Adoption and Non-Adoption: Profiling Internet Usage among Tourists to New Zealand

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Dedicated to my wife and best friend – Hemalatha; to my parents Ramachandra and Anasuya Bai, the first and best teachers of all, who will always live in my heart. My parents-in-law, who prodded me and forced me to complete a long time dream, I believe they would all be proud when they know that I have come this long way just to prove that “I can do it too”.

God bless all. Sarve Janah Sukhino Bhawantoo. Kia Tau Te Rangimarie

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On commencing this study my supervisor informed me that I would discover three things: first, I would be better informed about the subject matter of the research, second, about the process of research and third, I would learn something about myself. Certainly the research process itself has been important in getting to better understand the nature of research and the nature of quantitative data. The importance of literature in helping to formulate research design is far better understood. The pain

of waiting for people to complete questionnaires and the pressure of getting sufficient respondents are also better understood. As for myself, I always guessed I could be pretty obstinate – and that obstinacy has helped me in completing this project!

Tena koutou, tena koutou, tena koutou.

Synopsis

Since the explosion of the internet as a business medium, one of its primary uses has been marketing. The advantages of using the internet for business-to-consumer transactions are clear. The openness of the internet is creating opportunities for virtually all companies across various industries. The words ‘internet’, ‘World Wide Web’, ‘www’ or the ‘web’ refer to the same thing and are used interchangeably within this research study.

The tourism industry is also experiencing a rapid adoption of the internet technology for marketing travel products and services. As a destination New Zealand is a small country comprising two main land masses and smaller outlying islands, with a population of about 4 million people (Statistics New Zealand 2004). Tourism is promoted as an essential part of the national economy, particularly to earn foreign exchange and generate employment. The number of international tourists visiting New Zealand is 2.2 million (Tourism New Zealand, 2006). In New Zealand almost all regional tourism organizations (RTOs) have a web presence, thereby exposing potential tourists to an array of destinations to visit.

However, there are few New Zealand based studies that profile tourists based on their internet adoption and the differences between internet users and non-users. The question that baffles every business manager is what predisposes consumers to use a website? This is the fundamental question that motivated the study. While usability does play a major role in the adoption and use of a particular website, it is outside the scope of this project, otherwise the scope would have been too large and complicated to permit a useable questionnaire given the other concerns about respondents’ past

experiences and attitudes toward use of the net for the specific purposes of holiday purchases.

The study draws upon innovation diffusion theory (IDT) and more recent conceptualizations of IT adoption behaviour to examine differences among Rogers' (1995) adoption categories. Within this context, 'adoption' refers to the stage in which a technology is selected for use by an individual. 'Diffusion' refers to the stage in which the technology spreads to general use and application.

For this study an attempt is made to create a behavioural profile of visitors based on a sample of 517 overseas visitors to New Zealand. Visitors were asked to complete a questionnaire and provide information on their demographics, travel related behaviour, internet usage patterns, perceptions of the internet and online shopping in general. The thesis thus describes the initiation and evolution of an empirical research project, which investigates the adoption and diffusion of internet technologies amongst international visitors to New Zealand. The study was launched in an attempt to: 1) learn more about internet usage by visitors to New Zealand; 2) create a psychographic profile of visitors; 3) attempt to empirically validate the technology acceptance model (TAM); and 4) fill a noticeable void so that future researchers on IT and internet adoption by tourists in New Zealand have a foundation and starting point. Most of the previous research related to TAM has been in workplace related situations while studies in tourism have used students as subjects, rather than actual visitors to a particular destination (Shang et al., 2005, Moon and Kim, 2001, Klopping and McKinney, 2004). Specific market studies undertaken by destination marketing organisations or regional tourism organisations were considered only inasmuch as

they aided generalization as place specificity hindered conceptual development pertaining to themes of adoption and general usage patterns.

The study seeks to build on Rogers' (1995) seminal work on the diffusion of innovations and make a unique contribution to existing diffusion studies by its focus on the individual visitors as the unit of analysis and by its test of the TAM model. This study presents descriptive results via standard statistical analysis, a cluster analysis of users and a structural equation modelling of the TAM applied within a context of international visitors to New Zealand.

The data were collected at major locations – the viaduct basin in Auckland and the international departure lounge at the Christchurch International Airport. The two locations were chosen to enable faster data collection. Initially the data was gathered at the viaduct basin in Auckland but the number of respondents was not many. Since the data collection was slow, decided to collect from Christchurch International airport where departing passengers could be approached. Individual passengers/tourists were approached and a screening question to ascertain if they were visitors or not was asked. If they were visiting, then they were asked to participate in the survey. No prior specific screening was undertaken to determine if they had used internet or not for their trip/travel to New Zealand. However, subsequent analysis shows that only 2.3% of the sample had not used the internet, and 31% of the sample had not bought tourism products or services over the internet. Therefore, overall, experience and internet usage was not uncommon for the majority of the sample, but a large proportion of non-users existed to permit comparative analysis.

While there is a bias towards males in the sample, the 19-35 years age group was slightly more numerous for both genders, than were other age groups. The results

indicate that mean internet usage is comparatively high, as is familiarity with many electronic consumer durables. The sample possesses a bias toward English speaking countries, younger people and educationally higher qualified people. Internet search engines seem to be the most popular source of search.

The socio-demographic variables such as age, gender and educational attainment appeared to be but a moderate influence on general internet usage and thus on the use of the internet for booking holidays. Factor analysis of the attitudinal statements revealed six factors, which accounted for about 60 % of the total variance. The clear emergence of factors enabled the development of clusters. The clusters appear to have significance with reference to usage rates of internet.

The home ownership of electronics shows a high percentage of respondents had mobile phones. This implies that New Zealand Tourism has to look at options or possible services it can introduce to market to these people who could be using mobile devices not only in their country but also while travelling in New Zealand. Wireless is another important development in the field of technology and many of the tourism DMO in other developed countries in Europe and US are adapting approaches based on these technologies to market to potential customers.

CHAPTER 1: Introduction

Internet Tourism Marketing

The current period has been referred to as a 'post-modern epoch' (Rose, 1996, p 3) in an effort by some to encapsulate certain similar societal characteristics and attribute a particular time element to them, and as a justification for their appearance. Tourism has, likewise, been hailed as a catalyst to promote adaptive changes in local culture while preserving or revitalizing local ethnic and cultural identity (Silver, 1993; Medina, 2003). Consequently tourism has been regarded as the example par excellence of a post modernist world where basic wants are satisfied, and status is derived from the consumption of symbols and where symbols derive power separate from the productive process of utilitarian output (Ryan, 1995).

Post modernism and new information technology seem to go hand in hand. The internet originated in the late 1960s as an experimental communication tool among a group of researchers. It is one of the more recent developments in communications and information transfer and, by implication, the transmission of signs and symbols. It is considered a technology asset because of its ability to disseminate large volumes of information quickly and efficiently. The internet population has grown tremendously since its opening to commercial traffic in 1991 (Internet World Stats, 2006). Today the internet has developed into a global electronic network consisting of numerous interconnected networks. The structure of the World Wide Web is a compilation of linked fragments. In order to obtain information from a web site, various steps must be surmounted or hyperlinks must be made. In addition, accessing the internet is becoming increasingly a chosen source of entertainment (GVU 2000). As today's

consumers are focused on saving time and instant gratification they are more likely to access greater amount of product information. The internet has many advantages over traditional media as an information gathering tool with little increasing search effort but immediate reward (Schonland and Williams, 1996). Besides information gathering, consumers can also purchase through this channel.

The phenomenal growth of internet shopping is driven by greater emphasis on consumers' efficient use of time, as well as an increasing number of computer 'savvy' consumers. Additionally the internet has become a popular medium for marketing. The potential of using the internet for marketing activities is derived from its general use as an information exchange system in the digital age (Avlontis and Karayanni, 2000). The information can be stored, indexed, retrieved, restructured and redistributed automatically by software and without human intervention. As more consumers choose to use the internet to buy goods and services, the marketing potential for businesses also increases.

The rapid growth of the internet, especially the World Wide Web (www), has attracted a great deal of interest among both academics and business practitioners, especially in the fields of information technology and marketing. There are also an increasing number of publications on internet tourism marketing, especially in the last few years. The works of Marcussen (1999), Pantazis and Powell-Perry (2004), Li and Buhalis (2005) among others, have provided the necessary background and some-in-depth discussions of the various issues of marketing tourism on the internet, in particular its impacts on tourism distribution. However, this field of research is, by and large, still in its infancy because of changing technology being introduced, and much more effort must be made to improve our understanding of the internet's role in

tourism marketing and the ways through which tourism organisations and destinations can exploit its full potential. There are critics who suggest that the internet will never be adopted worldwide because it is dependent on accessibility to hardware and software and many do not and never will have the necessary resources (Smith and Jenner, 1998). However, with cyber cafes opening up in almost every city and suburb, the question of access is to be questioned. Although this may be true, research to obtain understanding of the people who will adopt the internet is still highly relevant, since these people represent the 'high yield' higher income tourists desired by national tourist organisations (NTOs) like Tourism New Zealand (Tourism Strategy 2010).

The internet, as an advertising and marketing medium, can change the way tourism suppliers interact with their potential customers in many ways (Milne, 1996; Milne, Mason, Speidel and Newman, 2005). In the travel and tourism industry, travel products and services appear to be well suited to internet marketing because of their distinctive high priced, high-involvement, intangible and well differentiated characteristics (Burger, 1997). Tourism is a complex industry and includes many individual stakeholders in the form of hotels, attractions, airlines, travel agents and many others. Examples of products or services that would be categorised as conventional tourism supply organisations include hotels, airlines, attractions, car rentals, tour operators. However, because this research is examining the adoption and diffusion of internet, supply is extended to include destination marketing organisations (DMOs), partly on the premise that by definition tourism is about travel to places away from home. The primary questions of research are mentioned later in the section proposed study.

Characteristics of Tourism Marketing

As noted above travel and tourism products are ideal for marketing on the internet. This is because tourism is an information-intensive industry and the internet is a most effective and efficient means of worldwide information exchange targeted to individuals and their specific interests. Poon (1993, p 154) writes: "In few other areas of activity are the generation, gathering, processing, application and communication of information as important for day to day operations as they are for (the) travel and tourism industry". The internet can greatly facilitate the promotion and distribution of tourist products and potentially enable tourism destinations and enterprises to compete on a level playing ground. The internet can add immense marketing power to both small and large tourism businesses and communities (Milne et al., 2005). The main asset for a presence on the web is knowledge of a technique and not a large capital asset or budget. This means small organisations can have a presence – particularly when aided by DMO s that operate effectively as portals and obtain high recognition in search engines.

As a place product, tourism includes all elements a destination has to offer to tourists, including the social, cultural and physical environments, as well as the 'touristy' components of tourism supply such as attractions, transport, accommodation and other travel related services. The internet as a marketing medium can be of great benefit to 'virtual marketing' in presenting images and information about all these components and thereby users can seek to indicate the 'experiential' as well as more objective attributes of place. Indeed, it becomes possible to 'individualise' usage patterns by data mining to recognize individual preferences while supportive email

facilities can add to a sense of supplier responsiveness (Ulysal and Chang, 2002; Wong, Chen, Chung and Kao, 2006).

To date, the internet is more accessible and less expensive than it was, and the number of internet users is growing tremendously. The global internet audience (Internet World Stats, 2006) has been estimated at more than half a billion people in more than 200 countries. Internet statistics (Internet World Stats, 2006) estimates the growth of internet users between 2000 and 2005 to be around 146%. Almost 14% of the world population seems to be online with North America accounting for 25%, Europe 29% and Asia about 34%. Hence it would not be incorrect to say a global village is a reality (or perhaps a hyper reality) but will be more so in another decade. The gap between those with regular, effective access to digital technologies and those without is referred to as 'Digital divide' (Castells, 1996; Cullen, 2003; Hubregtse, 2005). The digital divide is related to social inclusion and equality of opportunity. With regard to the internet, ease of access is a fundamental aspect, but it is not the sole factor. Effective access also depends on an ability to use ICT effectively, and on the quality of the content that is available. The quality of connection, auxiliary services and other factors that affect effective use are also important (Davison and Cotton, 2003). The divide is not a clear single gap that divides a society into two groups. Disadvantages can be in the form of lower performance computers, lower quality or high priced connections (dialup connections versus broadband), and lack of or difficulty in obtaining technical assistance. The concept of a global information society produces vastly disparate attitudes as to its perceived benefits. The exact nature, impact and outcomes of the information revolution are yet to be determined, but it has already become apparent that the information revolution is changing the way we live, communicate, work, learn and consume, especially in countries like the USA, Europe,

Australia and New Zealand. It has become a cliché that in the future power will increasingly be associated with knowledge and information access rather than commodity ownership (Beldona, Morrison and Ismail, 2003; Kolko, Mcquivey, Gordon and Strohm, 2003; Jackson, Montigni and Pearce, 2001).

In the early days of digital divide analysis, the availability of internet access at an affordable cost was the key issue. However, this distinction has become less important with the social penetration of the internet and technological advances in developed countries (Cullen, 2003; Hubregtse, 2005). Today the discussion of digital divide is moving away from technology itself to skills and literacy. Training in computers, use of internet and refined ways of searching and use of information are the limiting factors causing the divide. Additionally, there exists a tension between information that is freely available, and that which has to be paid for (for example, technical data held on publisher's databases).

Tourism and Technology

Tourism and technology have become inextricably linked and are changing the way we gather travel and tourism information, and purchase tourism products. This section briefly reviews the impact of the techno-economic paradigm on the tourism industry in general. Although reference is made to e-commerce here, e-commerce itself will be discussed in a later section. The primary research questions are detailed in the section proposed study.

As ICT increasingly penetrates our lives, society and economy are adapting to the wave of innovation associated with this change. More recently, the web has drastically changed buyer-seller relationships, tipping the balance of power in favour of consumers through interactive features such as personalization, customised content

and virtual communities that have been introduced as supplies seek competitive advantage. (Detmer, 2002; Wind and Mahajan, 2002.) This trend is creating an extremely competitive marketplace in which consumers have more shopping choices than before. This e-market environment poses special challenges for retailers, perhaps motivating them to radically revise their marketing strategies to secure more targeted customers. Tourism and technology, being two of the largest, most rapidly growing and most dynamic industries (Werthner & Klein, 1999), have become inextricably linked and together they are changing the way the society operates (Sheldon, 1997). Smith and Jenner (1998) note that travel products and services are perfectly suited to online selling because they possess the necessary characteristics that can function in the electronic environment. The tourism industry has always relied heavily on information. In fact, until a tourist visits his/her destination of choice, tourism is mere information. It is information about the place, amusements at the destination, or accommodation at the place and so on that induces a visit. Indeed, even past visits to a given destination become but information which may, or may not, be valid for future visits. Experiences of place can differ dependent on numerous conditions exogenous to the place, such as weather or even sight seeing a place with different people (Trauer and Ryan, 2005).

The nature of tourism marketing, being information-centric, makes it a product 'searched' and evaluated by perusing product related information. This perusal involves the visual, not only in terms of conveying cognitive data, but also in determining an affective or emotive response. Such responses are individualistic, and the ability of the internet to bond itself to learning paradigms to provide personalised responses when a user 'logs on' makes the net an important marketing tool. However, being dependent on effective information flows makes the tourism purchasing

decision a complex one. The importance attributed to the impact of ICT on tourism product perusal and purchase is evident in the proliferation of travel / tourism sites on the internet.

In 1999 travel was the single largest category of online purchases in North America. In 2002 web traffic tracking statisticians claimed that nearly 43% of all US internet traffic was borne by travel sites, while e-enabled travel sales increased 87% on the previous year (NUA Internet Surveys, 2002).There are multiple sources for internet usage, some using population of any given country. Because of differences in methodology, measurement for the same location can vary widely depending on the source. However, as per ClickZ Stats web worldwide US internet users are about 203 million in 2005 which is approximately 20% of the worldwide internet users, estimated at 1.08 billion by ClickZ. However, 1.08 billion from across the globe can now access information on destinations across the globe, including New Zealand, via the internet.

In addition to the internet being a new marketing channel, one of the prime and long term challenges for tourism marketing organisations is to match traditional attributes of service to online features and supply a seamless integration of information and physical services. There is strong personal verification and trust involved in purchasing a tourism product, a role traditionally fulfilled by the seller of the product (or a representative thereof), such as an airline, or a travel agent (Buhalis and Maria, 2002). So, DMOs need to create a sense of trust on their website and infuse confidence in the tourists to use the websites to purchase products or services from it.

