions importance'. The belief predictors having a strong association with the attitude response variable 'beneficial'- booking with a travel website are summarized in Table H5.37.

Table H5.37
Summary of Pearson Chi-square Test of Independence

Variable	Keep/Drop	Pearson	p-value	n	df
Convenient	Keep	94.9820	<0.001	1141	12
Safe using credit card	Keep	40.4666	<0.001	1145	12
Inexpensive/Expensive	Keep	61.7023	<0.001	1142	12
Easy/Difficult	Keep	270.2497	<0.001	1140	12
Enjoyable	Keep	135.6006	<0.001	1140	12

Credit Card Safety Importance	Drop	2.4717	0.872	1137	6
Convenience Importance	Keep	60.8227	<0.001	1136	12
Price Importance	Drop	7.5331	0.274	1137	6
Enjoyment Importance	Keep	35.3703	<0.001	1138	12
Ease of Transactions Importance	Keep	41.5926	<0.001	1137	12

Univariate Logistic Regression Fits

Eight of the predictor variables from the correlation study are kept and two discarded. Next, with attitude variable 'beneficial'- booking with a travel website set as the dependent or response variable and testing the belief 'convenient' as a predictor, univariate logistic regression was performed using a level of significance of 0.05. Other remaining predictor variables are tested in this manner also. The decision to keep predictor variables at this stage was made primarily based on the likelihood test. Results for all eight variables are summarized in Table H5.38.

Table H5.38
Summary of the Univariate Fits - Ordered Logistic Regression

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
Convenient	**Keep**	16.44	0.0003	-2170.8466
Safe using credit card	**Keep**	11.70	0.0029	-2181.1747
Inexpensive/Expensive	**Keep**	34.86	0.0000	-2162.6437
Easy/Difficult	**Keep**	201.06	0.0000	-2076.3011
Enjoyable	**Keep**	5.36	0.0687	-2174.321
Convenience Importance	**Keep**	6.46	0.0395	-2167.0166
Enjoyment Importance	**Drop**	2.01	0.3665	-2171.7913
Ease of Transactions Importance	**Drop**	2.55	0.2793	-2172.2536

Stepwise ordinal logistic regression was performed to assess the impact of the remaining predictor variables on the attitude 'beneficial'- booking with a travel website. Results can be seen in Table H5.39.

Table H5.39
Model Building for Hypothesis H1b Attitude – 'Beneficial'

Ordered logistic regression   Number of obs   =   1126
                                   LR chi2(11)   =   276.86
                                   Prob > chi2   =   0.0000
Log likelihood = -2009.5463   Pseudo R2   =   0.0644

Beneficial	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Convenient_2	1.638537	.4434699	1.82	0.068	.964004	2.785056
Convenient_3	3.557587	1.795486	2.51	0.012	1.323003	9.566436
Inexpensive/Expensive_2	.5247668	.1399369	-2.42	0.016	.3111579	.8850177
Inexpensive/Expensive_3	.2067025	.1045958	-3.12	0.002	.076669	.5572774
Easy/Difficult_2	3.98246	1.062156	5.18	0.000	2.361178	6.716981
Easy/Difficult_3	14.0834	6.841301	5.44	0.000	5.435241	36.49187
Enjoyable_2	.8138984	.1021418	-1.64	0.101	.6364247	1.040863
Enjoyable_3	.6681905	.1034881	-2.60	0.009	.4932509	.9051755
var4	.5860448	.0516401	-6.06	0.000	.4930898	.6965232
var9	1.251329	.1105478	2.54	0.011	1.05238	1.487888
var12	1.315552	.1152618	3.13	0.002	1.107976	1.562018
/cut1	-1.45756	.1613309			-1.773763	-1.141357
/cut2	-.3797661	.1527618			-.6791736	-.0803585
/cut3	.2152851	.1551147			-.0887342	.5193044
/cut4	.9358769	.1600316			.6222208	1.249533
/cut5	1.666558	.1646564			1.343838	1.989279
/cut6	2.661197	.1719393			2.324202	2.998192

Lastly, a backward stepwise selection method was undertaken using a model with all attitude predictors, 'positive', 'good', 'desirable' and 'beneficial'. Those attitude predictors having the highest p-value were excluded from the model one at a time. As the attitude variable 'good' was dropped, the p-values and odds ratios of the attitude variable 'beneficial' deteriorated but p-values of attitudes 'positive' and 'desirable' improved. Also, when the attitude variable 'beneficial' was dropped, the p-values of attitudes 'positive' and 'desirable' improved. Thus, two predictor variables are retained, that is, attitudes 'positive' and 'desirable'.

Appendix I:

PRIOR EXPERIENCE WITH INTERNET INFLUENCES BELIEFS

Hypothesis H1h - Consumers who have more prior experience with the Internet and Internet travel will have more positive beliefs about online travel booking than do consumers who have less prior experience with the Internet.

The response variable is the belief about booking with a travel website being 'safe using credit card' (1= very safe, 2= safe, 3= risky). This is followed by the beliefs 'inexpensive', 'easy', and 'enjoyable' all measured in three categories similarly named as the variable 'safe using credit card'.

Predictor variables are associated with the following questions: "Could you access the Internet with your present computer at home or work?", "Do you have access to the Internet from places other than home or work?", "How long have you been using the Internet?", "About how much time do you use the Internet each week for any reason other than work?", "How many leisure trips have you taken in the past year?", "How often do you visit a travel website to research or book a leisure travel product?", "How much of your leisure travel have you researched online in the past 12 months?", "How much of your leisure travel have you purchased online in the past 12 months?". Additional predictor variables were prior experience purchasing specific travel products online such as 'cruises or charters', 'destination tour/attraction tickets', 'vacation packages', 'boat tours', 'hotels or accommodation', 'wine tours', 'all-inclusive resorts', 'airline tickets', 'car rentals', 'scenic rail tours', 'long-distance train tickets'. The categories used for these variables were adopted from Section 5.6.1.

Association (Correlation) Study – belief 'safe using credit card'

A Chi-square test for independence was used to indicate statistically significant associations between the response, 'safe using credit card' and predictor variables.

Table I5.61
Summary of Pearson chi-square test of independence

Variable	Keep/Drop	Pearson	p-value	n	df
Access Internet from home	Drop	3.6227	0.163	1134	2
Access internet elsewhere	Drop	4.3494	0.114	1125	2
How long using Internet	Keep	6.4486	0.040	896	2
How much time use Internet	Keep	12.8663	0.012	1137	4
Cruises or Charters	Drop	5.6318	0.060	1146	2
Destination tour/ attraction tickets	Keep	11.1078	0.004	1146	2
Vacation packages	Keep	8.3920	0.015	1146	2
Boat tours	Drop	5.3998	0.067	1146	2
Hotels or accommodation	Keep	35.4735	<0.001	1146	2

Wine tours	Keep	8.2400	0.016	1146	2
All-inclusive resorts	Drop	4.8127	0.090	1146	2
Airline tickets	Keep	34.2698	<0.001	1146	2
Car rentals	Keep	28.6822	<0.001	1146	2
Scenic rail tours	Drop	4.3086	0.116	1146	2
Long-distance train tickets	Drop	2.5992	0.273	1146	2
Number of leisure trips	Drop	0.8187	0.936	1142	4
Frequency visit website	Drop	7.8839	0.247	1133	6
Travel researched online	Keep	31.6670	<0.001	1136	8
Travel purchased online	Keep	60.2540	<0.001	1138	10

Univariate Logistic Regression Fits - belief 'safe using credit card'

Ten predictor variables from the correlation study are kept. Next, with beliefs about booking with a travel website – 'safe using credit card' set as the dependent or response variable and testing each of the ten remaining variables as a predictor, univariate logistic regression was performed.

Table I5.62 shows useful predictors and therefore they were retained after this stage of analysis.

Table I5.62
Summary of the Univariate Fits - ordered logistic regression

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
How long using Internet	**Keep**	5.68	0.0171	-961.7809
How much time use Internet	**Keep**	10.25	0.0059	-1226.2716
Destination tour/ attraction tickets	**Keep**	10.62	0.0011	-1235.6796
Vacation packages	**Keep**	8.29	0.0040	-1236.8454
Hotels or accommodation	**Keep**	32.26	0.0000	-1224.8608
Wine tours	**Keep**	8.19	0.0042	-1236.8969
Airline tickets	**Keep**	28.39	0.0000	-1226.7937
Car rentals	**Keep**	27.04	0.0000	-1227.473
Travel researched online	**Keep**	26.11	0.0000	-1216.8417
Travel purchased online	**Keep**	49.19	0.0000	-1206.6833

Model Building - belief 'safe using credit card'

Four predictors is a reasonably good fit (Log-Likelihood and significance of the predictors) and the variable 'how long using Internet' seems to be an important predictor so it is retained.