One consequence of these actual and potential changes is that the business world is abuzz with the electronic revolution made possible by the internet. This internet

revolution is harnessing a power that we have not seen for about 150 years, not since the industrial revolution. But unlike the industrial revolution, today's electronic power source has helped amplify the human intellect (Venkatraman and Price, 1990; Vijayasarthy and Jones, 2000). The sheer force of how dramatically it is changing the way we are doing business is indeed mind boggling. Society has entered a new wave of techno-economic activity, in which new and evolving communication and transaction technologies are contributing to a global economy, and in which both social and physical computer networks play an interesting and increasingly important role. Information-based industries are becoming increasingly clustered in regional centres of specialisation; and help give birth to new global opportunities of which society has only just begun to scratch the surface. The interlinking of society and technology is a complex attitudinal issue, whereby adoption and diffusion of ICT and e-commerce may be viewed as "a kind of social change, defined as the process by which alteration occurs in the structure and function of a social system" (Rogers, 1995, p 6).

Overview of e-commerce

A brief definition of e-commerce states that e-commerce is "sharing business information, maintaining business relationship and conducting business transactions by means of telecommunication networks" (Zwass, 2003). The early form of e-commerce can be traced back to the use of Electronic Data Exchange. With the Electronic Data Interchange (EDI) system, firms exchanged electronic transaction documents through value added networks. However, it was the commercialisation of the internet and the World Wide Web, that opened a new platform for the development of e-commerce. The internet provides solutions to significant problems that limited the earlier adoption of EDI (Zwass, 2003).

The internet enabled electronic commerce to grow rapidly and e-commerce technologies have fostered an unprecedented range of innovations in business structure, allocation of wealth, and indeed of the fundamental definitions of commerce. E-commerce has developed two distinct directions: Business to Business (B2B) and Business to Customer (B2C). So far, a large part of the online business transactions in terms of sales has been in the B2B category (Reiley and Spulber, 2000; Kishore, Agarwal, and Rao, 2004). B2C category is fast growing, but its share in total retailing remains small. But as a brand new mode of retailing, e-commerce can benefit both buyers and sellers with its revolutionary features such as interactivity, connectivity, flexibility, efficiency, variety, and convenience. The rapid growth in e-commerce and the distinctiveness of this new marketing channel highlight the importance of understanding the effects of the web interface on consumer's online shopping behaviour (Hong, Thong, and Tam, 2004; Joines, Scherer, and Scheufele, 2003; Govers and Hellemans, 2005; Kao, Louvieris, Powell-Perry and Buhalis, 2005).

The fundamental feature of the internet is its interactivity (Butler and Peppard, 1998). Alba and Hutchinson (1987) conceptualized interactivity as a continuous construct capturing the quality of two way communication between two parties. It is suggested that interactivity and quality of communications is the key to good customer relationships. In traditional business, the prevailing communication model between sellers and customers involves a one-to-many communications process whereby the seller transmits information to customers through a medium such as print, broadcast or billboards.

The significance of the internet is that it simultaneously extends the horizon to a many-to-many and one to one communication mode that combines both person and

machine interactivity. Hoffman and Novak (1996) suggest that in a computer mediated communication environment, sellers and customers both interact with the medium (the internet) and with each other. A good New Zealand based example is arguably the 'Trademe' website (www.trademe.co.nz), where a seller communicates with many individually – but the many customers can trace the record of communication. The seller can respond to a customer's query or post information for the customer to query.

Another key feature of the internet that is closely related to interactivity is its connectivity, which has been defined as the ability of consumers to access and participate in internet communications (Hong et al., 2004/5; Gosain, Malhotra, and Sawy, 2004; Kohli, Devaraj, and Mahmood, 2004). The internet has been designed to be open to geographical expansions and to be used by any type of computer although still tending to be subject to English language dominance. This has probably helped the internet to become a global phenomenon. Access to the internet can be 24 hours, 7 days a week. The pervasiveness of this medium is reflected in the monthly growing number of internet users. Due to its increasingly easy access and global pervasiveness, the internet is fast becoming a medium of choice for broadcasting and is likely to surpass other forms of communication including print and broadcasting (Kim and Galliers, 2004; Ashcroft and Hoey, 2001). Indeed, within recent years the use of mp3 files and pod-casting and blogging have driven some of the recent innovations such as 'YouTube'.

The development of e-commerce in the travel industry allows suppliers to reduce transaction costs, since 'disintermediation' is carried out, which enables travellers to bypass traditional retail travel agencies (Athiyaman, 2002; Law, Leung, Wong 2004;

Zhang, 2004; Gharavi and Sor, 2006). Also, the internet provides a flexible medium through which the sellers can offer personalised products/services to their customers. E-commerce is an excellent example where technological flexibility helps extend business horizons. On the other hand, travellers are able to enjoy the provision of extensive information, lower price, discounts, time saving and cost saving. Many researchers have addressed electronic marketing / online shopping (Bakos, 1998; Wang 1998, Peterson et al. 1997) and the consumer adoption of the internet/doing shopping online (Parasarthy and Bhattacherjee, 1998; Liang and Huang, 1998; Pavlou, 2003; Hsu, Yen, Chiu, and Chang, 2006). Pavlou looks at the role of trust and risk on adoption of Internet and he finds there are a high correlation between adoptions these factors. Similarly, Hsu et al., look at post adoption beliefs of perceived usefulness, perceived enjoyment and ease of use. They provide a deeper insight into how to address users satisfaction and continued patronage. Alba and Hutchinson (1987) conceptualized some attractive scenarios of interactive home shopping. They focused on the informational effects of different retailing formats. Also, as noted above, internet technology enables the seller to respond to customer inquiries and suggestions spontaneously. Online shopping is often viewed as a topic of marketing and as such was studied by Bakos (1998). In one word, e-commerce has largely extended the depth and breadth of the relationships between the sellers and the buyers and among the sellers themselves.

The advantages of online shopping for customers are supposed to include convenience of shopping from their desks or armchair, a broader selection of products, competitive pricing, greater access to information and lower search costs (Bakos, 1997). Jarvenpaa and Todd (1997) found that convenience was the single most salient feature of online shopping. Consumers can visit a web site any time and

do not need to worry about traffic, queues, parking, and weight of parcels. In short, in e-commerce consumers are gradually taking control over the transaction process. With the adoption of e-commerce and its benefits being gained by both travel and suppliers and travellers, the travel industry in turn has become one of the strongest performing sectors of e-commerce (Bernstein and Awe, 1999).

E-commerce as Innovation

Although B2C e-commerce still needs to overcome some barriers in order to gain a stronger presence in the retailing sector, this new mode of retailing has stepped on the business stage as an unprecedented innovation in both technological and business terms. E-commerce, while not an innovative technology in itself, can be used in innovative ways to reposition a firm, its marketing strategy, services and products, both within the national and global marketplace. In fact, adoption of e-commerce is different from adoption of other systems which use technology mainly because: (a) at least two parties get involved in any e-commerce transaction and jointly determine outcomes of such a transaction, and (b) the two parties can enjoy instantaneous communication without physical proximity but with common access to visual and other data. Marcussen (1997) points out that the European no-frills airline sector and its internet activities are among the most successful internet sellers. Many authors point out that many airlines offer discount fares that are available exclusively to online users (Smith, 2004; Vincent, 2003).

As customers' become more internet savvy, their expectation of easy access to the tourism product is rising. The internet has the ability to provide a highly suitable and new marketing channel for tourist product, because it can create a direct link between a worldwide supplier and equally dispersed consumers (Inkpen, 1998). Speed is

crucial in the travel industry, and the internet can provide an instant confirmation to an inquiry such as room availability. Consumer expectations are likely to increase pressure on product providers to either offer instantaneous product information satisfaction or lose potential customers (Buhalis & Main, 1998). The relationship between tourism and technology is not a recent phenomenon; it dates back to the early days of computing and the impact of mass travel in 1960s. In fact, it goes back even earlier. For example the success of an early theme park like Luna Park on Coney Island in the 1900s was because it utilised new engineering techniques and the use of electricity! Travel products, in general, engage a higher level of involvement and intangibility than other tangible consumer goods and, therefore, it is claimed, are more easily sold through the web (Bonn et al. 1998; Phau and Poon, 2000; Vijayasarthy, 2002). The emergence of electronic markets and the opportunity for tourism product users to bypass intermediaries in the travel value chain by booking directly on the web has, according to some researchers, rendered travel agents to be an endangered species in the travel industry (Anckar & Walden, 2002; Gratzer, Werthner, Winiwarter, 2004; Bogdanovych, Berger, Simoff, and Sierra, 2006). Since the internet has the potential to provide customers with benefits such as convenience and reduced product cost, others similarly agree that disintermediation of channels is a straightforward consequence of user access to digital networks (Benjamin & Wigand, 1995). Examples in the travel industry of new channels of distribution include discounted/late booking services such as wotif.com or Air New Zealand's 'grabaseat' which illustrates an application of the internet to yield management in the generation of marginal revenues in the sale of aircraft seats.

By facilitating web based sales and honing customer services through customer profiling, travel sites are seemingly providing all a traveller could ever want or need.

Although the internet offers convenient access, potential time savings and cost reduction to end users, there nonetheless appear to be a number of barriers inherent in web consumer's experience, including practical issues such as dial up and web security (McKnight, Choudhury, and Kacmar, 2000; Pajo and Wallace, 2001). In order to make travel arrangements, the user needs to be web 'savvy'. Lack of knowledge, inexperience and perceived self ineptitude in usage of the internet constitutes a critical barrier (Constantinides, 2004; Ranganathan and Ganapathy, 2002)). However, as technologies and the web travel market mature, travel customers are likely to attain a higher level of comfort with web usage, thereby representing the dissemination component consistent with TAM as earlier discussed.

Adoption of innovations

There has appeared a sizeable body of literature on adoption of innovations, e.g. innovative technologies, administrative methods, business strategies, new products and services etc (Raymond, 2001, Bradley and Stewart, 2002; Cullen, 2001; El-Ansary, 2006; Vrechopoulos, Siomkos, and Doukidis, 2001; Cottam, Ensor and Band 2001). E-commerce and online shopping can be considered as an innovation, both in terms of technology and consumer behaviour. It also indicates how business can adopt this technology to promote their business. Research on the adoption of information technologies has been largely focused on the potential adopters, whereas in the field of e-commerce there are two groups of potential adopters – i.e. buyers and sellers. Online buyers must know how to use computers and the internet to access the cyber space, choose products/services and make payment. From the supply side, simply having a web site does not ensure the generation of more business. Thus, there is also a need for sellers to examine the demand side, that is, to gauge the extent to which tourists and potential tourists are using the internet and why.

The customer must also change their conception about shopping, since in cyber space their shopping experience is not limited within the visible space of a physical store. Rather, the customer is brought into unlimited virtual space and is faced with many more brands and product choices. To summarise, e-commerce is a complicated innovation that combines new technologies and new behavioural patterns.

The Proposed Study

A focus of internet research has been in determining the demographics of users (Vincent, 2003). Business-to-consumer (B2C) e-commerce is the activity in which consumers get information and purchase products using the internet (Olson and Olson, 2000). The potential benefits of ecommerce have been widely touted (e.g., Gefen et al., 2003). However, for these information technology-enabled benefits to materialize, consumers must first adopt online activities, such as getting information and purchasing products from commercial websites. B2C e-commerce adoption – the consumer's engagement in online exchange relationships with Web vendors – goes beyond the realm of traditional marketing and must thus be understood from the view point that online consumers are simultaneously using two streams of IT – the computer and the internet (Taylor and Todd, 1995). E-commerce adoption is an instance and use within a setting that combines technology adoption and marketing

elements, and thus it requires distinct theorization within the information systems literature. The literature has documented some problems that hinder the adoption of e-commerce (Ba and Pavlou, 2002; Koufaris, 2002; Rose et al., 1999). It seems that not all consumers are interested in shopping online. In addition, not all shoppers use the internet for the actual purchase of a product or service even though information from the web may have been an influencing factor in the final buying decision. In other words attitudinal and behavioural differences have been observed among buyers who are involved in such transactions. Choudhury et al., (2001) argue that consumers do not make a single, inclusive decision, but they rather consider two distinct stages: getting product information and then purchasing the product. Gefen and Straub (2000) also distinguish between the two behaviours by arguing that getting information is an activity intrinsic to the IT since the web system itself presents product information. Product purchasing, on the other hand, is an extrinsic to the IT since the web system primarily provides the means to achieve the purchase.

The primary objective of the present research is to offer some understanding of the factors affecting the attitudinal and behavioural differences in the adoption of internet and e-commerce by tourists to New Zealand. It will look at the internet usage differences among travellers of different countries or regions to New Zealand and its affect on the adoption of e-commerce, especially as relevant to tourism, within the context of New Zealand. As will be discussed later, this study was based on the theory of the Diffusion and Technology Acceptance Model. The research builds on Rogers' (1983, 1995) seminal work on diffusion of innovations. The study investigates those individual characteristics that can be associated with the consumers' intention to undertake online shopping behaviour. It also looks at profiling the respondents by categories as discussed by Rogers (1995).

The primary research questions are:

1. What differences in demographic-socio economic characteristics exist between internet users and internet non-users?
2. What differences in travel related characteristics (socio-demographic, number of years of Internet experience) exist between internet users and internet non-users?
3. Which characteristics among demographic/socio-economic characteristics and travel related characteristics and internet related characteristics are most effective in differentiating the internet users and internet non-users?
4. How does use diffusion affect the adoption of internet for travel planning and purchase of travel goods and services?

These are explained later in more detail in the chapter on 'Hypothesis Building and Methodology'. Several streams of research have formed the basis for the current study. Since issues regarding adoption of internet are being studied at differing levels, the study draws on research in the fields of management information systems, tourism, marketing, consumer behaviour and strategic management. Understanding how travellers behave is of critical importance to travel marketers in formulating appropriate marketing strategies that fully exploit the developing potential of this new medium.

Organisation of the thesis

Chapter 1 presents an introduction to the subject of study and details the components of the study in terms of internet tourism marketing, e-commerce and the study itself. Chapter 2 extends the literature review by reference to the relevant theoretical perspectives on individual innovativeness and the adoption theories related to

technology and consumer behaviour. It discusses specific models, which are used as a foundation to build the theoretical framework that forms the basis of the study.

Chapter 3 presents the hypothesis and presents a theoretical framework about the factors affecting a potential customer's intention to adopt the internet to search and purchase travel related resources. In the following chapter on 'Research Method', the theoretical models are discussed in detail. Included in this chapter is the sampling procedure employed and the instrumentation and scaling used are also presented.

Subsequent chapter details the analysis of data collected. The analysis is broken down into smaller sections which include the basic demographic sample data and some descriptive statistics. Then factor analysis is presented before cluster analyses are detailed. In the next chapter an analysis based on structured equation modelling is presented and discussed.

Finally, the conclusions are presented before detailing the conceptual and management implications of the study and the limitations of the survey are noted. Thus a final few paragraphs contain recommendations for those who may wish to undertake future, similar studies.

CHAPTER 2: Literature Review

Introduction

The purpose of a literature review is to document information of what has been published, create awareness, understanding, and appreciation for the work that has preceded the current study. It expresses the present state of knowledge as it pertains to a given topic. The existing bodies of knowledge help to shed light on the problem at hand, giving valuable insight on how best to study it and what some of the limitations might be. They serve as the theoretical and practical foundation and pivot point for learning, growing, and developing a deeper understanding and knowledge base. In short, the literature review informs the research design and helps assess the implications of any findings.

The theoretical underpinnings and empirical research on tourism span multiple disciplines. Therefore, the study of information technology (IT) as applied to tourism requires the study of several bodies of literature. The present study draws upon many works, including those found in marketing, psychology, consumer behaviour, hospitality, and information technology. Its principal focus is on the internet and its diffusion in purchasing tourism products/services. It also looks at developing a model that would describe the 'Use Diffusion of Internet' in tourism applications.

The World Wide Web's capability to mix text, pictures, sound and video has made the internet even more popular when combined with increasingly faster and more secure means of access. These attributes and its rapid growth have attracted a great deal of interest amongst both academicians and business practitioners. The advent of web technologies and electronic commerce has revolutionized the competitive business

environment. It is also generally argued that web technologies constitute a significant departure from traditional information technology (Moon and Kim, 2001; Pavlou, 2003).

James H. Clark, co-founder and chairman of Netscape said: "The internet is the biggest thing that has happened in the telecommunication field since the telephone. It is going to become as fundamental to the operations of business as having a telephone". The most impressive phenomenon in this techno-economic paradigm shift is electronic commerce (Butler and Peppard, 1998).

The potential of using the internet for marketing activities is derived from the fact that information can be stored, indexed, retrieved, restructured and easily redistributed automatically. The tourism industry is affected by this technological revolution and tourism destinations and Destination Marketing Organizations (DMO) increasingly need to adopt innovative methods to enhance their competitiveness. In order to satisfy tourism demand and survive in the long term there is no choice but to incorporate technology and enhance interactivity with the marketplace (Buhalis, 1998). Web sites are constantly being made more interactive (Gretzel, Yuan, and Fesenmaier, 2000). Tourism web sites have moved away from being just information broadcasters. They have started engaging the customers' interest and participation by improving the web content. The web sites' content influences the customers' image of the destination and can improve the experience when the websites become interactive (Gretzel, Yuan and Fesenmaier, 2000).

Despite the internet being available for almost a decade, Lilly (2003) reaffirms that accessibility remains an issue with regard to websites. The concepts of accessibility and usability are defined by Chadwick (2001) as follows:

> ‘Usability’ refers to how easy the web site is for everyone to use, and incorporates design layout patterns that may be ‘learned’ by users who then may explore the site and derive value from its contents.

As the primary focus is placed on web site accessibility, there is also a need address the issue of site usability, which seeks to harness the functionality of the sites to provide a time-efficient and effective delivery mechanism for online information. The close relationship between accessibility and usability, while distinct entities are, according to Webdale (2003), interlinked and thus cannot be viewed, or applied in isolation. Rzepka (2003) sums up the interplay between usability and accessibility, suggesting that sites that are ‘accessible’ may not necessarily be ‘usable’ in terms of ease of navigation and intuitive layout for both disabled and non-disabled people. Tractinsky, Katz & Ikar (2000) claimed that what is beautiful is usable. Schenkman & Jönsson (2000) studied aesthetics and preferences of web pages. Van der Heijden (2003) investigated the influence of perceived visual attractiveness on the perceived usefulness and ease of use concerning an internet portal. The importance of aesthetic aspects for user satisfaction with websites was demonstrated by Lindgaard & Dudek (2003) Lavie & Tractinsky (2004) found two aesthetic dimensions to be relevant in the website context: classical vs. expressive aesthetics. The classical aesthetics dimension pertains to aesthetic notions that presided from antiquity until the 18th century. They emphasize orderly and clear design and are closely related to many of the design rules advocated by usability experts. The expressive aesthetics dimension is manifested by the designers’ creativity and originality and by the ability to break design conventions.

On the issue of web site usability, Peter (2002) suggests that while this term primarily describes the ability of users to navigate through the site easily and quickly, there exist more subtle components of the overall experience that also play an important role in enriching the usability process. These include appeals to the affective through the nature and ease of links, and such appeals are important in establishing the cognitive to be derived from cognitive and emotive effects.

The term ‘user experience’ can be used as an umbrella term to summarize all the relevant aspects of interaction from the user’s perspective. Norman (2002) describes user experience as encompassing all aspects of users’ interaction with a product. Some approaches used the term user experience explicitly. Approaches based on Csikszentmihalyi's flow theory (1990), which became especially popular in the context of analyzing internet use (Novak, Hoffman & Yung, 2000), suggest that individuals will experience a positive psychological state (flow) as long as the challenge an activity poses is met by the individuals' skills. McCarthy & Wright (2004) took another point of view based on a pragmatist approach to experience arguing that the test is the value of the outcome being greater than the cost of the input.

One study examined the role of subjectively perceived instrumental and non-instrumental quality dimensions of websites in forming an *intention to use* a website as a predictor of behavioural consequences (Mahlke, 2002; 2005). Four experience dimensions, namely *perceived usefulness, ease of use; hedonic quality* and *visual attractiveness* representing aspects of the cognitive part of user experience were investigated in the domain of websites. Van der Heijden (2003) considered the influence of perceived visual attractiveness in a website context. This facilitates easy

movement around the web site, and serves to ‘imprint’ the navigation structure onto the user, assisting them to easily navigate the site during subsequent visits.

Understanding individual acceptance of internet

For any e-commerce web site to be successful it has to have visitors who conduct some business related transactions. Thus, it is important that individuals recognize the importance and accept the usage of web sites for purchases. With consumers being able to switch websites at the push of a mouse button, they have a wider choice between competing destinations and yet can still maintain anonymity from the supplier unless the supplier specifically engages in data mining and a search for site users. Anonymity in part rests: a) on the cost of finding the individual and b) current software technology costs – which might come down in future. In a social context, the web offers privacy, in the sense that there is no one around watching you shop and watching you physically conduct the transaction, except those who are looking to hack into others computers, and enables a 24x7 option for the consumer. So sitting in the comfort of their home, consumers have choice at their fingertips (Vijayasarthy and Jones, 2000). With a changing business culture, competition can lead business to cut costs and the internet is one option, which permits costs to be reduced dramatically (Kaufman-Scarborough and Lindquist, 2002), e.g. by relocating stocks to low cost warehousing sites. Also changing consumer lifestyles that might include less time to browse products in shops potentially enables the internet to play an important role in purchase behaviour. Thus individuals are increasingly accepting the internet as a part of their daily life and learning to use it for shopping. With technology improving everyday, the internet not only becomes safe and secure, it also offers more options in terms of ‘sound and feel’ for a product.

The issue of individual acceptance of IT has been researched from multiple theoretical perspectives using a wide range of constructs and definitions. Singh, Fassott, Chao and Hoffman (2006) studied the international consumers' acceptance and use of multinational company websites designed specifically for their country. A more detailed discussion is provided later in this thesis. The key dependent variable examined in the research literature is individual acceptance of information technology, which has been conceptualized and measured in several different ways. For instance, one definition of acceptance treats it as the act of adopting the information technology, that is, the initial decision to use it or not. Other work adopts richer and more complex definitions of acceptance, approaching it as a construct that can span several meanings. Although not directly shown, but implied, is a relationship between individual acceptance of an IT and significant individual-level outcomes such as enhanced productivity and user satisfaction.

Previous research and observations suggest that individuals do not adopt an innovation at the same time (Rogers, 1995). In the context current at the outset of this research, the internet as a sole source of information and a place to purchase could be considered as an 'innovation'. The emergent nature of internet based selling is the underlying reason for this assumption (Agarwal and Prasad, 1998). Customers show different attitudes and purchasing intentions towards e-commerce (Katz and Aspden, 1997; Lohse, Bellman, and Johnson 1999). Thus, marketers using the internet as a medium have to identify the likely adopters of e-commerce – both specifically and in general.

Research about information and communication technology (ICT) can be grouped under three major headings – diffusion approach, an adoption approach, or a

domestication approach. DIFFUSION APPROACH researchers describe the adoption process as an S-Shaped function of time that is used to categorize adopters of different kinds (Mahajan, Muller and Bass, 1990). ADOPTION researchers describe and explain the adoption decision of individuals by applying cognitive and social theories of decision-making.

DOMESTICATION researchers study the adoption and use of technology in everyday life (Silverstone and Hirsch, 1992). Telephones (Fischer, 1988) and television usage patterns (Silverstone and Hadon, 1996) are some examples of such an approach.

Within these models an underlying theme is that attitudes and their relationships to behaviour matter, and models used by researchers to explore these issues include

1. The theory of Reasoned Action (TRA) proposed by Fishbein and Ajzen (1975)
2. The Theory of Planned Behaviour (TPB) proposed by Ajzen (1985)
3. Technology Acceptance Model (TAM) proposed by Davis (1989)

Each of these approaches is discussed in detail later in this chapter.

Innovation adoption research has its origins in a number of disciplines ranging from sociology to economics to marketing to information technology (Gatignon and Robertson, 1995; Rogers, 1976). Rogers (1995) noted that it is very difficult for a new idea to be adopted despite its obvious advantages. It may take some time for an innovation to spread and be accepted within a social system. Here innovation adoption theory is concerned with the issue of speeding up the rate of adoption. In the field of marketing, there are many studies that increase our understanding of consumer innovativeness (Foxall, 1988; Hirschman, 1980; Midgley and Dowling, 1978; Venkatraman and Price, 1990). All these studies have a common theme, which

is to identify factors that distinguish innovative individuals or explain how technology as an innovation is adopted.

Two or more areas of research may be combined when trying to model end-user adoption. The internet is a service that is made available using information and communication technology. Thus theories of adoption of ICT and ICT based services are relevant when trying to understand the adoption of the internet. Second, the adoption and use of internet services have been studied in sociology as a social phenomenon. Hence, in the following pages, traditional theories and models of ICT adoption and acceptance are presented. This review includes the innovation adoption theory proposed by Rogers at various times. Finally the perspectives of innovation adoption theory are combined with the ICT models of individual end-user adoption that have been modified and applied specifically to the internet.

Technology diffusion, adoption and acceptance theory:

At an aggregate level, when adoption is studied, the way innovations are communicated within groups is considered more important than the individual level decision to adopt innovation. Aggregate level studies are concerned with how different groups adopt innovation and what characterizes these groups. However, individual level studies model individuals' decision processes. Some adoption models look at the adoption process as a rational decision process, while others see it as a process controlled by both individual cognition and external norms and behavioural constraints

The classic diffusion study typically contrasts the technology requirements of different user categories to describe the adoption process. In marketing, according to the Bass Model (Mahajan, Muller and Bass, 1990) the focus is on how information is

communicated in media and interpersonally. It also looks at how the two mechanisms of communication result in the S-shaped adoption rate observed in similar studies of innovation diffusion. Rogers (1995) adoption process description goes beyond aggregation and tries to explain the adoption by characteristics of the technology being adopted. Rogers (1995) also focuses on innovation, the social system and communication channels. Regarding the innovation being adopted, he mentions relative advantage, compatibility, complexity, and trial ability as the most important characteristics of technology that determine the rate of innovation adoption.

Individual level theories and models

While some of the concepts used by Rogers (1995) may be interpreted at the individual level (Ruyter et. al, 2001), the theories mentioned earlier have been used to explain adoption of technology in larger groups of individuals. Individual and group level adoption has thus been studied applying various cognitive and social theories (Narvekar and Jain, 2006; Singh, 2006).

The technology acceptance model (TAM) (Davis 1989) focuses on the attitudinal explanation of intention to use a specific technology or service. The TAM, which was derived from Theory of Reasoned Action (TRA), has been the starting point for research wanting to predict end-user information technology acceptance. TAM basically asserts that individual perceptual constructs predict user acceptance or usage of a technology (Benamati and Rajkumar, 2002; Devaraj and Kohli, 2002). TAM essentially hypothesizes that a user's attitude toward a technology is determined by their perception of usefulness and ease of use of that technology and that this attitude influences their intention to use the technology.

The intention to use IT is influenced by many external variables. Perceived usefulness and ease of use are posited to mediate the effects of these external variables on attitude and hence the intention to use the technology. TAM also posits that perceived ease of use influences perceived usefulness, because the easier something is to use, the more useful it is perceived to be.

TAM's concepts can be applied quite easily to the internet travel shopper, since it is important that the individual be considered both a customer and a computer user. Internet travel web sites are a relatively new, at the time study was started, that leverages both the potential customer's skill at information gathering as well as their willingness to share informational exchanges both ways. When a potential customer visits an e-travel site, it is important that the web site not represent a technical as well as a trust barrier to the customer. Many of the successful web sites have very easy to use tool bars and clear instructions on how to use their service. Technological efficiency and ease of use do not substitute for trust. It is important for a company to place a statement of privacy and security within easy access to help establish a sense of trust. It is especially important for initially developed e-travel web sites to be perceived as easy to use. If a consumer visits a site for the first time, he/she must be able to ascertain the web site's potential range of services to satisfy a particular need in the shortest time possible (Webdale, 2003). This transaction should occur without the disruption of non-focused pop-ups and banner advertising.

The TAM has also been revised, adapted and extended both by its originator and others (Venkatesh and Davis 1996). These and other adaptations have explored TAM's belief and issues of social influence. Figure 1 illustrates the theoretical constructs proposed in TAM by Davis (1989).

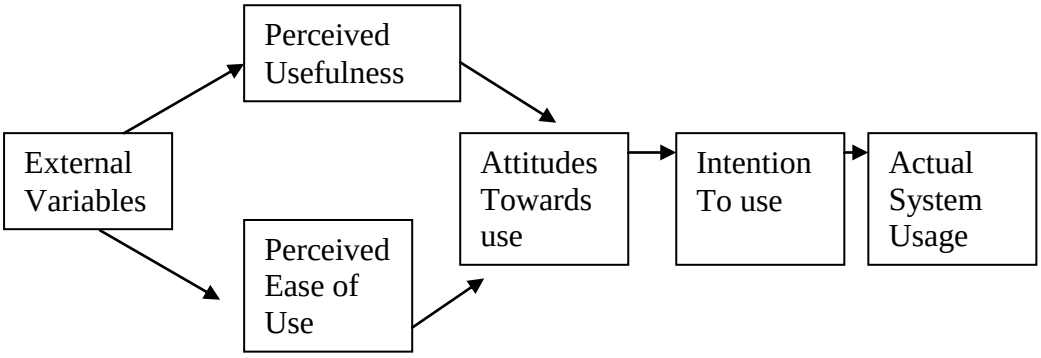


Figure 1: Technology Acceptance Model

TAM and TRA are similar in that both postulate that attitude and behavioural intention would mediate the effects of external variables on the individuals' actual behaviour. The TAM introduces five concepts – perceived usefulness, perceived ease of use, attitude towards use, intention to use and actual use. The TAM is different from TRA because it transforms generally defined terms about belief into two specific constructs – perceived usefulness and perceived ease of use.

Perceived usefulness refers to the degree to which a person believes that using a particular system would enhance their job performance' (Davis 1989). The nature of this construct as a subjective judgment is very similar to Rogers' definition of innovation. It also appears to be a counterpart in the Information System (IS) context of the construct 'belief in the consequence of the behaviour' in the general TRA model.

Perceived ease of use is defined as the degree to which the end user expects the technology (internet in our case) to be free of effort. Since there is some skill and knowledge involved in using the internet to search for information, once accepted, ease of use would be a significant concern of prospective users. Perceived ease of use

is introduced as a context specific construct to capture the cognitive determinant of technology acceptance. According to TRA, salient beliefs are elicited for each new context. Perceived ease of use has shown significant effect on intention to use while attitude partially mediated the effects of beliefs on intention.

Many researchers have tested TAM since its introduction (Moon and Kim, 2001; Van der Heijden, 2003; Pavlou, 2003; Gefen, Karahanna and Straub, 2003). Davis et al (1989) found in a longitudinal study that intention to use a word processing system could precisely predict later use of the system. In another example, a study by Jung and Butler (2000) found that useful information and user friendliness was among the most important variables for successful web site design in the tourism industry. In another replication of Davis' original study, Adams et al (1992) conducted two empirical studies to test for construct validity of perceived usefulness and ease of use. They found the measurement scales for the two constructs valid and reliable. The original TAM emphasizes the cognitive determinants of attitude and intention. Several researchers explain the attitudes and behaviours of information system users by use of the TAM model (e.g. Davis, 1989, Jung and Butler, 2000).

TAM initially focused on system usage in the workplace, but recently, there has been some research that has employed the TAM to understand web site use (Moon & Kim, 2001). The model has also been applied to explain individual's attitudes to using web sites (Lederer et al, 2000; Lin and Lu, 2000). Some of the studies have included ease of understanding and ease of finding quality information (Lederer et al, 2000). The e-TAM model developed by Van der Heijden, to explain web site revisits has added the construct of perceived relative usefulness and relative enjoyment.