Table I5.63

Model Building for Hypothesis H1h – Prior experience with the Internet Influencing safe using credit card belief.

```
Ordered logistic regression              Number of obs  =      896
                                LR chi2(4)   =     42.40
                                Prob > chi2  =     0.0000
Log likelihood = -943.4247              Pseudo R2    =     0.0220
-----------------------------------------------------------------------
Safe credit card   | Odds Ratio  Std. Err.    z   P>|z|   [95% Conf. Interval]
-------------+---------------------------------------------------------
How long_2          .7850186   .0987395   -1.92  0.054   .613502   1.004486
Hotels_1            .6862114   .1143543   -2.26  0.024   .495004   .9512773
Wine tours_1        .4996733   .161206    -2.15  0.032   .2655028  .9403795
Airline tickets_1   .5926335   .1067725   -2.90  0.004   .4163212  .8436143
-------------+---------------------------------------------------------
/cut1 |             -1.217761  .1572006                  -1.525869 -.9096538
/cut2 |             .3359963   .1515624                  .0389393  .6330532
```

Association (Correlation) Study – belief 'inexpensive'

A Chi-square test for independence was used to indicate statistically significant associations between the response, belief 'inexpensive' and predictor variables.

Table I5.64
Summary of Pearson chi-square test of independence

Variable	Keep/Drop	Pearson	p-value	n	df
Access Internet from home	Drop	1.0319	0.597	1128	2
Access internet elsewhere	Keep	8.5162	0.014	1119	2
How long using Internet	Drop	4.9830	0.083	891	2
How much time use Internet	Drop	2.6701	0.614	1132	4
Cruises or Charters	Drop	0.2215	0.895	1140	2
Destination tour/ attraction tickets	Keep	8.1087	0.017	1140	2
Vacation packages	Drop	2.5119	0.285	1140	2

Boat tours	Drop	2.3686	0.306	1140	2
Hotels or accommodation	Keep	15.2372	<0.001	1140	2
Wine tours	Drop	0.7362	0.692	1140	2
All-inclusive resorts	Drop	2.0212	0.364	1140	2
Airline tickets	Keep	19.5138	<0.001	1140	2
Car rentals	Drop	5.8308	0.054	1140	2
Scenic rail tours	Drop	0.0476	0.976	1140	2
Long-distance train tickets	Drop	1.8097	0.405	1140	2
Number of leisure trips	Drop	1.7727	0.777	1136	4
Frequency visit website	Keep	17.4828	0.008	1127	6
Travel researched online	Keep	40.9466	<0.001	1130	8
Travel purchased online	Keep	37.0085	<0.001	1132	10

Univariate Logistic Regression Fits - belief 'inexpensive'

Seven predictor variables from the correlation study are kept. Next, with beliefs about booking with a travel website –'inexpensive' set as the dependent or response variable and testing each of the seven remaining variables as a predictor, univariate logistic regression was performed.

Table I5.65 shows useful predictors and therefore they were retained after this stage of analysis.

Table I5.65
Summary of the Univariate Fits - ordered logistic regression

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
Access internet elsewhere	**Drop**	0.51	0.4746	-1225.6487
Destination tour/ attraction tickets	**Keep**	8.12	0.0044	-1244.4644
Hotels or accommodation	**Keep**	15.07	0.0001	-1240.9914
Airline tickets	**Keep**	19.16	0.0000	-1238.9447
Frequency visit website	**Keep**	12.07	0.0071	-1228.0425
Travel researched online	**Keep**	31.22	0.0000	-1221.9678
Travel purchased online	**Keep**	27.55	0.0000	-1226.1194

Model Building - belief 'inexpensive'

Multicollinearity was noted between variables 'Frequency visit website' and 'Travel purchased online'; dropping the latter variable improved the model.

Table I5.66

Model Building for Hypothesis H1h – Prior experience with the Internet influencing 'inexpensive' belief.

```
Ordered logistic regression              Number of obs  =      1133
                                LR chi2(4)    =    27.30
                                Prob > chi2   =   0.0000
Log likelihood = -1227.2755             Pseudo R2     =   0.0110
-----------------------------------------------------------------------------
Inexpensive          | Odds Ratio  Std. Err.    z   P>|z|   [95% Conf. Interval]
-------------+---------------------------------------------------------------
Frequency visit ~3     1.38555    .2005471   2.25  0.024    1.043321   1.840038
Frequency visit ~4     1.359583   .2093083   2.00  0.046    1.005456   1.838436
Frequency visit ~5     1.545911   .2685481   2.51  0.012    1.099811   2.172957
Airline tickets_1      1.69724    .2261647   3.97  0.000    1.307125   2.203787
-------------+---------------------------------------------------------------
 /cut1 |              -.1053767   .142105                   -.3838974   .173144
 /cut2 |               1.486408   .1493712                   1.193646   1.77917
```

Association (Correlation) Study – belief 'easy'

A Chi-square test for independence was used to indicate statistically significant associations between the response, belief 'easy' and predictor variables.

Table I5.67
Summary of Pearson Chi-square Test of Independence

Variable	Keep/Drop	Pearson	p-value	n	df
Access Internet from home	Drop	0.6892	0.709	1123	2
Access internet elsewhere	Drop	0.6656	0.717	1114	2
How long using Internet	Drop	2.1150	0.347	887	2
How much time use Internet	Keep	12.7097	0.013	1127	4
Cruises or Charters	Keep	7.6072	0.022	1135	2
Destination tour/ attraction tickets	Keep	16.2061	<0.001	1135	2
Vacation packages	Drop	3.6555	0.161	1135	2
Boat tours	Drop	2.5299	0.282	1135	2

Hotels or accommodation	Keep	23.4832	<0.001	1135	2
Wine tours	Drop	2.3590	0.370	1135	2
All-inclusive resorts	Keep	9.9802	0.007	1135	2
Airline tickets	Keep	16.0371	<0.001	1135	2
Car rentals	Keep	15.6268	<0.001	1135	2
Scenic rail tours	Keep	6.4642	0.039	1135	2
Long-distance train tickets	Drop	3.2989	0.192	1135	2
Number of leisure trips	Drop	6.3886	0.172	1131	4
Frequency visit website	Drop	8.3688	0.212	1122	6
Travel researched online	Keep	21.0769	0.007	1125	8
Travel purchased online	Keep	34.3030	<0.001	1127	10

Univariate Logistic Regression Fits - belief 'easy'

Ten predictor variables from the correlation study are kept. Next, with beliefs about booking with a travel website – 'easy' set as the dependent or response variable and testing each of the ten remaining variables as a predictor, univariate logistic regression was performed.

Table I5.68 shows useful predictors and therefore they were retained after this stage of analysis.

Table I5.68
Summary of the Univariate Fits - Ordered Logistic Regression

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
How much time use Internet	**Keep**	9.69	0.0079	-1196.3652
Cruises or Charters	**Drop**	0.39	0.5303	-1209.3672
Destination tour/ attraction tickets	**Keep**	4.84	0.0278	-1207.1446
Hotels or accommodation	**Keep**	4.81	0.0283	-1207.159
All-inclusive resorts	**Drop**	1.01	0.3159	-1209.0613
Airline tickets	**Drop**	1.56	0.2114	-1208.7831
Car rentals	**Drop**	3.85	0.0497	-1207.6383
Scenic rail tours	**Drop**	0.48	0.4878	-1209.3235
Travel researched online	**Drop**	4.01	0.4049	-1197.7144
Travel purchased online	**Drop**	5.71	0.3353	-1197.795

Model Building - belief 'easy'

Table I5.69

Model Building for Hypothesis H1h – Prior experience with the Internet influencing easy belief.

```
Ordered logistic regression              Number of obs  =      1127
                             LR chi2(3)    =    14.10
                             Prob > chi2   =    0.0028
Log likelihood = -1194.1611             Pseudo R2     =    0.0059
```

Belief Easy	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
How much time ~2	1.325789	.1767326	2.12	0.034	1.020954	1.721642
How much time ~3	1.47904	.2013476	2.88	0.004	1.132668	1.931334
Destination tour/_1	1.282676	.1524856	2.09	0.036	1.016074	1.61923
/cut1	-.7623358	.1018193			-.9618979	-.5627736
/cut2	.4675978	.0999191			.2717599	.6634357

Association (Correlation) Study – belief 'enjoyable'

A Chi-square test for independence was used to indicate statistically significant associations between the response, belief 'enjoyable' and predictor variables.