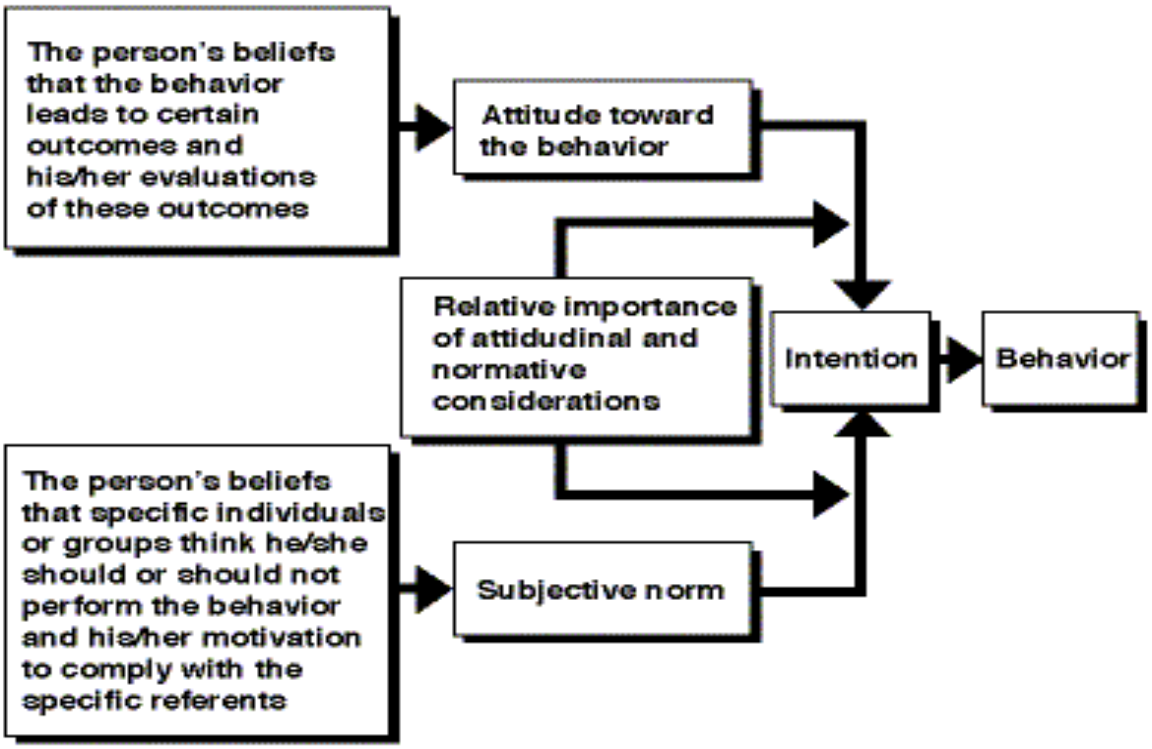
Perceived enjoyment has been added as an affective determinant by further modifying the original model (Igbaria, Parasuraman and Baroudi, 1996; Teo, Lim and Lai, 1999). Overall, evidence was found for both cognitive and affective determinants of technology acceptance. More recent extensions to TAM model and its possible effect on this study are noted in the final discussion. Since many of these studies were published long after this study commenced, the discussion has been included as extension in the final conclusions section.

Theory of reasoned action (TRA)

In many ways, TAM may be seen as a special case of the theory of reasoned action (Fishbein and Ajzen, 1975). Thus, TRA is a more general theory than TAM. It is used to explain behaviour after the adoption of technology. When applied to the explanation of use or adoption behaviour, the TRA model includes four general concepts – behavioural attitude, subjective norm, intention to use and actual use. Thus, TAM is a special case of TRA suggesting two determinants of behavioural attitudes and no relevance being attributed to the subjective, at least in the original formulation (Taylor and Todd, 1995).

In general, TRA does not propose specific determinants of behavioural attitudes. The inclusion of a subjective norm, however, represents an important addition when compared to TAM. In TRA, the subjective norm is composed of the user's evaluation of the object and then the perception of how others think they should behave, and their motivation to comply with the expectations of these referents (Fishbein and Ajzen, 1975).

Figure 2: Theory of Reasoned Action



Source: Ajzen, I., and Fishbein, M., (1980), '*Understanding attitudes and predicting social behaviour*' New Jersey: Prentice-Hall, Inc.

TRA is a widely studied model from social psychology, which is concerned with the determinants of consciously intended behaviour (Davis et al., 1989). An essential assumption underlying TRA is that human beings are usually rational and make systematic use of information available to them (Igbaria, Livari & Maragah, 1995). The most important argument of TRA is that a person's performance of a specified behaviour is determined by their behavioural intention to perform the behaviour. This assumption may have legitimacy where there are high degrees of knowledge – although the subject may allocate different weights or values to features/variables in the system. Arguably, a system can be logical where lower degrees of knowledge exist and decision making is based on expected/perceived attributes – which expectations may not be present. In that sense a heuristic system incorporating learning feedback loops may be established – but this is less clear and perhaps is an area where fuzzy modeling might apply. According to Ajzen and Fishbein (Ajzen and

Fishbein, 1980; Fishbein and Ajzen, 1975) behavioural intention is in turn determined by the individuals' attitude and subjective norm concerning the behaviour.

Attitude is defined as an individual's personal convictions and feelings, both positive and negative, towards the behaviour. However, the subjective norm includes the individual's perception of how people, who are important to them, think of the behaviour – otherwise termed as peer pressure. TRA advocates that attitude would be influenced by the individual's belief in the consequence of the behaviour and their evaluation of that consequence. Additionally, the inclusion of a further subjective norm is determined by the individual's normative belief about others; that is the individual's perceptions of the expectations of those important referent people in their social group and their motivation to comply with this expectation. It has been suggested that an individual is more likely to comply with the referent's expectation when their goals are congruent with the goals of the referent group.

TRA is a general model designed to explain virtually any human behaviour. The element of simplicity is derived from the model's assertions that all other sources of behaviour – grouped under the one concept, external variables – are mediated by attitude and the subjective norm. This theory has also rendered it a useful model to explain human behaviour in different domains, particularly in consumer behaviour (Sheppard, Hartwick, and Warshaw, 1989) and technology acceptance (Agarwal and Prasad, 2000; Hu, Chau, Sheng and Tam, 1999; Venkatesh, 2000). According to TRA, a behavioural intention measure will "predict the performance of any voluntary act, unless intent changes prior to performance or unless the intention measure does not correspond to the behavioural criterion in terms of action, target, context, time frame and/or specificity" (Sheppard et al., 1989, p 325). This statement appears to set

the boundary conditions of TRA. However, researchers in various areas have frequently applied TRA under conditions deviant from the assumed boundaries. Sheppard et al.'s (1989) analysis of TRA-driven empirical studies in marketing literature showed strong evidence for the predictive utility of TRA even when it was utilized to investigate situations and activities that did not fall within the boundary conditions originally specified for the model. Outside consumer behaviour research, TRA has been linked to studies explaining why individuals would or would not use an advanced technology (e.g. Taylor and Todd, 1995).

Theory of planned behaviour (TPB)

The theory of planned behaviour was proposed as an extension of the theory of reasoned action (TRA) to account for the conditions where individuals do not have complete control over their behaviour (Ajzen,1991). However, the theory also proposed more explicit formulations of determinants of the behavioural attitude and subjective norm of the TRA model. According to the theory, human behaviour is guided by three kinds of considerations: beliefs about the likely outcomes of a given behaviour and the evaluations of these outcomes, beliefs about normative expectations of others and motivation to comply with these expectations, and beliefs about the presence of factors that may facilitate or impede performance of the behaviour.

The model, in its original form, has been applied to the explanation of several types of behaviour, such as the adoption of canes among the elderly (Maisel, 2005) and condoms among young people (Larsson, 2004). When applied to the adoption of ICT systems or services, the models contain five concepts. It includes behavioural attitudes, subjective norm, intention to use and actual use. The components of

behavioural attitudes and subjective norm are the same in TPB and TRA. In addition, the model includes behavioural control as a perceived construct. Perceived behavioural control reflects the internal and external constraints on behaviour, and is directly related to both behavioural intention to use and actual use. Consequently, actual use is a composite of a weighted function to use and perceived behavioural control (Taylor and Todd, 1995).

TPB has been applied to explain the adoption of such diverse systems as spreadsheets (Mathieson, 1991), computer resource centres (Taylor and Todd, 1995) and electronic commerce services (Bhattacherjee, 2000). The role of the subjective norm in TPB when compared to TAM is somewhat unclear. Davis et al. (1989) and Mathieson (1991) found no support for a direct relationship between the subjective norm and intention to use. The lack of findings has been attributed to little social pressure to use the systems studied by both Davis et al (1989) and Mathieson (1991). Later, a significant relationship has been found both in studies in organizational (Moore and Benbasat, 1991) and electronic commerce settings (Bhattacherjee, 2000). In another recent study, Venkatesh and Davis (2000) also found strong support for a direct link between the subjective norm and intention to use in a longitudinal study pooling results across four different studies and settings.

The inclusion of behaviour control in the TPB model represents a valuable addition to the explanatory power of TPB when compared to TAM. Both Mathieson (1991) and Taylor and Todd (1995) found that the addition of behavioural control enabled their TPB model explain more variance in intention to use than the TAM model.

In TPB behavioural control encompasses two components. The first is facilitating conditions representing the resources required to use a specific system. The second

component is self-efficacy; that is “an individual’s self-confidence in their ability to perform behaviour” (Taylor and Todd, 1995; p 150). TPB and TRA have both been criticized for not suggesting operational components or determinants of behavioural attitudes, subjective norm and to some extent behavioural control. When compared to TAM, the lack of operational components or determinants of behavioural attitudes is particularly obvious.

Many researchers have suggested specific components or determinants of attitudinal concepts of the TPB model. For example, Bhattacherjee (2000) suggests incorporating the TAM model in TPB with perceived usefulness and user friendliness as the determinants of attitudes towards use. He also suggests the subjective norm may be determined by external and interpersonal influence, and that the two components of perceived behavioural control may be treated as determinants of behavioural control. Taylor and Todd (1995) suggest what they term as a decomposed TPB, which also includes the TAM model in the attitudinal part of the TPB. However, they also include compatibility as a third determinant of attitude towards use, mainly inspired by the diffusion model of Rogers (1995). The determinants of the subjective norm are believed to be context dependent, and in the case of Taylor and Todd (1995), peer influence and a superior’s influence are suggested. In non-organizational contexts, Bhattacherjee (2000) determinants generally seem more relevant to the concerns of internet adoption. Finally, the decomposed TPB suggests that self-efficacy resource-facilitating conditions are the most relevant determinants of behavioural control in a choice of models. While the decomposed TPB adds complexity when compared to TAM, several studies have shown that the increased complexity of the TPB model may be a small price to pay for its explanatory power.

Innovation adoption theory

The **Diffusion of Innovation** is proposed by Rogers (1995) and widely tested and adapted in many areas, including the IS field. According to Rogers (1995, p 11) "an innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption.". "Diffusion is the process by which an innovation is communicated through certain channels over time amongst the members of a social system" (Rogers, 1995, p 26). The newness means that some degree of uncertainty is involved in diffusion. The innovation-decision process of an individual (or other decision making unit) passes from first knowledge, to forming an attitude, to a decision to adopt or reject, to implementation and use, and to confirmation of this decision. Adoption is "a decision to make full use of an innovation as the best course of action available" (Rogers, 1995, p 22). The theory suggests the perceived innovation characteristics are one important explanation of the rate of adoption of innovations. The innovation characteristics are relative advantage, compatibility, complexity, trialability, and observability.

Rogers and his colleagues' work (Rogers, 1976, 1983, 1995; Rogers & Shoemaker, 1971) have been influential in the area of innovation adoption. Rogers (1995) notes that it is often very difficult to get a new idea adopted even when it has obvious advantages. It may take a long period for an innovation to spread throughout the social system and under this presumption the innovation adoption theory is mainly concerned with the issue of speeding up the rate of adoption of an innovation. On the demand side, explanatory variables are not identified at the individual adopter level. However, diffusion theory focuses on describing aggregates of individual users and on categorizing groups of adopters. Rogers provides a powerful framework about the factors affecting innovation adoption and diffusion. Essentially, his theory is focused

on the macro level analysis of the adoption patterns and diffusion processes of the technological innovation within a social system. Diffusion theory also applies more traditional demographic and psychographic variables to characterize aggregates of individual adopters.

For example, ‘early adopters’ are typically found among educated and younger people (Dickerson and Gentry, 1983). Specifically, ‘innovation adopters’ are classified into five categories based on their innovativeness: ‘innovators’, ‘early adopters’, ‘early majority’, ‘late majority’ and ‘laggards’. Rogers provides a vivid description of ‘innovators’ and ‘early innovation adopters’. An ideal innovator is pictured as a venturous individual who often keeps communication and friendships with a clique of innovators. Typically an innovator owns substantial financial resources and is able to understand and apply complex technological knowledge. They should have an ability to handle uncertainty that is inherent in innovation adoption. Their role in the whole innovation diffusion process cannot be over-estimated because it is they who introduce an innovation into a social system.

An ‘early adopter’ is more integrated into the social system, when compared to the ‘innovator’. In most systems, ‘early adopters’ assume the role of opinion leaders who communicate their experience with the innovation with other members of the social system. They act as information sources for potential adopters. The ‘early adopters’ reduce the uncertainty about an innovation by adopting and evaluating it and conveying this evaluation.

The Bass Model (Mahajan et al., 1990), or variants of it, may be considered as the communication channel model component of the theory of diffusion proposed by Rogers (1995), even though some marketing researchers may not agree with such a

conclusion. The above generalizations considered in the context of internet usage, provides a profile of innovative tourists using the internet and the possibility of other related innovations. However, the demarcation between ‘innovators’ and ‘early adopters’ may not be very clear, because the internet is not a specific technology useful to any specific system; rather it is a new way of consumption introduced to the whole tourist community.

When a new product or an innovative technology is introduced in the market, consumers learn about it, decide whether to buy it and whether to repeat purchasing it in the future. Adoption implies that consumers have accepted the innovation and innovations are diffused as individual consumers make their decisions to adopt them at different time intervals. As described by Vrechopoulos et al., (2001) a normal distribution develops which represents the diffusion process (see figure 3).

Indeed, it is the presence of early adopters who are opinion leaders who aid the spread of the service into an early majority market that is essential to the longer term financial success of the innovation. Given the current state of e-commerce the term ‘innovative consumers’ and ‘early adopters’ of online shopping are used interchangeably. This is amending the usual role classification – innovators in the Rogers’ classification are consumers, not generators of a service.

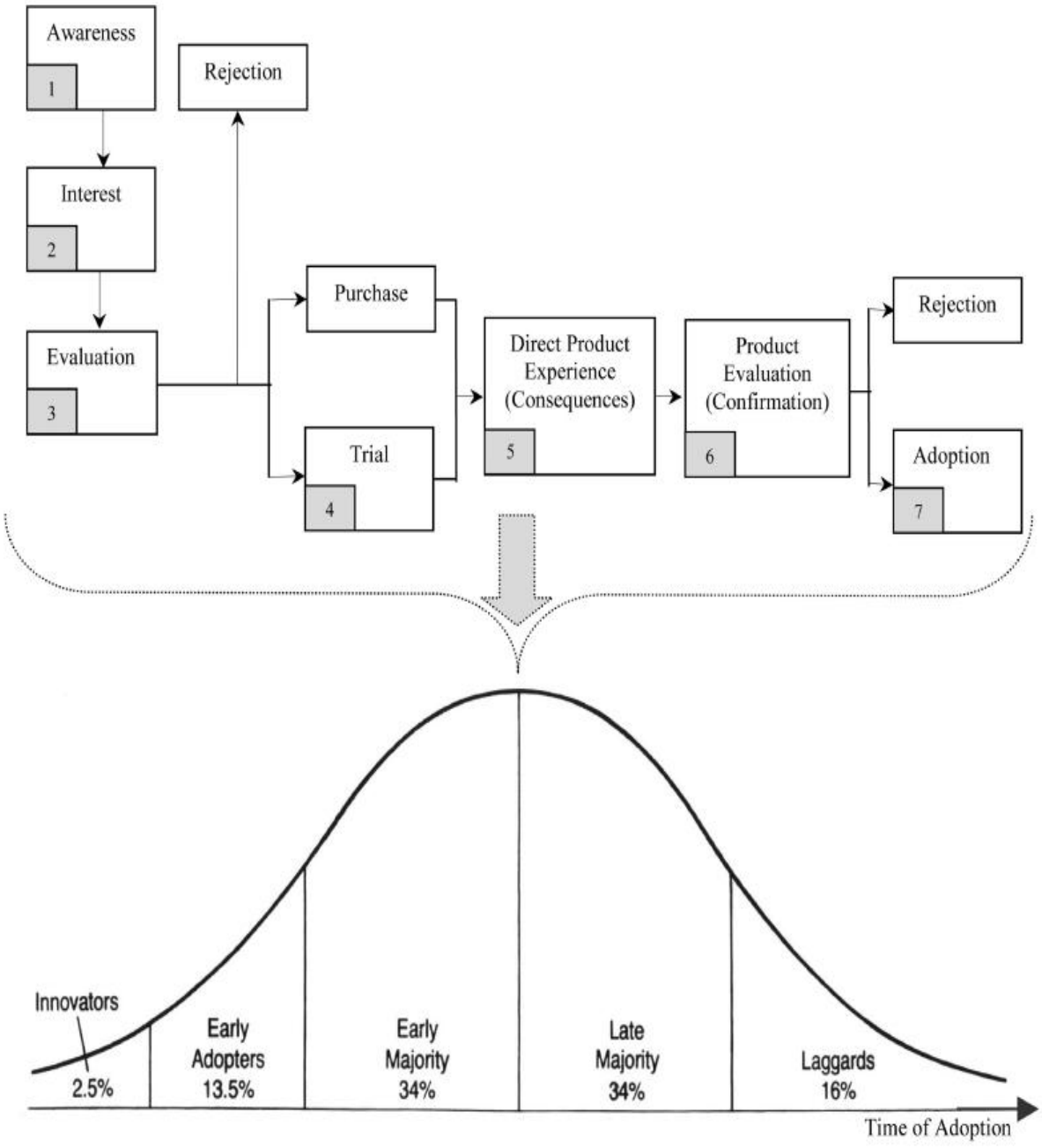


Figure 3: The consumer adoption decision and diffusion of innovation process (source: Vrechopoulos et al., 2001, pg 144)

However, for a dot COM to succeed large volumes of purchases are required for a product like books, CDs and presumably 'travel'.

Innovativeness is suggested to be the key individual character that distinguishes 'early adopters' and 'late innovation adopters'. Rogers defines innovativeness in terms of the degree to which a person is relatively early in adopting within a social system. In

a comprehensive review on variables related to innovativeness, Rogers classifies the antecedents of personal innovativeness into three categories; socio-economic status, personality values and communication behaviour. Rogers'(1995) innovation diffusion theory lends additional support by suggesting that users' personality differences can potentially influence how users form their intentions to perform behaviours. By exploring the technology adoption stages, Rogers (1005) revealed that (1) users with higher levels of personal innovativeness are more prone to have more favourable attitude toward new technologies; and (2) highly innovativeness are more willing to embrace new technologies into their daily routine by coping with the uncertainty of innovative technologies.

Socio-economic characteristics refer to demographic variables such as age, education, social status and occupation. However, it is interesting to note that early adopters are not very different from late adopters in age, but are different in education (Mintel Intelligence, 2001). Early adopters are people who have higher qualifications and are more literate than late adopters. Early adopters are also characterized by a higher social status and more wealth in studies of consumer durables. Arguably, this is not wholly true. For example the adoption of 'hip hop' was by a young urban 'deprived' group with, it is suspected, lower educational attainment than mainstream white youth. Unless you argue that being 'street wise' was akin to educational attainment within the reference group. The conventional view is understandable because it is usually risky and costly to adopt an innovation in its early stage and people in higher socio-economic status are more likely to afford to adopt an uncertain (technological) innovation.

Innovativeness is also associated with personality traits, and is a stable descriptor of individuals across situational considerations (Agarwal et al., 1998). An innovator possesses stronger ability to project their image into the role of another person. Early innovation adopters are not as dogmatic as late adopters. Also early adopters are found to be more open to change and better able to handle uncertainty and risk than late adopters. Overall, it has been noted that innovativeness is highly related to personality traits, which highlight an individual's tendency towards risk, uncertainty, change and new experience.

The last category of antecedents of innovativeness is communication. Communication is defined as "a process in which participants create and share information with one another in order to reach mutual understanding" (Rogers 1995; p 6). The concept of communication is particularly important in innovation diffusion theory because the message in the communication is about a new idea. The diffusion process is a process of information exchange between two parties through certain communication channels. Rogers (1995) discussed two types of communication channels; mass media, which included radio, television and newspapers, and interpersonal channels that involve face to face exchange between two or more individuals. Communication behaviour plays an important role in identifying innovators and early adopters. Early adopters have more social participation, maintain extensive interpersonal networks and have contact with people not only within the social system but outside it as well. Innovators and early adopters are active information seekers and possess more knowledge about innovation itself. Consequently they often become opinion leaders in the diffusion process.

To summarize, relative to the predispositions/needs of an individual, innovation is conceptualized as "an idea practice or object that is perceived as new by an individual" Rogers (1995). The implication is that innovation is a subjective judgment rather than objective feature, i.e. new to a 'late adopter' but old to a 'early adopter'. It would be appropriate to state that the internet as an innovation can be defined as perceived newness but, given its history there is an objective element as well: for example, prior to 1990 'few' had e-mail facilities, since it is a complicated system involving both technology and business practice.

Consumer innovativeness research

Innovativeness has received considerable attention among consumer researchers (e.g. Hirschman 1980, Midgley and Dowling 1978, Rogers 1983). There are two approaches to innovativeness. Joseph and Vyas (1984) focus on a cognitive style, 'global innovativeness', which incorporates an individual's intellectual, perceptual and attitudinal characteristics, arguing that this kind of innovativeness is an important predictor of the adoption of innovations.

Several individual differences could potentially affect how individuals respond to innovations. Personal innovativeness, as a construct that is important to the study of individual behaviour towards innovations, has had a long standing in innovation diffusion research (Rogers, 1993;1995) and the domain of marketing (Midgley and Dowling 1978).

It has been pointed out that using time of adoption study methods has several adverse methodological consequences, such as the inability to compare findings across studies and lack of metrics to assess the reliability and validity of the measure. A more crucial limitation of this measure, however, is that it does not allow for prediction and

subsequent management intervention: innovativeness is measured after the decision to adopt the innovation has already been made. In this context it is little else than an ex post descriptor of the behaviour. Thus attempts were made in the literature to explicate the construct of innovativeness more clearly and to begin to develop ways of measuring it directly.

Goldsmith and Hofacker (1991) developed the domain specific innovation scale as a Likert scale, arguing that it is a more useful predictor of the adoption of innovations by consumers. Innovativeness can also be thought of as a domain specific phenomenon, linked to broader innovative traits, but more predictive of actual behaviour in a specific product than is global innovativeness.

Citrin et al. (2000) adopted two measures of innovativeness to explain the consumers' adoption of internet shopping. Their findings indicate that internet usage and domain specific innovativeness have a direct influence on the adoption of internet shopping. They also report that domain specific innovativeness is a moderator of the relationship between internet usage and the adoption of the internet for shopping, but general innovativeness does not influence the use of internet for commerce. Like perceived risk, consumer innovativeness can be different according to cultural differences. Three dimensions of national culture have been identified, that can be related to consumer innovativeness; 'individualism', 'uncertainty avoidance' and 'masculinity'. Individualism and masculinity are positively related to consumer innovativeness whereas uncertainty avoidance is the opposite (Steenkamp 1999). Masculinity here is defined as stereotypical interests that include interest in new technologies and functionalism.

New product adoption and diffusion has also been an important topic in marketing and consumer behaviour literature. The concept of consumer innovativeness has attracted considerable attention. A basic argument is that innovative consumers are more likely to try new products / services, but identifying them becomes a topic for both innovation theorists and new product marketers.

Consumer innovativeness is thus central to the theory of diffusion of innovations (Midgley and Dowling, 1978). The two research streams of consumer innovativeness and innovation adoption/diffusion share a common interest. They both wish to find the characteristics of innovative individuals and predict behaviour. However, the approach is different. As Midgley and Dowling (1978, 1993) suggest, the innovation adoption theory proposed by Rogers (1983), focuses on adoption behaviour that is measured based on 'time of adoption', while the classification of adopter categories is post adoption. The profiles are analyzed after the diffusion has been completed. However, the consumer behaviour researchers emphasize the objective of theorizing innovativeness as a dispositional construct that can be used to predict the tendency to adopt future innovation. In the following pages, a few major studies are reviewed, and these have been chosen because they have been cross-referenced in much of the literature pertaining to this subject.

Hirschman (1980, 1984) discussed the construct of innovativeness together with two others, novelty seeking and consumer creativity. In the context of the current research with the internet as the framework, the two constructs of innovativeness and novelty seeking would be appropriate. Novelty seeking was the focus of Hirschman's study. The notion underlying this concept is that an individual is activated to seek out novel information through some internal drive or motivating force (Hirschman, 1980).

Novelty seeking can be divided into smaller constructs of a) inherent and b) actualized novelty seeking.

Hirschman states that the desire to seek out the new and different is conceptually indistinguishable from the willingness to adopt new products. However, she also argues that actualized novelty seeking is different from actualized innovativeness in that the former refers to the initiation of behaviour intended to acquire new information, whereas the latter refers to the actual acquisition of new information.

This has a major important implication in the innovation adoption process; inherent novelty seeking seems to be a cognitive process that precedes the behaviour to adopt the innovation. The description and examples provided by Hirschman for novelty seeking behaviour are cognitive in nature as opposed to the ideas advanced by Midgley and Dowling (1993) who interpreted innate innovativeness as a psychological tendency. Hirschman appeared to emphasize the nature of novelty seeking as a calculated and purposeful cognitive process, and suggested that novelty seeking serves two purposes. Also, consumers who are high in inherent novelty seeking would tend to enjoy using new technologies (Dabholkar and Bagozzi, 2002).

First, it serves as a means of self-preservation, which means that the consumer would intentionally seek information that may be not useful now but may help them solve future consumption problems. Second, a consumer seeking for novelty may improve their problem solving skills (Hirschman, 1980).

Thus, novelty seeking seems to be a reinterpretation of innovativeness. The difference being that innate innovativeness is defined as a personality trait whereas inherent novelty seeking is defined as a desire for seeking out novel information. Thus, it can

be inferred that both will influence innovative decision-making process (Roy and Ghose, 2006).

Foxall, Haskins and Bhate also discussed the issues of customer categorization and innovators behaviour in a series of empirical studies (Foxall and Haskins, 1986; Foxall, 1988, 1999; Foxall and Bhate, 1993). Foxall states that consumer innovators can be identified based on their cognitive style captured by the Kirton adoption-innovation theory (KAI). Cognitive style is defined as "an individual's manner of processing information mentally in decision making and problem solving, his or her preferred intellectual mode rather than cognitive level, ability or complexity" (Foxall & Bhate, 1991, p 185). According to Kirton's adoption-innovation theory, an individual's cognitive style can be captured by a continuum. At one extreme of this continuum is the adopter whose problem solving is characterized by order, precision and concern for accuracy, conformity and discipline. At the other end, we have the innovator who tends to be more extrovert, less dogmatic, tolerant of ambiguity, radical, assertive, flexible and sensation seeking (Foxall and Bhate, 1991; Foxall & Goldsmith, 1988). The adaptive-innovative dimension of cognitive styles is measured by the KAI, which requires the respondent to assess the degree of ease or difficulty they will encounter in sustaining specified adaptive and innovative behaviours over long periods.

Foxall suggests that the KAI cognitive styles will have implications in conceptualizing and analyzing consumer's early adoption of new products. In his review of previous research, Foxall and Bhate, (1993) identified two separate approaches that explained consumer innovativeness. The personality-based approach has stressed "the almost automatic predisposition of some individual to favor

newness, to evince a relentless drive, external circumstances permitting, toward its acquisition" (Foxall and Bhate, 1993; p 35). The second, the cognitive approach, emphasizes "the highly involving nature of new product purchasing and the extended problem-solving sequence likely to precede choice" (Foxall and Bhate, 1993; p 35). In light of this, the cognitive approach focused on an individual's knowledge structure and information processing ability rather than their psychological tendency.

Based on these statements, it is easy to hypothesize that early adopters of a new product/service would be more likely to possess innovative cognitive styles. Foxall and his associate researchers have tested the relationship between KAI and consumer's purchasing behaviour in a number of empirical studies. They looked at new food brands, new healthy food products and software applications in home computing and organizational contexts. While the respondent's KAI score showed a positive relationship with purchasing behaviour, it was weak. Many authors have studies the psychographic composition of consumer innovators and some have recommended more research (Foxall and Bhate, 1993; Bagozzi and Foxall, 1996; Foxall and Szmigin, 1999; Im, Bayus, Mason, 2003).

Lastly, Midgley and Dowling (1993; p 611) define innovators as "those individuals who make adoption decisions independently of the opinions of other individuals" and non-innovators as "those who are influenced by the opinion of others". They argued that the innovation diffusion theory had its shortfall because innovativeness was defined in terms of adoption over time but measurements tended to the time of adoption and innovativeness was measured by the same criteria. In order to incorporate different constructs of innovativeness into a logical framework, they distinguished three types of innovativeness. The first was labelled specific

innovativeness for a single product; the second was for a group of products and last was innate innovativeness. The second type can be used to predict a consumer's purchasing intention for all men's clothing, as an example. They proposed that innate innovativeness should be positioned in a theoretical system as a trait construct and measured with a self-report scale. They also suggested that the relationship between innate innovativeness and overt adoption behaviour should be intervened by such variables as interpersonal communication, and interest in product category. This construct is very similar to Rogers' (1983) definition of innovativeness that emphasizes the actual behaviour of adopting innovation.

It is noted by Midgley and Dowling (1993) that communication experience, especially interpersonal communication, plays an important role in the definition and measure of innate innovativeness. In their original definition, they considered innovators as individuals who adopt new products without being influenced by other individuals' experience. This meant that no word-of-mouth communication has taken place between innovators and others before the former makes the decision to adopt an innovation. But in their later research, they introduced the concept of 'innovative communicators' instead of innovators based on empirical findings (Midgley and Dowling, 1993). The innovative communicators are those who are actively involved in communicating their experience to other members of the social system. Despite theoretical definition, it is difficult to clearly separate innovators from innovative communicator/early adopters.

In summary, while differences exist between Foxall's adaptor-innovator classification of individual's mind, and Midgley and Dowling's construct of innate innovativeness, both attribute importance to cognitive and affective components. Similarly

Hirschman's concept of novelty seeking taps both psychological and cognitive aspects. In short, any potential measure of visitor adoption of the internet requires measures that draw upon the cognitive, the affective and the behavioural.

CHAPTER 3: Hypothesis Building

Towards a schema of internet usage

As proposed by Rogers (1985), the diffusion of innovations concept is a means of engaging in behaviour science research, albeit originally with regard to technology changes in the field of agriculture. The word 'diffusion' has a science-fiction quality and evokes images of something new being spread over a vast area. According to Rogers (1995; p 27), "some authors restrict the term 'diffusion' to the spontaneous, unplanned spread of new ideas, and use the concept of 'dissemination' for diffusion that is directed and managed." In all cases where diffusion of an idea takes place, there is communication in one form or another. For example, a company that wants to communicate information about its products will most likely disseminate the information through various media to let potential buyers know that the product exists. The message will also give details of what the products can do what they do better than the current available competition and additionally provide price information.

The word 'diffusion' as used in the theory, can mean either or both the planned and unplanned 'spread of new ideas' (Rogers, 1995). In order for the process of diffusion to exist, information about the innovation must be communicated over a period of time among members of a social system.

In the case of the internet, there have been comparatively long periods of communication of its existence and its use. For example tourism, which has taken to the internet in the last decade, has steadily evolved usage patterns with increasing rapidity. Many of the users of the internet are knowledgeable about the fact that

information regarding destinations is available over the internet. Converting knowledge to use of the internet is arguably a question of being at ease when using the innovation. The internet is a complex product and the adoption decision and use decision are discreet. The consumer (or tourist) is looking for some general cues prior to purchase (Shih, 2004). In this case, we can surmise that the diffusion process continues even after the innovation has been adopted, and its use diffuses the innovation even more and in ways qualitatively different from the initial adoption (Sigala, 2004). Indeed, the product, 'internet', does not remain a constant as experiences of users are incorporated into the design of web pages and browsers to both simplify and make more effective the use of the product. Moving away slightly away from the adoption-diffusion, it is intended to study the types of users, their rate of use, their perceptions of choice and the importance they attribute to the net.

However, the simple question to be answered is "Who are buying online?" and it can be answered in many different ways. Many academic researchers and market research companies have provided profiles of internet users and hoped it would help business understand the internet market. But with the target customers being ever dynamic and increasing daily in numbers, it was difficult to identify and pin point them. Many previous surveys have found that only a relatively small number of internet users actually use this medium for purchasing a product. Customers are making purchase decisions based on the information gathered on the web, but not necessarily using the web as a means of purchase (Vijayasarthy and Jones, 2000). This implies that internet usage does not necessarily equate to online shopping. Secondly, the demographic profile of internet users is changing over time, which reduces the usefulness of the demographic based marketing. Late adopters have entered the market, and thus

policies aimed initially at early adopters become less effective. Meanwhile early adopters may move to new means of accessing the net, e.g. through cell phones.