Table I5.70
Summary of Pearson Chi-square Test of Independence

Variable	Keep/Drop	Pearson	p-value	n	df
Access Internet from home	Drop	0.6706	0.715	1111	2
Access internet elsewhere	Drop	4.8956	0.086	1102	2
How long using Internet	Drop	1.5105	0.470	881	2
How much time use Internet	Drop	2.3810	0.666	1115	4
Cruises or Charters	Drop	2.7295	0.255	1123	2
Destination tour/ attraction tickets	Drop	3.1373	0.208	1123	2
Vacation packages	Keep	6.30	0.043	1123	2
Boat tours	Drop	0.5825	0.747	1123	2
Hotels or accommodation	Keep	16.1705	<0.001	1123	2
Wine tours	Drop	1.0855	0.581	1123	2
All-inclusive resorts	Keep	8.9748	0.011	1123	2
Airline tickets	Keep	26.0936	<0.001	1123	2

Car rentals	Keep	9.6826	0.008	1123	2
Scenic rail tours	Drop	2.0691	0.355	1123	2
Long-distance train tickets	Drop	1.3655	0.505	1123	2
Number of leisure trips	Drop	3.7238	0.445	1119	4
Frequency visit website	Keep	13.7667	0.032	1110	6
Travel researched online	Keep	24.2625	0.002	1113	8
Travel purchased online	Keep	31.4539	<0.001	1115	10

Univariate Logistic Regression Fits - belief 'enjoyable'

Eight predictor variables from the correlation study are kept. Next, with beliefs about booking with a travel website – 'enjoyable' set as the dependent or response variable and testing each of the eight remaining variables as a predictor, univariate logistic regression was performed.

Table I5.71 shows useful predictors and therefore they were retained after this stage of analysis.

Table I5.71
Summary of the Univariate Fits - Ordered Logistic Regression

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
Vacation packages	**Keep**	5.37	0.0205	-1178.5834
Hotels or accommodation	**Keep**	14.77	0.0001	-1173.8832
All-inclusive resorts	**Keep**	7.18	0.0074	-1177.6794
Airline tickets	**Keep**	21.73	0.0000	-1170.401
Car rentals	**Keep**	9.39	0.0022	-1176.5737
Frequency visit website	**Keep**	10.21	0.0168	-1161.3228
Travel researched online	**Keep**	16.56	0.0024	-1161.5569
Travel purchased online	**Keep**	22.42	0.0004	-1161.2873

Model Building - belief 'enjoyable'

Multicollinearity was observed between the predictors 'Hotels or accommodation', 'All-inclusive resorts' and 'Airline tickets', hence the latter two variables were deleted.

Table I5.72

Model building for hypothesis H1h – Prior experience with the Internet influencing enjoyable belief.

```
Ordered logistic regression              Number of obs  =      1115
                               LR chi2(6)    =     26.80
                               Prob > chi2   =    0.0002
Log likelihood = -1159.0975              Pseudo R2     =    0.0114
------------------------------------------------------------------------
Belief – enjoyable     | Odds Ratio  Std. Err.    z   P>|z|   [95% Conf. Interval]
-------------+----------------------------------------------------------
Hotels _1                .7443757   .1049119   -2.09  0.036   .5647085   .9812057
Travel purchased ~2      .7016001   .1586827   -1.57  0.117   .4503718   1.09297
Travel purchased ~3      .5774566   .1362736   -2.33  0.020   .3636176   .9170518
Travel purchased ~4      .5045625   .1157563   -2.98  0.003   .3218348   .7910373
Travel purchased ~5      .6006314   .1351376   -2.27  0.023   .3864506   .9335166
Travel purchased ~6      .5129395   .1246054   -2.75  0.006   .3186316   .8257404
-------------+----------------------------------------------------------
      /cut1 |            -1.075659   .1742271                 -1.417138  -.7341799
      /cut2 |             .7347173   .1722526                  .3971085   1.072326
------------------------------------------------------------------------
```

Appendix J:

FACTOR ANALYSIS

Involvement Variables

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.005	50.049	50.049	5.005	50.049	50.049	4.666
2	1.477	14.770	64.819	1.477	14.770	64.819	2.870
3	.728	7.279	72.098				
4	.699	6.987	79.085				
5	.524	5.245	84.329				
6	.431	4.308	88.637				
7	.418	4.176	92.814				
8	.328	3.280	96.093				
9	.233	2.334	98.427				
10	.157	1.573	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.
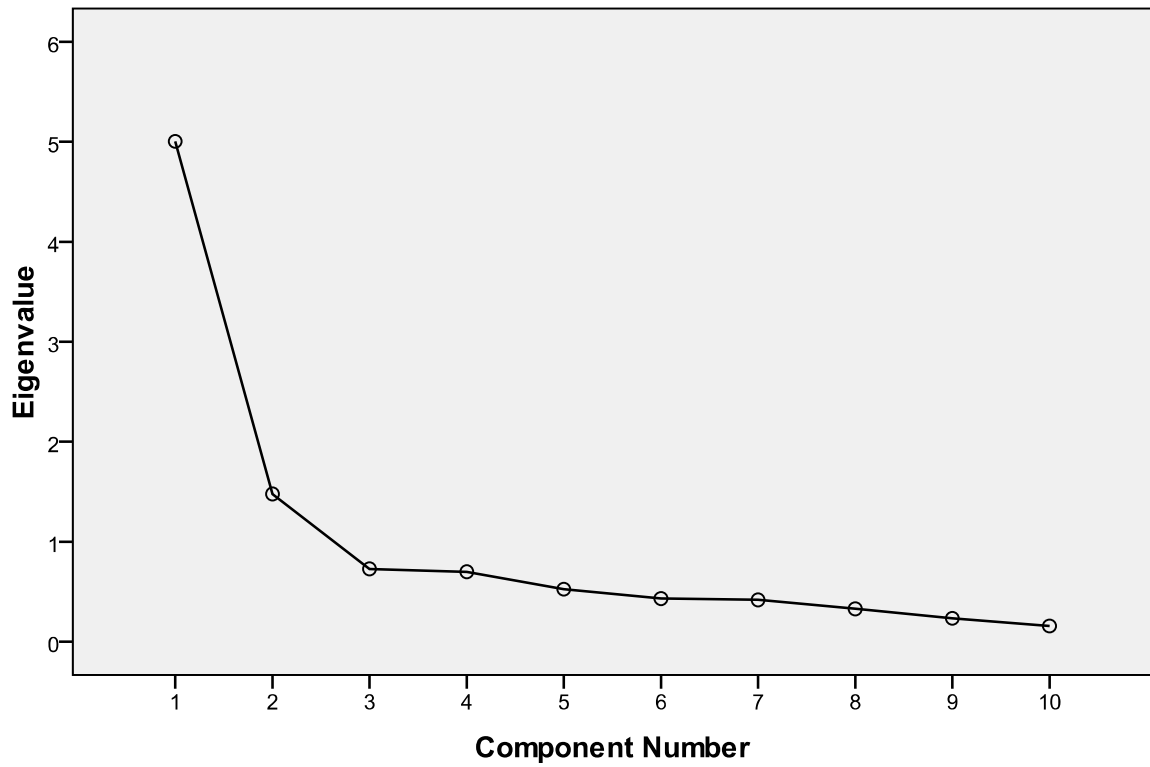
Component Correlation Matrix

Component	1	2
1	1.000	-.356
2	-.356	1.000

Extraction Method: Principal
Component Analysis.
 Rotation Method: Oblimin with
Kaiser Normalization.