Thus, a critical issue is to draw a picture of typical online consumers by viewing their characteristics from different perspectives. There is enough evidence in the literature to explain why and how individual consumers make their purchasing decisions in different shopping contexts. Many studies have revealed links between individual characteristics and adoption of innovative technologies. However, that same depth of understanding has not been achieved in the case of online shopping. Except for demographic factors, the effects of inherent characteristics remain largely unexplored in the context of visitors to New Zealand and their purchase of tourism products.

Building on relevant studies in consumer behaviour and innovation adoption, this thesis proposes a theoretical model with the simple purpose 'Who tend to become online consumers?' The theoretical model captures the antecedents of a potential online consumer's behavioural intention along several dimensions. The context of the study is that of tourist behaviours. Several reasons account for this. Tourism is a major user of the internet to disseminate information about places and activities. Tourism New Zealand has designated as a key market; 'interactive travellers', who are high users of the internet as well as being 'high yield' (Ministry of Tourism, New Zealand Government, 2001). Tourism promotion is oriented toward the promise of a given experience – an intangible product that fits the promise of cyber-reality, that is, it is and will be memorable and potentially intense and exciting. In addition there are practical advantages. Tourists are easily identified and accessible and, for the most part, being in an euphoric state in that they enjoy their holidays, are generally well pre-disposed to a request for information.

An online tourist here refers to a person who has an opportunity to access internet, is currently travelling and who intends to travel in the near future (12 months). Most internet marketers will be keen on converting these customers into active buyers. The current study is designed to profile such a person so that marketing strategies can be built to please and enrich their experience when they visit the web site.

Before detailing the specific hypotheses, it is necessary to contextualize the model within previous research. To begin with, online shopping of tourism products is emphasized as an innovation. Previous studies have defined innovations either as specific new products or services (as in marketing literature) or as specific information systems (in information technology acceptance literature). Based on the definition given by Rogers (1995) and Damanpour (1991), innovation can be anything perceived as new by the potential adopter. In the current study, it is suggested that e-commerce of tourism products and services by DMOs represent a new mode of consumption or a new behavioural pattern in the shopping context. To accept online shopping, an individual must rethink long held beliefs or, acquire habits not previously adopted. It would also require them to experience some cognitive changes and maybe even overcome psychological resistance to the idea of buying things over the internet by a click of a mouse. Thus online shopping (e-commerce) by definition is viewed as an innovation during the period prior to the collection of data in 2004.

The study has a focus; the potential consumer's intention to purchase tourism products/services online rather than through a bricks and mortar shop or travel agent. Intention to purchase online can be measured as one's subjective judgment of the likelihood that he or she would buy products or services over the internet. Behavioural

intention is regarded as the immediate determinant of overt behaviour in TRA and TAM.

Hill et al (1987) indicated that behavioural intentions significantly predict action. Sheppard et al (1989) found significant correlation between intention and action in a meta-analysis of 86 TRA driven marketing studies. In the Management Information System (MIS) literature, Jackson et al (1997) suggested that intentions are reasonable indicators of future system usage. In defending the use of behavioural intention in technology acceptance research, Agarwal and Prasad (1999) argued that in a cross-sectional study intentions are more appropriate than actual usage of technological systems because intentions can be cross-correlated with independent variables. It is thought not appropriate to measure actual usage in such research, since usage in a given current period is actually based on beliefs and attitudes derived from a previous time period.

The proposed theoretical model thus aims to explain how an individual's relatively stable personal characteristics would affect purchasing intentions. Since the focus of the study is a specific behaviour of 'shopping tourism products/services online', it is presumed that such a behavioural intention would not change unexpectedly and could be used to predict future purchasing behaviour, at least in the immediate short term given the rate of technological change. Further, behavioural intention is meaningful because the construct itself can offer an in-depth understanding of human responses to innovations.

It has to be noted that despite theoretical discussions by many researchers, the place of the construct "customer innovativeness" in the domain of consumer behaviour still seems uncertain. As has already been noted, Midgley and Dowling (1993) defined

innovativeness at three different levels of abstraction. They argued that only 'innate' innovativeness, which is a hypothetical construct describing the innovative tendency possessed by all individuals to varying degrees, can be used a priori to predict innovative behaviour.

However, they did not offer specific guidance on how to operationalize this construct except for suggesting that innate innovativeness could be seen as "a function of a number of dimensions of the human personality" (Midgley and Dowling, 1978; p 235). It has also been discussed that Foxall (1995) used the Kirton Adoption-Innovation (KAI) inventory to capture the construct of innovativeness that he defined as a cognitive style. KAI has shown to be an overarching concept with complex relationships with other trait characteristics. But it seems that the KAI score is too ambivalent a measure to reflect the weights of specific individual characteristics in influencing attitude towards specific innovations.

It is suggested that different types of innovations might trigger different psychological and cognitive processes on the part of the potential adopter. For example, an individual's attitude towards a skill demanding innovation (using the internet to search for specific tourism products/services) may be heavily influenced by one's knowledge and learning potential. By contrast, an individual's attitude toward a novel product (a new drink) may be a more subjective and affective response to the product. As for online shopping, an innovation combining knowledge requirement and novelty, it may be necessary to investigate the relationships between specific individual characteristics and attitudes, as well as behavioural intention. Chell et al. (1991) noted that entrepreneurship research has been hindered by disagreement on the meaning of the word 'entrepreneurship'. They suggested using trait terms, which describe natural

categories accessible to ordinary people. Taking into consideration the above, this study avoids using one single measure of innovativeness in the model proposed.

The characteristics of individuals are classified into three categories (Agarwal and Prasad, 1999) – demographic, cognitive and psychological. Based on the criterion suggested by Agarwal and Prasad (1999) the variables are selected so that they describe the psychological mechanisms and prior knowledge base that individuals would possess at the time of interaction with the new mode for shopping – online shopping. Many researchers from various disciplines (Foxall and Bhate, 1983; Dabholkar and Bagozzi, 2002; Roy and Ghose, 2006) have discussed the constructs of cognitive styles and psychological tendencies.

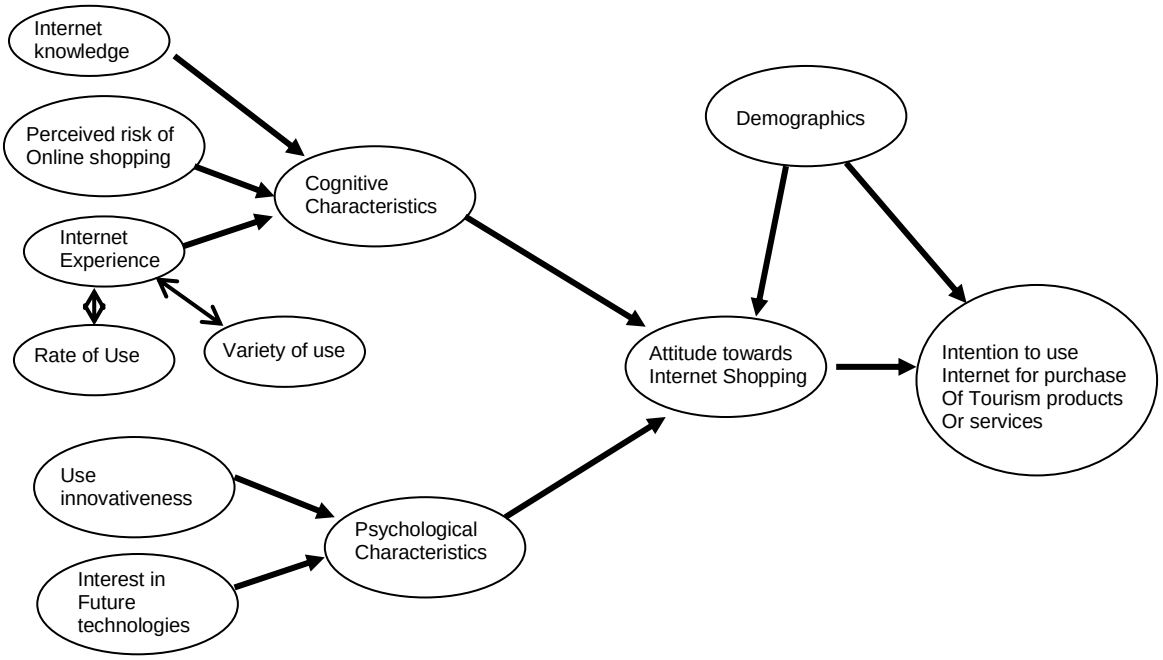
However, the three-category classification is used to emphasize different theoretical orientations attached to each category. Demographic characteristics refer to directly observable individual characteristics as age, gender, and education level. These reflect the socio-economic status of a person. Cognitive characteristics describe a person's knowledge and information seeking style. They can be associated with a person's learning process and previous experience. Lastly, the psychological characteristics capture the person's innate disposition or inclination. Even though the formation of these characteristics is influenced by learning and environment, it is not uncommon to use the phrase 'born to be risk taking'. It is in this sense that risk taking propensities as well as openness to experience is categorized as psychological characteristics. Alavi and Joachimsthaler (1992), Rogers (1995) and Zmud (1979) also developed similar taxonomies of individual difference variables.

The individual characteristics explicitly addressed in this study may find their counterparts in the innovation adoption literature in which the profile of innovators is

based on similar traits. In the TRA/TAM literature individual characteristics are not specifically discussed. However, authors suggest that external variables (including personality and demographic factors) would affect intention to use a technology through belief and attitude (Davis et al., 1989; Moon and Kim, 2001; Morrison, et al., 2001; Pavlou, 2003; Yu et al., 2005). The reason for the inclusion of these characteristics into the model is based on the belief that it would help improve the explanatory power of the model.

The proposed model emphasizes the role of attitude toward online shopping as a mediator between individual characteristics and purchasing intention. Although this model is grounded in the TRA, the subjective norm has been omitted. The TAM does not consider the subjective norm either. Davis et al., (1989), explain that the subjective norm may influence behavioural intention directly, but sometimes influences intention only indirectly through attitude formation. The former case happens when the user is under external pressure to adopt technology, e.g. while at work or adopting email as a preferred method of communication. Davis et al., (1989) did not include a subjective norm because of its uncertain theoretical and psychological status. Applying the same logic, it has been omitted from the proposed model. Online shopping is essentially an individual's decision and hence is more under the control of the user and probably only slightly influenced by peer pressure. Based on the attitude-intention-behaviour relationship in the TRA, this study proposes a model extending the TAM to predict consumer using the internet to purchase tourism products/services (see Fig 4).

Figure 1: Theoretical model



The theoretical model captures the antecedents of a potential online consumer's behavioural intention along several dimensions: cognitive, psychological and demographic factors. Following the criterion suggested by Agarwal and Prasad (1999) the variables in the model are selected such that they describe the psychological mechanisms and prior knowledge a consumer would possess at the time of encountering this new shopping mode – online shopping. Specifically, demographic characteristics refer to such directly observable individual characteristics like age, gender, educational qualifications and so forth. They are presumed to reflect a person's socio-economic status. Cognitive characteristics emphasize a person's knowledge structure and information seeking and processing style. They are mainly concerned with a person's learning process and prior experience. Finally, psychological characteristics capture the person's innate disposition or inclination. It is in this sense that use innovativeness and interest in future technologies are categorized as psychological characteristics in this study. Finally, the proposed model

emphasizes the role of attitude toward online shopping as a mediator between individual characteristics and purchasing intention.

In the following pages of this section, a set of hypotheses is proposed, which are derived from the theoretical model shown in Figure 4.

Attitude toward online shopping and intention to shop online

Attitude mediates the effects of an individual's characteristics on purchasing intention. There are many theoretical perspectives that form the basis of this argument. In TRA, attitude is defined as an individual's positive or negative feeling about carrying out a particular behaviour (Fishbein and Ajzen, 1975). In TAM, attitude is a 'learned' implicit response towards a concept or object. In the current study, attitude is defined as an individual's overall evaluation of e-commerce as a way of shopping.

Attitude theories suggest that people who have positive attitudes toward behaviour in one context will be more than likely to display the same behaviour in other areas as well. Information processing is affected to large extent by attitude, as would be intent and action. An important argument of TAM is that external variables such as system design characteristics, user personality will affect user acceptance of technology through psychological variables – i.e. attitude toward technology. Davis et al., (1989; p 986) suggest that "people form intentions to perform behaviour toward which they have positive affect".

This sentiment is corroborated in other and subsequent research of behavioural theories (e.g. Bagozzi, 1981). Winter et al. (1998) found in an empirical study that attitude did predict computer usage. In the above discussion, it was mentioned that

online shopping is largely a behaviour involving few social controversies and organizational pressures and hence is under the 'control' of the shopper.

The consumer has many retail channels available to them for shopping as we move more into the 21st century. Traditional in-store shopping is changing face and is being developed to become a leisure pursuit place one reason being because the internet allows alternative enormous and varied shopping opportunities. On similar grounds, selling products and services over the internet is also gaining popularity and offers tremendous potential for ease of price comparison and data collection, including product reviews. Many factors are helping the development of the internet market, some technology related and some life style changes on the part of consumers. In the following pages, the discussion is followed by the hypotheses to be tested.

As mentioned in the literature review, consumer researchers model behaviour use the TRA by evaluating attitudes and beliefs. Attitude is defined as an individual's positive or negative feeling about performing a particular behaviour (Fishbein and Ajzen, 1975). The Technology acceptance model has used the TRA as its foundation and explains determinants of individual behaviour toward a given system (Agarwal and Prasad, 1999; Venkatesh and Davis, 2000). In TAM attitude is a learned response towards a concept or object. In the current study, it is the individual's overall evaluation of internet shopping. While the TAM is specifically tailored to the acceptance of computer-based technologies, it can be argued that the internet is an extension of an existing technology. Although TAM is an influential model, some researchers have recommended incorporating external variables, and feel such variables will help understanding of information technology adoption in a marketing context such as the web.

Consumers' overall attitude towards using a system is said to be a major determinant of usage (Davis, 1993). As is mentioned in the suggested framework attitude mediates the effects of individuals' characteristics. Attitude affects the way a consumer processes information, which process leads to action or inaction. Nelson (1990) points out those attitudes have been widely addressed as variables in studies of information driven innovations. Winter et al., (1998) found that attitude predicted computer usage. The attitude-intention-behaviour linkages would be strong if people are free to act.

The role of demographics

Demographic characteristics have been widely studied in the innovation adoption and consumer behaviour literature (Roy and Ghose, 2006; Venkatesh et al., 2003; Moon and Kim, 2001). The research interest in demographics may be attributed more to the practical concerns than to theoretical reasoning, although age, education, and income are conceptually important variables in early adoption processes. On the one hand, demographic data are easier to obtain and less susceptible to measurement error – two features that are attractive to many researchers. Moreover, demographic variables are often regarded as a 'proxy' for unobservable cognitive and psychological constructs. A person's educational attainment and background are often used as indicators of his/her knowledge and expertise. Marketers and technology vendors target their marketing mix based on the understanding of the demographic profile of the potential and existing consumers.

Previous consumer surveys and academic studies have found relationships between demographic variables and consumption behaviour (Bonn et al., 1998; Hanson, 2000; Sigala, 2004). Will demographic variables explain variances in dependent variables if psychological and cognitive constructs are added to the explanatory model? Also,

importantly, will demographic variables work as effective proxies for unobservable constructs or will they only have spurious relationships with the dependent variables? In the context of the current study the question being asked is, will prospective consumers with different demographic characteristics be different in their attitudes toward online shopping?

Based on these broad questions in mind, demographic variables like age, gender, educational qualifications are examined. These variables are selected because they have been found to be basic demographic variables influencing adoption of information systems (Alavi and Joachimsthaler, 1992). In both consumer behaviour and adoption literature the most prevalent topic has been the derivation of innovators profiles for specific product categories or technological systems. A finding from previous studies has been that younger people tend to be more innovative and hold positive attitude towards innovation (Gatignon and Robertson 1985). Majchrzak and Cotton (1998) found that older workers were more likely to resist new technologies. Various surveys on web users have also shown a common pattern – users of the internet tend to be younger than the general population (Kehoe at al. 1999; Oakes et al., 1999).

Thus the following propositions will be examined:

H_1: Demographics will be associated with the attitude toward online travel shopping – Viz. a positive relationship will exist between educational attainment and on-line usage; and a negative relationship will exist between age measured in years and on-line usage for tourism product.

The null hypotheses might therefore be phrased as:

H_{10}: No relationships will exist between demographics and attitude toward online travel shopping.

The role of attitude

Cognitive characteristics are mainly about knowledge and learning. Human cognition involves information collection and processing, thinking, reasoning and decision-making. Cognition has been studied widely in innovation literature. Innovation adoption researchers suggest that certain cognitive characteristics can be used to identify innovators and early innovation adopters (Rogers, 1995). Bodur et al., (2000) suggest that one's attitude toward a specific technological system is mainly determined by one's cognitive structure. Foxall and Haskins (1986) suggested that cognitive style is the core of the innovativeness construct. At a general level, cognitive style relates to the characteristic ways individuals process and use the information. In this study the focus would be to investigate the relationship between those cognitive characteristics that are relevant to e-commerce and consumers' attitude regarding e-commerce.

Knowledge, skills and experiences play a major role in cognition processes. Researchers have paid considerable attention to product familiarity and consumer expertise (Alba & Hutchinson, 1987). Thus knowledge related constructs have been linked to innovativeness. Hirschman (1980) suggested that prior knowledge of the product would lead to greater ability to detect superior new products in that class and hence the probability that they may be adopted.

The technology acceptance literature has also seen empirical evidence about relationships between knowledge, skills and experience. Prior experience with similar technologies was found to have positive effect on the users' beliefs about an

innovative technology (Agarwal and Prasad, 1999). Hence, consumers with greater internet knowledge would be more favourably inclined to shop online. This has been supported by empirical evidence (Bhatnagar et al., 2000; Vrechopoulus, Siomkos and Doukidis, 2001). Despite limitations, a self reported measure of internet knowledge better reflects a potential consumer's systematic bias than does objective knowledge. Importantly, perceived knowledge reflects a person's self-confidence, which is a key when adoption of innovations is considered.

Thus it is proposed that:

H_2: Perceived level of internet knowledge will be positively associated with attitude toward online shopping for tourist product.

The null hypothesis is:

H_{20}: No relationship exists between perceived level of internet knowledge and on-line shopping for tourist product.

Perceived self-efficacy as to internet usage

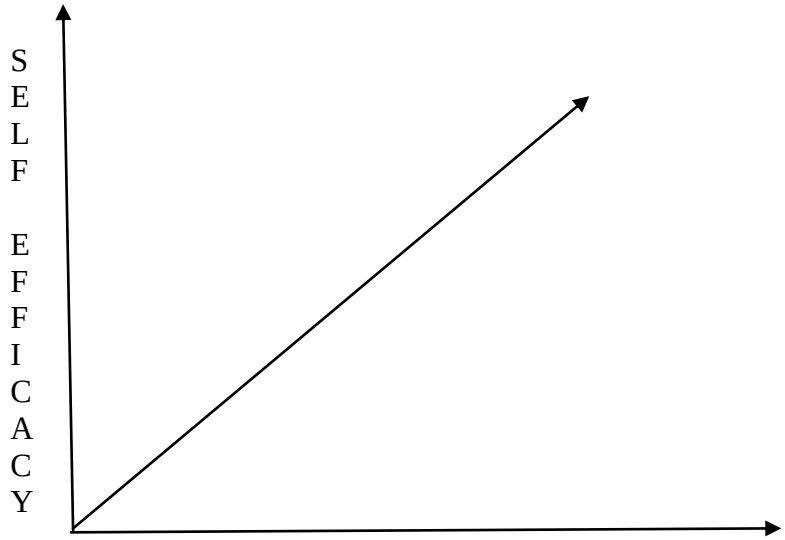
It has been noted in TAM that the relationship between an individual's expectation for a given technology usage outcome and attitude toward the technology has been emphasised. The key constructs are perceived usefulness and perceived ease of use. But of late it has been pointed by researchers that one point missing here is the self-efficacy construct, which has been addressed in the literature about theory of planned behaviour.

Self-efficacy has been defined as "judgements of how well one can execute courses of action required to deal with prospective situations". Wood and Bandura (1989) have stated self-efficacy as "beliefs in one's capabilities to mobilize the motivation, resources and courses of action to meet a given situational demand" (p 380). So self-

efficacy reflects individuals' belief in their own capability to undertake successful behaviour that is an ability to achieve desired ends. Thus, self-efficacy is an important factor that will influence people's reactions to innovations. Many MIS researchers suggest that self-efficacy should be explicitly addressed in theoretical models explaining technology usage (Bhattacherjee, 2000; Compeau, Higgins and Huff, 1999).

In previous MIS research, self-efficacy was often defined as a domain specific concept capturing a person's perceived ability to use computers (Murphy, Coover and Owen, 1989). It has been maintained that self-efficacy could be a generative capability that allows individuals to integrate cognitive and behavioural skills to accomplish a particular job like surfing the internet (Torzadeh and Van Dyke, 2002). Previous successes in situations would enhance the individual's self-efficacy in future situations. Moreover, it has been argued that the relationship between self-efficacy and behaviour is best demonstrated in challenging situations of risk and uncertainty (Chen et al., 1998). Online shopping can be described as challenging and involving uncertainty and risk in the initial stages when a user is at the 'novice' stage. Thus an individual with stronger self efficacy would be more willing and eager to try new things and less concerned about the negatives. On the contrary, a person with low level of self-efficacy tends to avoid uncertainty, challenges and risk. They tend to stick to the standard, habitual tried and tested behavioural pattern. The term positive is used in a mathematical sense and is shown in Fig 5 below:

Figure 2: Relationship between perceived self efficacy and on-line usage for tourism product



Therefore, the following propositions emerge.

H_3: Consumers perceived self-efficacy will be positively associated with online shopping for tourism product.

And the null formulation would be:

H_{30}: No relationship exists between perceived self-efficacy and on-line shopping for tourism product.

Perceived risk of loss

Perceived loss can relate to a) the product not meeting the description, b) the loss of money due to non-delivery, and c) the loss of other monies due to lack of security and theft of financial details such as credit card numbers.

The other cognitive factor examined in this study is perceived risk of online shopping. Perceived risk can be defined as the overall assessment of risky on line shopping. The

concept of perceived risk is related to the fact that consumers are often concerned about the uncertainty of buying a product or service (Dowling and Staelin, 1994). Consumers' perceived risk regarding purchase of a product has been found to be useful in determining and predicting their product involvement (Dholakia, 1997) and information seeking (Chaudhari, 1998). This study marginally differs in defining the risk perception when compared to previous researchers in marketing. The marketing literature is mainly concerned with risk assessment regarding specific products, whereas this research concerns itself with a general belief about whether online shopping is risky or not. Thus perceived risk of online shopping is defined as an individual's overall judgement on the behaviour of buying on the internet. It has been mentioned in many studies that an individual's cognitive process will and can change over a period of time. However, in this study, the focus is on the present state of mind.

Internet based selling is subject to loss of tangibility of products and lack of face-to-face interactions between a buyer and seller. One of the distinctive features of the tourism product is that it cannot normally be seen and touched physically prior to purchase, which is intangible. Its intangibility makes it harder to buy but easier to distribute (Evans et al., 2003). The role of travel information for consumers is so significant because visitors expose themselves to risk in buying vacations that they hope satisfy various needs and wants important to them (Mill and Morrison, 2002). So when you combine the two – internet and tourism, we can say that internet shopping implies higher level of risk and studies have shown that internet based transactions are often risky (Bhatnagar et al., 2000, Vijayasarthy and Jones, 2000). It is reasonable to believe that individuals who perceive online shopping as very risky would be less favourable toward online shopping.

Therefore, it is proposed that:

H_4: Consumers perceived risk of online shopping will be negatively associated with online shopping for tourism product (accommodation, airline tickets, car rentals etc.).

And the null formulation is:

H_{40}: No relationship exists between perceived risk of on-line shopping and on-line shopping for tourism product (accommodation, airline tickets, car rentals etc.).

Risk taking and openness to experience

While the underlying assumption is that people's attitudes are influenced by their rational beliefs and self-evaluation, there have been researchers who have argued for the role played by non-cognitive factors. Bodur et al., (2000) found that affect related variables could explain significant variance in attitude independent of cognitive factors. This research therefore includes measures for the affect of openness to experience and risk taking propensity as determinants of online shopping.

A psychological tendency to try new things would be operable when an individual is deciding whether to buy online. For early adopters, prior experience will not form any part of a rational decision. Even for those who have had experience with computers and internet, an online shopping decision can be shaped by perceived potential risks arising from choosing stores and products. However, compared to conventional shopping, online shopping may be attractive primarily because of its novelty and fun.

Cannella and Monroe (1997) have suggested that the psychological constructs of *openness to experience and risk taking propensity* can be used to identify competent strategic leaders. Since online shopping in early 2003 can be said to be a new and yet risky way of shopping (Forsythe and Shi, 2003; Pavlou, 2003), it is reasonable to explicitly examine the relationships between these psychological characteristics and online shopping. Data for the pilot study was done during 2003.

A risk avoidance propensity is defined as an individuals' tendency to take or avoid risks. In the literature on risk taking, many researchers suggest that 'risk taking is a general psychological tendency'. In this study risk taking is conceptualised as a stable dimension within the context of personality. The implication is that different people may have different levels of risk taking propensity.

Risk taking is closely related and associated with risk perception. This distinction between individual differences in the perception of risk and differences in reaction to that risk has also been examined (Sitkin and Pablo, 1992). Risk taking propensity is probably the single most important attribute that contributes to risk behaviour. Rogers, (1995) found that early innovation adopters show better ability to cope with uncertainty and risk than late adopters. In the context of e-commerce, few studies have explicitly examined how online consumers' risk taking propensity is linked to their attitudes and purchasing intentions (Ang, Dubelaar, and Lee, 2001; Ba and Pavlov, 2002; Wang and Emurian, 2005).

Bhatnagar et al., (2000, p 100) mentioned that "different individuals would have different levels of risk acceptance". However, they examined objective risks rather than how risk acceptance would influence purchasing behaviour. Despite the straight forward reasoning, this linkage needs to be empirically tested. Thus:

H_5: Risk taking propensity will be positively associated with online shopping.

And the null formulation is:

H_{50}: No relationship exists between propensity to take risks and on-line shopping for tourism product.

Openness to experience – experience of new technologies

Openness to experience is a factor in human personality. People with high openness tendencies have an interest in varied experience (Wanberg and Kammeyer-Mueller, 2000). Openness to experience also captures human attributes like fantasy, depth of feeling, behavioural flexibility, and intellectual curiosity. The specific statements capturing this are discussed in the section on measures. Different from close-minded people who prefer familiarity, and simplicity, people with high levels of openness, tend to seek novelty, variety, and complexity. Openness to experience is conceptualised as an inheritable personality trait which is stable across time and situations.

McCrae (1996) suggested that openness to experience has important consequences for a wide variety of social behaviours. Specifically, many innovators' characteristics as described by Rogers (1995) will fall into the conceptual domain of openness to experience. According to Rogers, innovators and early adopters have greater empathy and imagination, stronger ability to deal with abstractions, lower dogmatism and more favourable attitudes towards change, education and science. Ramaswami et al., (2000) found that consumers' willingness to use online channel had significant effect on their online purchase. Finally, openness to experience is considered in this study because it has been the subject of psychometric efforts in the past few years and a validated measure can be found in the literature (McCrae, 1996).

Internet based shopping was initially novelty based and provided a novel stimulus (Citrin, Sprott, Silverman and Stern, 2000; Shu, 2004). It could satisfy an individual's aspiration for a new and different experience, because of its innovative features, interactive nature, variety of selections and price comparisons. Use of any one technology must take into consideration the use of other technology or technologies. In this study the complementary technologies considered are mobile phones, home security systems, and interactive television. Vitalari, et al., (1985) proposed and tested this suggestion under the heading of cognate technologies. An argument made in this connection is that given limited time, use of any technology naturally takes away time from use of other technologies, thus limiting the level of use diffusion within the adopting unit. On the other hand, it can also be argued that the cognitive effort required to accumulate knowledge decreases and thus leads to the acquisition of related products.

New technologies that have multiple functionalities expand user involvement in major ways by increasing the variety of uses. Because more things can be accomplished the usage rate may also increase over time. Thus, if we consider the complementary nature of technologies or their inter-connective potential, the use of a given technology may increase with the use of other complementary technology. Thus, if complementary capabilities are indeed indicators of acquisition of new technologies, it is logical to conclude that people who own complementary technologies like video cameras; digital cameras etc are more likely to adopt new technologies. Hence, it is proposed that:

H_6: Use of complementary technology results in higher use of internet for shopping for tourism products.

And the null formulation is:

H_{60}: There is no relationship between the use of complementary technologies and internet technologies for tourism product.

Affective consequences of use

Consequences of use diffusion are: a) satisfaction with the technology, and b) interest in new technologies. How consumers make use of technology directly impacts the nature and perception of the technology. Perceptions can be of two categories – perception directly related with the technology and perception of the consequences of using the technology. Ellen et al., (1991) suggest that a person's ability to use a product successfully affects their evaluative response of the product. Further it is generally assumed that greater use will result in higher satisfaction (Anderson and Ortinau, 1998; Kekre et al. 1995; Downing, 1999). Users having success in using technology would show higher use of the technology, thus it can be suggested that users exhibiting intense use diffusion (i.e. users who show not only increased use in terms of time taken, but also in variety of uses to which they put the technology) are more satisfied with the technology than users with low diffusion. According to Oliver (1980, 1995) consumer satisfaction with a product is a function of their expectations and the product's ability to fulfil these expectations.

The degree of use also directly results in the perceived impact of the technology on daily lives. At one extreme, technology becomes so inextricably part of users' life and activities and alternatively, low use will not have the same perceived impact since it is less integral part of the user's activities.

Thus it is proposed that:

H_7: Higher usage levels of the internet for tourism products are positively associated with higher affective scores.

While the null formulation would be:

H_{70}: There is no relationship between usage levels of the internet and affective scores.

Interest and satisfaction

The level of satisfaction experienced with an existing technology increases resistance to and reduces the likelihood of adopting another technology (Ellen et al. 1991). An extension of their finding is interest in acquiring related technologies. Users who have successful experiences reduce the level of perceived risk and realise the possible benefits.

Users who have invested time and effort in developing expertise in using a technology may be unwilling to lose this expertise by acquiring new technologies and thus may be un-interested in new technology unless it can perform the same tasks better and the expertise previously developed is transferable. But other technologies have an enabling role in people acquiring new technology. In this study there were seven items that were used to measure the interest in future technologies and these items are detailed in the section on measures.

Thus it is proposed that:

H_8: Higher usage levels of the internet for tourism products are associated with high levels of interest in ownership of new technologies

And the null formulation is:

H_{80}: There is no relationship between usage levels of the internet with interest in ownership of new technologies.

The next chapter will discuss how the above propositions were articulated within the research design. It will describe the design of the questionnaire used in the research and outline how that design links to wider literature.

CHAPTER 4: Methodology

The earlier chapter presented an overview of this study by defining the stage, context and need for such a research. This chapter also enumerated the following primary research questions (each with sub questions) that guided this effort. For convenience, the primary research questions are repeated here:

1 What differences in demographic-socio economic characteristics exist between internet users and internet non-users?
2 What differences in travel related characteristics exist between internet users and internet non-users?
3 Which characteristics among demographic/socio-economic characteristics and travel related characteristics and internet related characteristics are most effective in differentiating the internet users and internet non-users?
4 How does use diffusion affect the adoption of internet for travel planning and purchase of travel goods and services?

In this study, the scope of internet usage is restricted to the utilization of internet by visitors travelling to New Zealand.

A complete review and synthesis of the relevant literature led to the identification of the constructs and variables related to this study. Using the constructs and variables, it was possible to build the research model (see figure 4). The purpose of this chapter is to describe the research methodology and design used to complete the study.

According to Kerlinger (1986), the research design represents and articulates the research plan and the structure of investigation that will be followed when seeking answers to the research questions. Its role is to provide answers to the research

questions and to control variance (Kerlinger, 1986). Supporting this thinking, Yin (1994, p 18) defines research design as the "logic that links the data to be collected and the conclusions to be drawn to the initial questions of the study". Simply stated, the research design serves as a blueprint that outlines the overall research program and guides the investigator in collecting, analyzing, and interpreting observations. Hence, the purpose of this chapter is to present the research blueprint that not only guided the study but which will also serve as a guideline for subsequent investigators wishing to replicate or expand this study.

Effective research must balance relevance with rigour (Benbasat and Zmud, 1999; Malhotra and Grover, 1998; Weick, 1989). To obtain valid and meaningful results from research, it is critical to employ and appropriately implement the methods most suitable for the topic of study. The research methodology cannot be chosen arbitrarily. Instead, the research methodology is determined first, by the research questions that drive the study and second by the current state of knowledge reported in the literature.