Scree Plot

Pattern Matrix[a]

	Component	
	1	2
Interesting - Traveling and travel planning for me is:	.914	
Exciting - Traveling and travel planning for me is:	.907	
Valuable - Traveling and travel planning for me is:	.869	
Fascinating - Traveling and travel planning for me is:	.767	
Involving - Traveling and travel planning for me is:	.723	

Needed - Traveling and travel planning for me is:	.586	
Unimportant - Traveling and travel planning for me is:		.780
Irrelevant - Traveling and travel planning for me is:		.742
Means nothing to me - Traveling and travel planning for me is:		.723
Unappealing - Traveling and travel planning for me is:	-.347	.575

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 5 iterations.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.886
Bartlett's Test of Sphericity	Approx. Chi-Square	6284.424
	df	45
	Sig.	.000

Product Knowledge Variables

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.320	71.995	71.995	4.320	71.995	71.995
2	.637	10.617	82.612			
3	.468	7.792	90.404			
4	.272	4.534	94.938			
5	.175	2.921	97.859			
6	.128	2.141	100.000			

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.320	71.995	71.995	4.320	71.995	71.995
2	.637	10.617	82.612			
3	.468	7.792	90.404			
4	.272	4.534	94.938			
5	.175	2.921	97.859			
6	.128	2.141	100.000			

Extraction Method: Principal Component Analysis.

Scree Plot
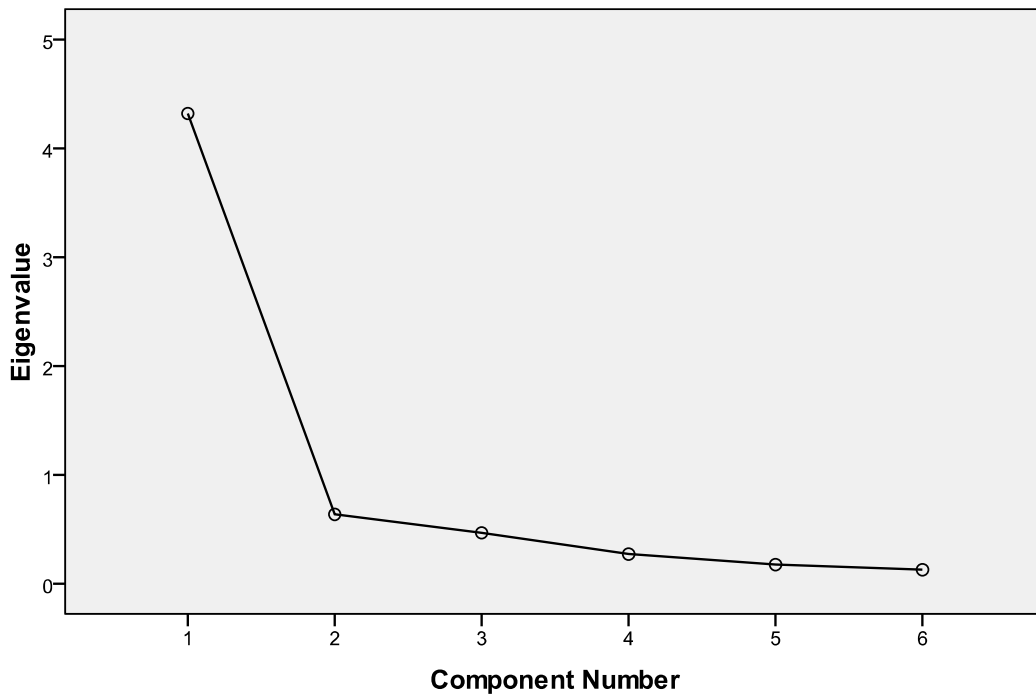
Component Matrix[a]

	Component
	1

Compared to your friends and acquaintances, how much do you feel you know about travel destinations?	.873
Compared to a travel agent, how much do you feel you know about travel products?	.865
Compared to a travel agent, how much do you feel you know about travel destinations?	.863
Compared to your friends and acquaintances, how much do you feel you know about travel products?	.846
How much do you feel you know about travel destinations?	.839
How much do you feel you know about travel products?	.803

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Rotated Component

Matrix^a

a. Only one component was extracted. The solution cannot be rotated.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.824

Bartlett's Test of Sphericity	Approx. Chi-Square	5648.306
	df	15
	Sig.	.000

Motivation Variables

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.569	41.533	41.533	4.569	41.533	41.533	4.299
2	1.598	14.529	56.062	1.598	14.529	56.062	2.540
3	1.075	9.772	65.834	1.075	9.772	65.834	1.240
4	.651	5.920	71.754				
5	.641	5.823	77.578				
6	.538	4.894	82.471				
7	.508	4.620	87.091				
8	.424	3.854	90.945				
9	.374	3.399	94.344				
10	.318	2.887	97.231				
11	.305	2.769	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Component Correlation Matrix

Component	1	2	3
1	1.000	.319	.109
2	.319	1.000	-.042
3	.109	-.042	1.000

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Scree Plot
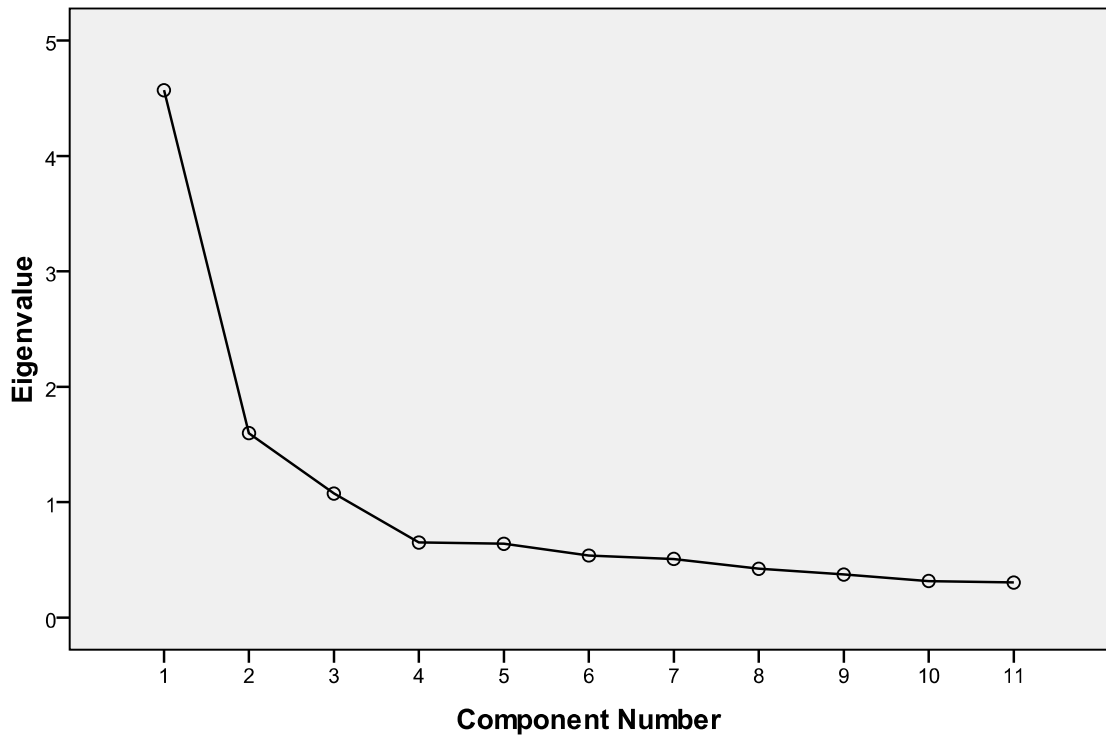
Pattern Matrix^a

	Component		
	1	2	3
Because it gives quick and easy access to large volumes of information	.871		
Overall, I learn a lot from using the Internet	.806		
It's convenient to use	.786		
Overall, information obtained from the Web is useful	.769		
I can use it anytime, anywhere	.685		.379

Because it makes acquiring information inexpensive	.640		
So I can learn about things happening in the world	.537	.336	-.375
To meet people with my interests		.915	
To express myself freely		.721	
I wonder what other people said		.656	
I can get what I want for less effort			.723

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 9 iterations.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.872
Bartlett's Test of Sphericity	Approx. Chi-Square	4890.496
	df	55
	Sig.	.000

DEMOGRAPHIC ANALYSIS CHARTS

Figure K5.111

Age and Mean Scores of Online Travel Booking Intention
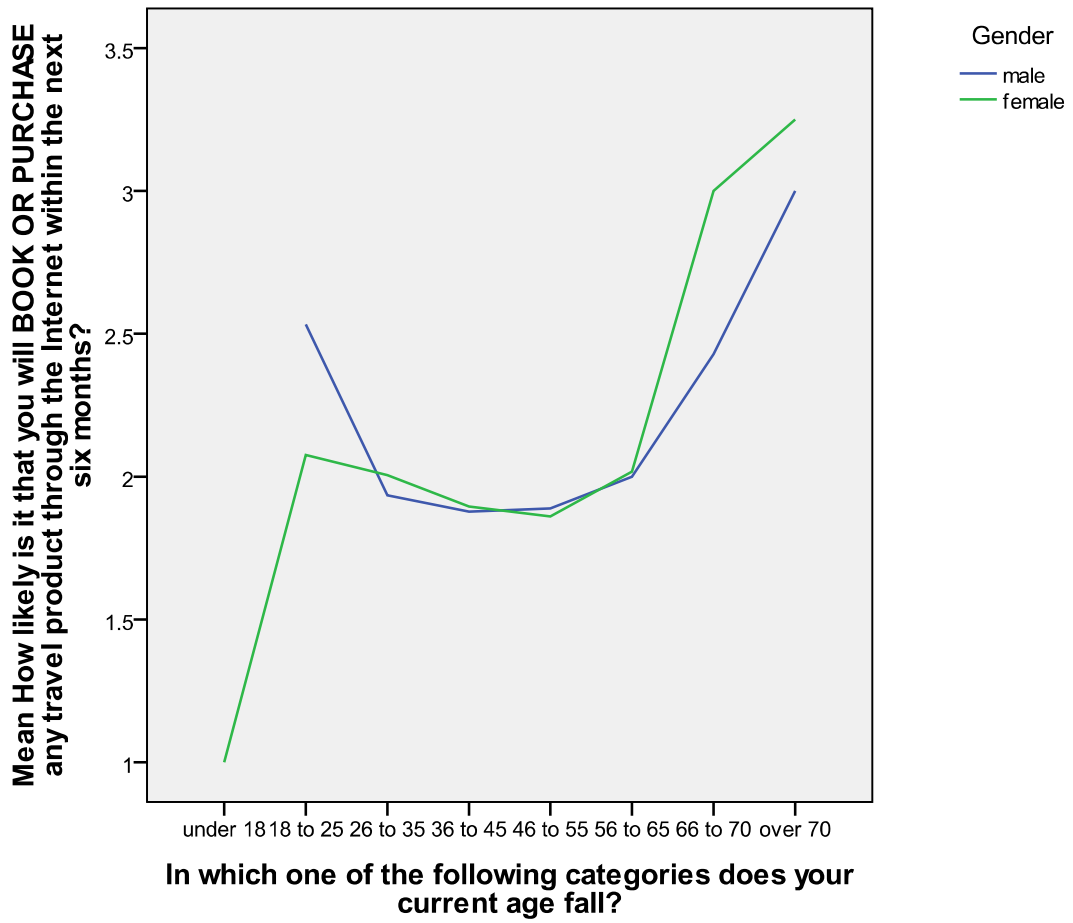
Figure K5.112

Education and Mean Scores of Online Travel Booking Intention
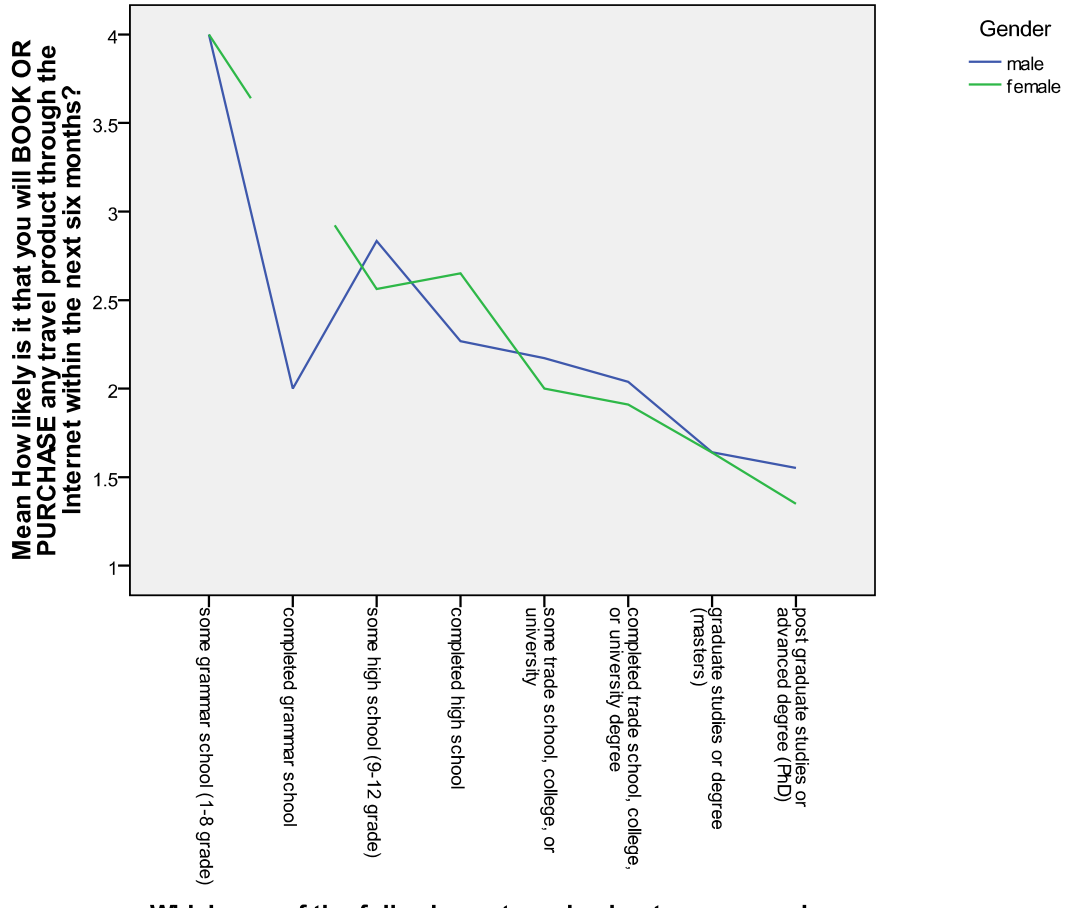
Figure K5.113
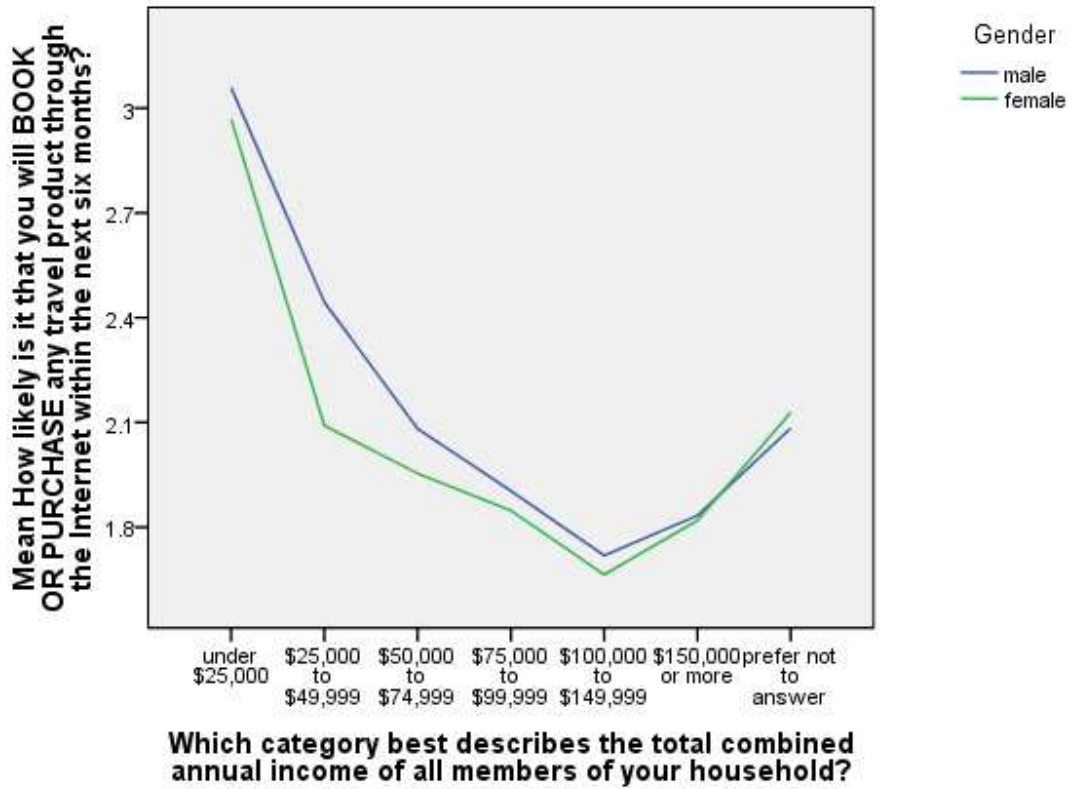
Income and Mean Scores of Online Travel Booking Intention

Figure K5.114

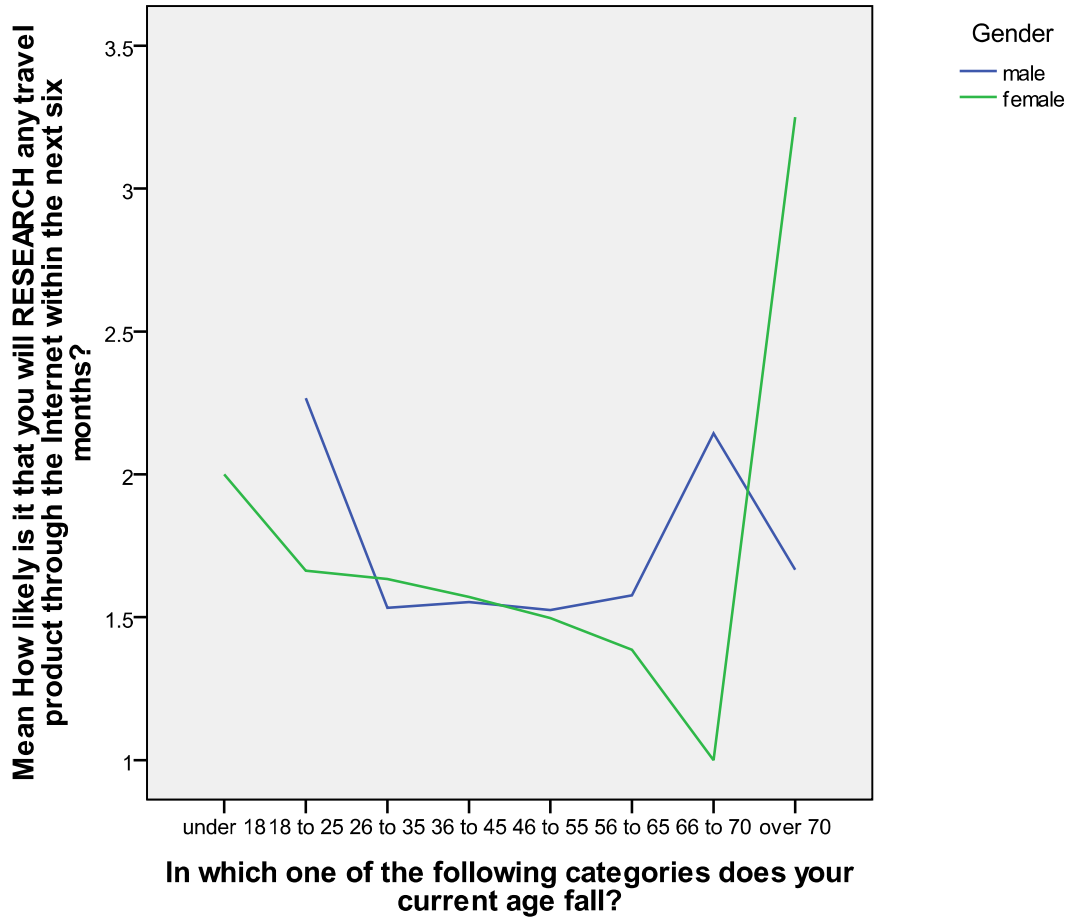Age and Mean Scores of Online Travel Researching Intention

Figure K5.115
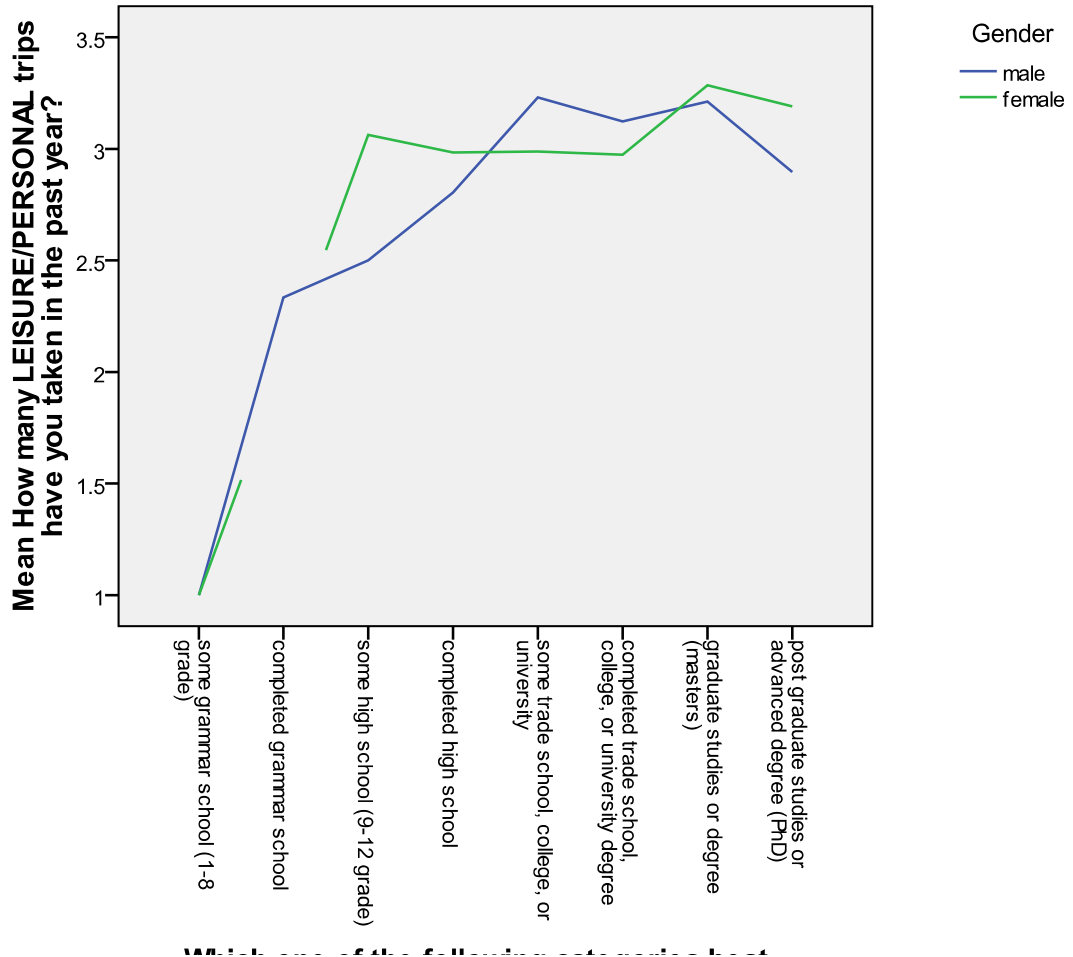Education Level and Mean Number Leisure Trips Taken in Past Year

Figure K5.116
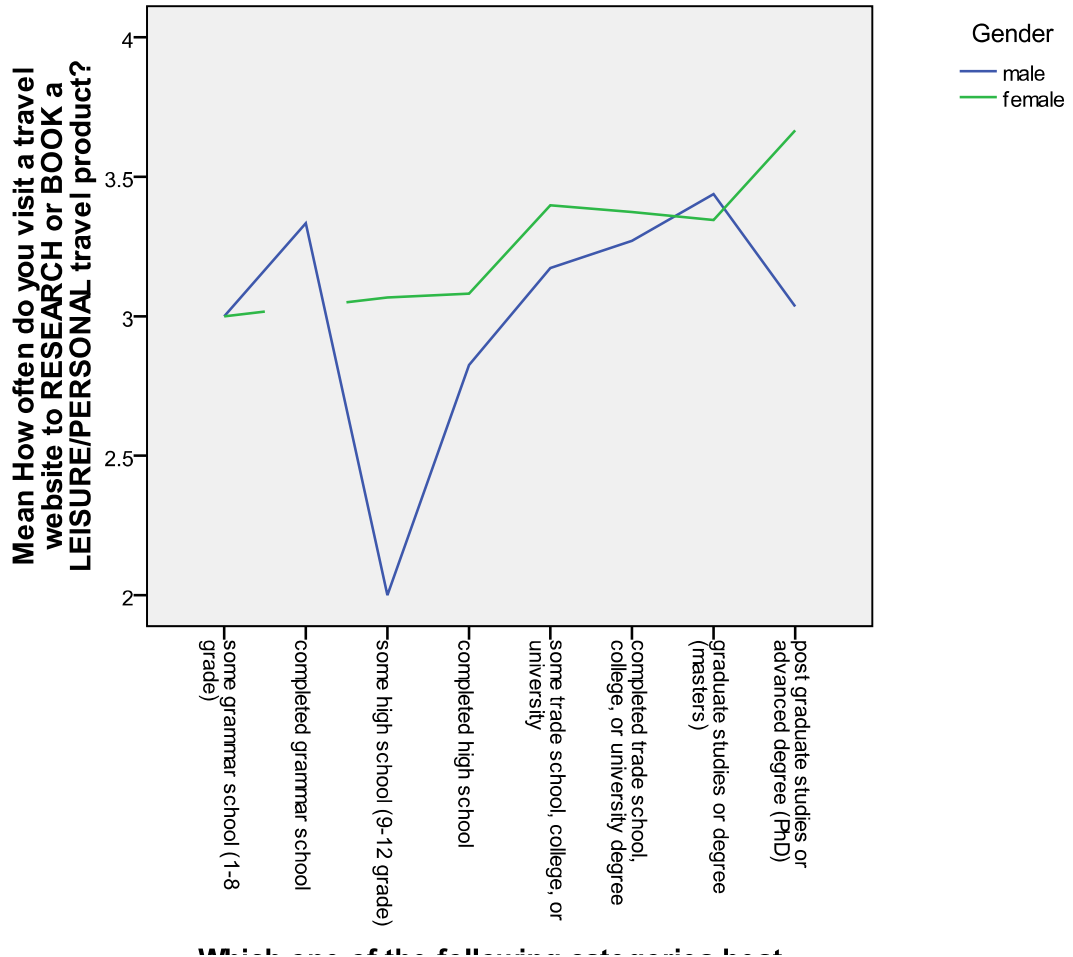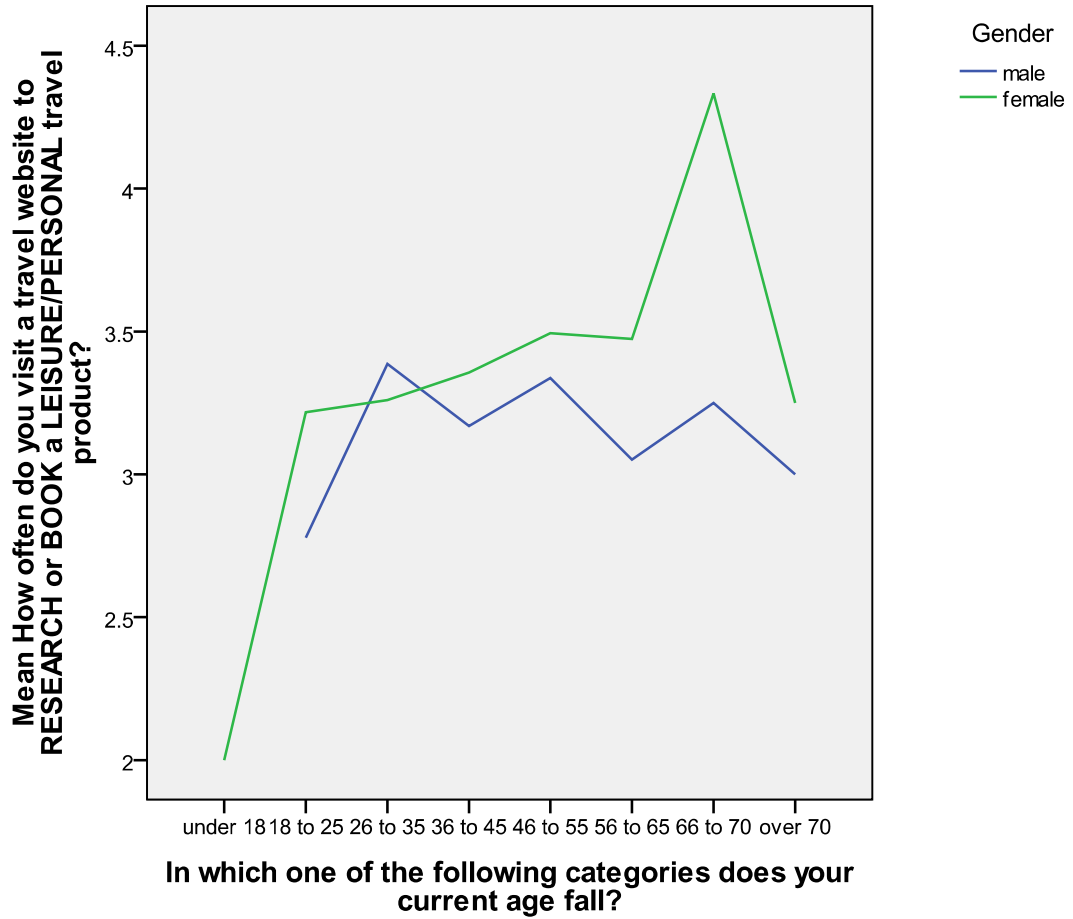Education Level and Mean Number of Times Visiting a Travel Website

Figure K5.117
Age and Mean Number of Times Visiting a Travel Website

<u>Appendix L:</u>

LOGISTIC REGRESSION METHOD

Association (correlation) study

For a chi-square test of independence with an alpha of 0.05 between variables we assume the null hypothesis is true, that there is independence between the predictor and response variable. If the *p*-value is less than the α level of significance, the value of the test statistic is in the rejection area. Similarly, if the *p*-value is greater than or equal to α, the value of the test statistic is not in the rejection region. Chi-square tests were repeated for all predictor variables against the response variable and numerous tables show the summarized results.

Univariate Logistic Regression Fits

Logistic regression applies maximum likelihood estimation after transforming the dependent into a logit variable thereby estimating the odds of a certain event occurring. Maximum likelihood estimation is the procedure for estimating coefficients, where the statistical procedure starts with arbitrary values of coefficients and determines the direction and size of change in the coefficients that will maximize the likelihood of obtaining the observed frequencies. Residuals are then tested and another determination of the size and direction of change in coefficients is made, and this continues until the coefficients change very little and convergence is reached. The Wald statistic, on the other hand, follows ML and tests the significance of individual independent variables using its coefficient and the corresponding standard error.

Univariate logistic regression fits were performed for all variables kept after the correlation study. (Missing data is not a large issue. Also, if missing values are present in the data, Stata will take care of them and delete them.) The likelihood estimation used is an iterative process for calculating estimates of β_0 and β_1, the unknown parameters, and this special computational process is programmed into the logistic regression software of Stata. The likelihood function expresses the probability of the observed data as a function of the unknown parameters. The maximum likelihood estimators of these parameters are chosen to be those values that maximize this function. Therefore, the resulting estimators are those that agree most closely with the observed data.

Two hypotheses are of interest, the null hypothesis, which is that all the coefficients in the regression equation take the value zero, and the alternate hypothesis that the model currently under consideration is accurate. Observing the exact data we actually derive under each of these hypotheses assesses the probability or likelihood. The result is nearly always a small number, and to make it easier to handle, we take its natural logarithm (i.e. its log base *e*), giving us a log likelihood. Probabilities are always less than one, so log likelihoods are always negative.

After estimating the coefficients we assess the significance of the variables in the model. The statistical hypothesis is used to determine whether the independent variable in the model is significantly related to the outcome variable. The guiding principle in testing

for the significance of the coefficients is the same as that used in linear regression except we compare observed values of the response variable to predicted values obtained from models with and without the variable in question. In logistic regression a comparison of observed to predicted values is based on the log likelihood function.

$$L(\boldsymbol{\beta}) = \ln[l(\boldsymbol{\beta})] = \sum_{i=1}^{n} \left\{ y_i \ln[\pi(x_i)] + (1 - y_i)\ln[1 - \pi(x_i)] \right\}$$

The vector of parameters (β_0, β_1) is an arbitrary value of $\boldsymbol{\beta}$. To find the value of $\boldsymbol{\beta}$ that maximizes $L(\boldsymbol{\beta})$ we differentiate $L(\boldsymbol{\beta})$ with respect to β_0 and β_1 and set the resulting expressions equal to zero. For a dichotomous outcome variable the value of the outcome variable given x is $y = \pi(x) + \varepsilon$, and ε assumes one of two possible values. If $y = 1$ then $\varepsilon = 1 - \pi(x)$ with a probability $\pi(x)$, and if $y = 0$ then $\varepsilon = -\pi(x)$ with probability $1 - \pi(x)$. Consequently, ε has a mean zero and variance equal to $\pi(x)[1 - \pi(x)]$ and therefore it follows a binomial distribution with probability given by the conditional mean, $\pi(x)$. This contrasts with linear regression where the outcome variable may be expressed as $y = E(Y|x) + \varepsilon$. Here, ε is the error and expresses an observation's deviation from the conditional mean but in linear regression the assumption is that ε follows a normal distribution with mean zero and some variance that is constant across levels of the independent variable. The conditional distribution of the outcome variable, given x, will be normal with mean $E(Y|x)$, and a variance that is constant.

In logistic regression, the comparison of observed to predicted values using the likelihood function is based on the following expression:

$$D = -2\ln\left[\frac{\text{(likelihood of the fitted model)}}{\text{(likelihood of the saturated model)}}\right]$$

The quantity inside the large brackets in the expression is called the likelihood ratio. Using minus twice its log is needed to obtain a quantity whose distribution is known and can therefore be used for hypothesis testing purposes. This test is the likelihood ratio test. The test statistic D in the equation is called the deviance and it plays the same role that the residual sum of squares does in linear regression. Using the log likelihood function above, the expression becomes what is shown below, where $\hat{\pi}_I = \hat{\pi}_I(x_i)$. In general, we use the symbol of $\hat{}$ to denote the maximum likelihood estimate of the respective quantity.

$$D = -2 \sum_{i=1}^{n} \left[y_i \ln(\hat{\pi}_i/y_i) + (1 - y_i) \ln(1 - \hat{\pi}_i/1 - y_i) \right]$$

For the purposes of determining the significance of an independent variable we compare the value of D with and without the independent variable in the equation. The change in D due to the inclusion of the independent variable in the model is obtained as

$G = D$ (model without the variable) – D (model with the variable)

This statistic plays a similar role in logistic regression as the numerator of the partial F test in linear regression. Because the likelihood of the saturated model is common to both values of D being differenced to compute G, it can be expressed as

$$G = -2\ln\left[\frac{\text{(likelihood without the variable)}}{\text{(likelihood with the variable)}}\right]$$

Under the hypothesis that β_1 is equal to zero, the statistic G follows a chi-square distribution with one degree of freedom in the case of a single independent variable (and one category of it) under the null hypothesis. Thus, when the *p*-value associated with this test is less than 0.05, we reject the null hypothesis that $\beta_1 = 0$, as it is not consistent with the data, and we conclude the independent variable contributes significantly in explaining variation in the response variable. The independent variable is deemed a useful fit.

Another statistical equivalency test that is sometimes used is the Wald test which is obtained by comparing the maximum likelihood estimate of the slope parameter $^\wedge\beta_1$ to an estimate of its standard error. In this case the resulting ratio, under the hypothesis that $\beta_1 = 0$, will follow a standard normal distribution, where z denotes a random variable following this distribution. This test, reports Hosmer & Lemeshow (2000), is not usually recommended over the likelihood ratio test. The likelihood test is primarily used to test the significance of predictor variables in a model. The Wald statistic plays a dominant role when fitting a multivariable model and is first shown in section 5.3.3.

The statistical software Stata was used in the logistic regression calculations as it is reported to be easier to work with than SPSS, and Tabachnick and Fidell (2001) indicate SPSS only analyzes two-category outcomes. A Stata command is used to fit ordered logit models of an ordinal dependent variable on the independent variables. The ordinal logistic regression model is an extension of binary logistic regression. An ordinal variable is a variable that is categorical and ordered. Categorical variables take on a finite number of values each denoting membership in a subclass or level. For instance, an attitude variable in this survey has ordered variations of the concept "desirability" in a 7-point semantic differential scale ranging in subclasses from 7 - "undesirable" to 1 - "desirable". Likewise, a belief variable varies from 7 - "inconvenient" to 1 - "convenient", and other questions contain categories or levels of "importance" from "very important" to "very unimportant". The proportional odds model assumes that the model coefficients for each level or response are equal, or close to being equal. In Stata, the ordinal logistic regression model is expressed as:

$$\ln(Y_j') = \ln\left(\frac{\pi_j(x)}{1 - \pi_j(x)}\right) = \alpha_j + \left(-\beta_1 X_1 - \beta_2 X_2 - ...\beta_p X_p\right)$$

Another Stata command was used to expand terms containing categorical variables into indicator (also called dummy) variable sets by creating new variables, and Stata executes the command with the expanded terms. An indicator or dummy variable is a special type of two-valued categorical variable that contains values 0, denoting false, and 1, denoting true. The information contained in any k-valued categorical variable can be equally well

represented by k indicator variables. Instead of one variable recording values representing very important, important, somewhat important, you can have three indicator variables indicating the truth or falseness of "result is very important", "result is important", "result is somewhat important".

Even though Stata creates k indicator variables as explained above, there is a procedure of omitting the first group or the most prevalent one as this eases in interpretation and it is usually a good baseline. For example, in a logistic regression test where the belief of 'convenience' has three categories after seven categories are collapsed into three, 1 = very convenient, 2 = convenient, 3 = inconvenient with corresponding frequencies 626, 302, and 237 respectively, the interpretation would be found in making statements like "compared with very convenient, responses of convenient and inconvenient…". Therefore, the prescription for categorical variables is: 1) convert each k-valued categorical variable to k indicator variables, 2) drop one of the k indicator variables; usually the most popular category, 3) fit the model on the remaining k –1 indicator variables.

A Stata command yields the interpretation of parameter estimates as odds ratios. That is, the parameter estimates are exponentiated to provide odds ratios. Finally, another Stata command prevents the display of an iteration log.

Model Building

At the completion of the univariate analyses, we select variables for the multivariable analysis in the model building strategy to explain the predictors for the response variable. A stepwise method is used in which variables are selected either for inclusion or exclusion from the model in a sequential fashion based on statistical criteria. The approach allows for examination of a collection of models, which might not otherwise have been examined. Following the fit of the multivariable model, the importance of each variable included in the model should be verified through an examination of the Wald test statistic for each variable, and a comparison of each estimated coefficient with the coefficient from the model containing only that variable. Variables that do not contribute to the model based on these criteria are removed and a new model should be fit. The new model is compared to the old, larger model using the likelihood ratio test. The estimated coefficients from the full model are compared to the remaining variables. Our concern is about the variable whose coefficients have changed noticeably in magnitude. This indicates that one or more of the excluded variables were important. This process of deleting, refitting and verifying continues until only the important variables are included in the model.

One researcher, Joseph Hilbe (2009) reports that categorical x categorical interactions are possible but can be very difficult to interpret especially when there are more than 3 levels for each predictor. The number of interactions grows as M x N grows. It is also typical that the cells of many discrete covariates like age for example will have substantial differences in values making meaningful interactions problematic. As a result, due care will be taken when interpreting the statistical results since variables are categorical.

The process outlined above was used firstly to test H_1 hypotheses shown in Figure 10 and the results are illustrated in individual models for each hypothesis. In the final model building stage Models 1, 2 and 3 are developed and compared to determine the best fitting model for predicting online booking intention, which is the ultimate goal of this research study.

Final Model Building

The final model building process involves determining which variables best predict online travel booking intention. The first model developed, Model 1, will use the variables from each relevant hypothesis test that contributes directly to online travel booking intention shown earlier in Figure 10. These variables come from hypotheses H_{1g}, H_{1i}, H_{1j} and H_{ik}. Model 2 contains variables of product knowledge, involvement and motivation that are not shown in Figure 10 but are known to influence online booking intention as revealed by qualitative research and through the literature review. The development of Model 2 follows the same statistical procedure outlined above, starting with an association study followed by univariate analysis and ending with stepwise logistic regression multivariable model building. Model 3 utilizes the most statistically significant variables from Models 1 and 2. The three models will be compared to find the one that best explains determinants affecting the outcome variable, online travel booking intention. Thus, a total of three final models are built using logistic regression. All three models, exhibited in Section 5.10, use relevant variables or determinants that contribute to online booking intention.

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