There has been a growing importance of information technology and global distribution systems in the tourism industry, and there have been many studies and research published between 2003 and 2006 on this subject matter. There is also debate regarding the scholarly nature, the contributions and the differences between quantitative and qualitative research (Kerlinger, 1986; Lee 1989; Yin 1994). The prevailing school of thought suggests that qualitative research is more aptly applied in situations involving theory building, not theory testing, though there are times when qualitative techniques are appropriate for theory testing (Yin, 1994). With qualitative research, the aim is generally to explain or describe a pattern of relationships, often specific to given situations (Huberman and Miles, 1994). The data typically come in

the form of words, not numbers, and the evaluation of qualitative data tends to be more subjective than for quantitative studies because the researcher attempts to establish themes, patterns and categories from the data based on his/her understanding and interpretations, although increasingly aided by software based on techniques discovered from neural network theories.

Many traditional scientists argue that a quantitative approach to research is superior to a qualitative one, because the use of statistics (inferential and descriptive) and experimental design are perceived to provide more scientific rigour and objectivity and therefore support theory testing. The resulting products are said to have greater validity, generalisability, and replicability and, hence provide theoretical contributions. Additionally, a commonly held position is that scientific maturity of a field can only be achieved through empirical quantification. Thus, to some, a field is legitimized only after building a rich body of knowledge grounded in an abundance of quantitative empiricism.

Quantitative methods are often though to be synonymous with ‘hard science’ whereas qualitative methods have been reserved for the ‘soft sciences’. According to Kerlinger (1986) and Yin (1994), qualitative research represents the weaker sibling. This is however, a much contested stance, and it can be argued that the selection of any given statistical technique and the assessment of results engages the researcher in evaluative judgments just as is the case in qualitative analysis.

Qualitative research is an umbrella term. It does not belong to any single discipline, nor does it have a distinct set of methods to call its own. Qualitative research is used by many disciplines and borrows research methods from a variety of fields. It is multi-method in focus and is used to study things in their natural settings by

employing a number of empirical materials (interviews, documents, observations) and by attempting to interpret phenomena in terms of the meaning people bring to them. The use of multiple methods, empirical materials, perspectives, and participants in a single study enables a researcher to develop rigour, richness and triangulation to any study. The resulting product provides a more holistic view and understanding of the phenomenon at hand.

Contrary to the view expressed by Kerlinger (1986) and Yin (1994), this author subscribes to the view that no one type of research is more generally superior to another. The appropriateness and fit of any method will depend on the research questions, problem statement and context. The research method(s) chosen must be based on the research problems and context, not on any apparent ease of use or perceived workload required by the techniques selected. In other words, the methodological choice follows the research question and problem context, not vice versa. Today, a more modern school of thought suggests that qualitative research methods are appropriate and at times more effective when attempting to study and explain a given phenomenon. In some research, both quantitative and qualitative methods are employed to develop a more complete understanding and to create a source of triangulation.

Research Method

Sample and data collection:

The sample included 517 visitors to New Zealand based on convenience sampling. These visitors were those who had completed their vacation and were returning home to their own countries of residence. The data were collected at two locations. The

first, at the Auckland Viaduct Basin Tourist Information Office proved to be problematical for the reasons discussed below, and a total of 167 respondents were collected over a period of 7 months. The second location was Christchurch International Airport where 350 respondents completed the questionnaire with a period of three weeks. First, the literature reviewed previously would indicate that perceptions and patterns of internet usage are independent of a variable such as place of data collection. The important variables will relate to psychological factors, socio-demographic variables, patterns of past usage and experience, access to the internet and similar factors. There was little in the literature to suggest that place of data collection would be a factor. Second, to sustain an argument that place of data collection was important would require an argument that it represented some different degree of internet experience. However, in the case of this research a series of filter questions were used. Was the respondent an overseas visitor visiting New Zealand for the purpose of a holiday? Was the respondent at the end of their holiday and about to return home? It was this second filter question that demonstrated the problematic nature of the use of the Auckland Viaduct Basin Tourist Information Office as a site for interviewing. Many hours were spent for very few respondents. Most of those approached were but recently arrived in New Zealand, and at weekends the end result was often but a handful of respondents. Equally, many evenings would produce but one respondent. Given this to be the case it can be legitimately asked – why the choice of this site? First, the management of Auckland International Airport would not grant permission for a researcher to enter their premises, even when a request was channelled through the New Zealand Ministry of Tourism. This effectively denied access to an obvious point where a target sample could be reached. Second, the site was close to the researcher's office and place of work, and it was but a few minutes

walk. The CEO of Tourism Auckland supported the research; it was a place in the dry and warm on wet weather and cold days – and a place which tourists visited. These factors supported its selection as a place of interviews. However, it was obvious that progress would be slow, and hence an approach was made to the General Manager of Christchurch International Airport. They supported the project, and the researcher thus took time from work and used holiday leave to complete the data collection.

Overall, despite its limitation, the utilisation of convenience sampling in this study appears appropriate for both theoretical and operational considerations. Dates (24/25 July 2004; 18/19 Sept, 2004; and 23/24 Oct 2004) of data collection at Christchurch International Airport (departure area – airside before customs and immigration check but after check in for the flight) were selected on the basis of convenience, but when at the airport outgoing flights were selected primarily on the basis as to whether the destination was an English speaking country (e.g. Australia, the US or UK). Since some these flights touched some Asian cities like Singapore and Hong Kong, there were a few Asians who were approached.

The data were collected through a self completion questionnaire drafted in English. In order to select only overseas visitors, a filtering question was to ask if the potential respondents were overseas visitors or New Zealand citizens or residents. Passengers who completed their check in at a selected outgoing flight (to destinations like Singapore, Sydney and Brisbane) from Christchurch International Airport were approached and offered a covering letter and an explanation of why the survey was being conducted. Their permission was sought as to participation. When they agreed, each participant was screened to ascertain whether they were a visitor or not as

described above. No specific question was asked to determine whether they were internet users or not, and no attempt was made to determine if they had bought products or services through the net. This was because a cross section of both users and non users was required.

Christchurch International Airport was chosen because they agreed and permitted the surveys to be done on the airside of the International Departure lounge. Auckland International did not respond to the request to conduct the survey. Since the flights were scheduled to take off at two different times (some in the morning – about 3 flights and about 4 in the afternoon/late evening), the airport was visited about two hours prior to the departure times. This enabled the researcher to meet and request passengers on flights to foreign ports. Due to security issues, a badge indicating who and which institution was represented was always on display and handy for any one from the airport to see. After the first couple of hours on the first day, July 24th, most security personnel seemed to recognize and identify the researcher.

The questionnaire was then left with the respondent to self complete. It was mentioned both in the covering letter and orally that it would take about 20 minutes to complete the survey. They were encouraged to complete the survey and leave it at a chair nearby or that the researcher himself would meet with them and collect the completed survey. One problem faced here was that people would leave half completed or sometimes even empty questionnaires around the departure area.

This type of data collection helped improve the response rate. Approximately 45% of those approached were domestic residents. Of the remainder, 30% agreed to help, and thus the sample is of foreign visitors to New Zealand. Of these approximately 23%

usefully completed the questionnaire. Since only non-New Zealanders were approached the sample is of foreign visitors to New Zealand.

Since the two samples were collected at two different places, the samples were statistically compared and were found valid to be combined and used as one set for detailed analysis. Table 8 in the appendix to this study shows the results of t-tests across the majority of items where non-nominal data exist. A total of 63 items are so analysed. Of the 63 items 80 percent are not statistically significant in their differences. The question can be asked, what of the remaining 20 percent? Are they significant in their difference? It is not uncommon when using 7 point Likert type scales for t-tests to be significant under certain conditions. One such condition is the existence of low to very low conditions of agreement with a statement. One such example is on the item 'I avoid learning new skills, especially when they look difficult' where the t-test is significant at p=0.03. However the mean scores for the two sub-samples are 2.14 and 2.58 with similar standard deviations of approximately 1.55. In essence it can be argued both sub-sample are expressing similar degrees of non-agreement with the statement – and from a managerial perspective it can be concluded that respondents are stating that perceived difficulty of a task is little impediment to learning. Thus, on this item, there would be little value in perceiving location of data collection as a valid reason for not treating the respondents as one valid sample. Another sample at the opposite end of the scale is the use of the internet for email. The t-test statistic is significant at p=0.03, but the mean scores are 5.64 and 5.96 with again comparable standard deviation scores. Both sample are expressing relatively high degrees of agreement with the statement, and thus again, conceptually and managerially the same conclusion can be drawn that place of data collection is

immaterial. What is material, from the prior literature, are those factors that locate individuals on the distribution curve.

Another way of statistically assessing the validity of there being one sample is to calculate correlations across two sub-samples. This was done at the time of data collection when the new data from Christchurch International Airport was collected – and the process can be retrospectively undertaken as shown by the coefficients of correlation. For this test the sample was divided by taking the respondents from Auckland Viaduct Basin and then comparing them to the next sequence of 166 respondents from Christchurch International Airport using Spearman's rho test of correlation. The purpose of this test is to compare the distribution of scores between two samples or sub-samples on the same item, and it does this by ranking the patterns of scores and then comparing the rankings. The results from this approach are shown in table 9 in appendix. It can be seen that for the most part they scores were in excess of 0.90 at levels of $P<0.05$ – thereby again confirming the use of the sets of data as generating one sample for purposes of subsequent analysis. It can thus be concluded that using the dataset as one sample was valid from a statistical perspective, while no conceptual impediment also existed given the nature of the sample as overseas visitors and the determining variables as those pertaining to internet usage with reference to the destination of New Zealand and general usage patterns of the internet.

Measures

The design of the study has combined and modified measurements of pertinent variables in the IT field, marketing and consumer behaviour literature. The development of the questionnaire was accomplished in three phases; (1) study the questionnaires of previous research related to the research topic of this study, (2) pre-test a questionnaire, and (3) refine the questionnaire and some statements in light of pilot testing.

The questionnaire was to be divided into four parts, even though not specifically marked on the questionnaire as such. In all there were 28 questions and they included 6 demographic variables including the age, gender, level of education, nationality, ethnicity and area of usual residence.

There were questions which dealt with cognitive and psychological characteristics. Some questions measured the attitude and intention to shop online. The covering letter and questionnaire can be found in Appendix A and Appendix B. As noted there are many existing measurements for most of the variables included in this research in both the IT and market research literature and these are outlined below. The format for measuring each variable was adopted from previous research and re written in the context of online shopping and internet usage with reference to tourism products.

A brief description of the measures is given below, including the statements used that were grouped under the respective headings. The cognitive and psychological variables were measured using a 7 point Likert type scales with 1 standing for the least level of agreement with the statement and 7 for the highest level of agreement.

An option for non response was also included in an attempt to avoid potential bias to the midpoint of the scale by respondents who might feel an item was not pertinent to them (Ryan and Garland, 1999).

Demographic characteristics

Respondents were asked to select from given options their age and gender. Each respondent was asked to indicate their highest academic qualification that they had achieved. There were five categories: school leaver, vocational/trade school, university graduate, a master's degree and doctoral degree.

The respondents also were asked about their nationality and ethnicity. The ethnicity was included to find out if there was co-relation between ethnicity and behaviour towards shopping on line given that ethnicity can be independent of nationality. Lastly they were asked about the area they live in – was it a suburban, urban or rural area.

Cognitive characteristics

Internet knowledge was measured with 5 items regarding the respondent's knowledge of the internet. Internet knowledge (IK) had the following statements:

- Learning to use internet would be easy
- I would find it easy to use internet to do what I want to do
- It would be easy for me to for me to be skilful at using the internet
- I know quite well how the internet works
- I am an experienced internet user

A reliability analysis indicates that the items used have a Cronbach's alpha of 0.88; Cronbach's alpha measures how well a set of items (or variables) measures a single unidimensional latent construct. When data have a multidimensional structure,

Cronbach's alpha will usually be low. Technically speaking, Cronbach's alpha is not a statistical test - it is a coefficient of reliability (or consistency).

Cronbach's alpha can be written as a function of the number of test items AND the average inter-correlation among the items.

Internet usage was measured with eight items regarding the respondent's usage of the internet. It is also conceptualized that usage has two dimensions – variety and rate of use (Ram and Jung, 1989). Variety is the different ways in which the product can be used, while usage rate refers to how often the product is used. Internet usage (IU) had the following statements.

- How often do you use the internet?
- How often do you use internet at work?
- How often do you use internet at home?
- How frequently do you use internet for a list of 10 items?
- Have you bought services through the internet?
- Have you bought tourism services through the internet?
- To what extent did you use internet to gather information?
- How much travel planning did you do through the internet for this trip?

Rate of use was measured as the number of hours of internet use at home and at work respectively. Variety of use was measured with a checklist of possible uses of the internet. In the pre pilot study open ended questions were asked of the respondents to discover potential various uses of the internet. During that earlier survey 10 different uses of the internet were mentioned, and these were included in the final questionnaire.

Internet based information search was measured with 6 items. These measured the respondents' evaluation of different internet related information sources and search capability. The statements which showed the respondents' internet based information search (IS) were:

- I search for information on the internet for different projects
- I can find information on the internet easily
- It is easier to get information from the internet
- How highly do you value the following as information sources
    - Internet advertisements
    - Direct emails
    - Internet search engines
    - Hyperlinks
- Defining a search on internet is complicated
- Internet searches are time consuming

However, yet again, the alpha coefficients were below 0.60, partly because of different patterns of usage of the information sources.

Internet experience (IE) was measured with the following seven (7) items:

- The problem with the internet is being able to find information
- The problem with the internet is not being able find pages visited
- The problem with the internet is not being able to determine where I am
- The problem with the internet is encountering broken links
- The internet is essential in my life
- The internet has saved me lots of time
- It would be difficult to imagine life without internet

The Cronbach's alpha coefficient for this scale was 0.69

Self efficacy was measured with 5 items. The items were taken from the measurement scale for general self-efficacy originally developed by Sherer et al. (1982). One additional item relating to the internet was included which was developed for this

questionnaire. While the original scale included 17 items, only 5 were selected. One statement was modified to suit the subject of the study – internet – and the statements included were: Self Efficacy (SE)

- I find I can manage to solve difficult problems
- If in trouble I can think of a solution
- I avoid confrontations on the net
- If something is complicated I do not bother trying it
- I avoid learning new skills, especially when they look difficult

Selecting only 5 of the 17 items was done to ensure that the length of the questionnaire was kept manageable. Since the validity and reliability of this uni-dimensional measurement scale has been established, it can be argued that randomly selecting the item will not influence the applicability of the scale. According to the authors of this measurement (Sherer et al., 1982), the items do not refer to any specific behavioural domain and thus reflect self efficacy in the general use. However, the Cronbach's alpha coefficient was 0.23 which is below the recommended level of reliability. Indeed the alpha score did not change much, even when the scores were reversed for the negatively worded scales.

Perceived risk of online shopping was measured with 8 items. Several items were included to capture the respondents' assessment of different aspects of perceived risk. While shopping over the internet, there are risks generally associated with the internet itself and then those specific related to purchases made over the internet. What is being sought is not just the basic belief of the respondent, but their perceptions of various other dimensions related to the internet and purchases over the internet. The statements which measured the risk included:

Perceived risk of online shopping (PR)

- How concerned are you about security in general on the internet?
- How concerned are you about security in relation to making a purchase over the internet?
- How concerned are you that your personal details will be confidential?
- How concerned are you that your credit card details will be secure?
- How concerned are you that products will be good as they appear?
- Have you had any negative experiences?
- It is risky to buy over the internet
- Online shopping is not safe

The Cronbach's alpha coefficient for this scale was 0.85

Complementary technologies. Use of complementary technologies is one dimension of evidence of technology adoption and familiarity. This was measured by two distinct items: products used for communication (7 individual products) and complementary technologies used at home (10 individual items). Diffusion of innovation literature has always stressed the importance of interpersonal communication (Burt, 1987; Valente, 1995).

Complementary technology use was checked by the use of the following:

- which of these do you use to communicate
    - Fax
    - Phone
    - Mobile phone
    - Chat room
    - Surface mail
    - Courier
    - Internet email
- which of these do you have at home

- Voicemail or answering machine
- Fax machine
- Composite machine (Fax, copier, scanner and printer)
- Video game console
- Stereo System/CD Player
- Computer including CD player and DVD player
- Video recorder
- DVD/Home theatre system
- Video Camera or Digital Camera
- Personal Digital Assistant (PDA)

Thus communication with others serves as a way for individuals to learn about new ideas and integrate new uses for the technology into their usage portfolio. Use of any technology must take into consideration the use of other technology or technologies. This idea was proposed and tested in a study by Vitalari et al. (1985) under the heading of cognate technologies. Shugan (1980) has shown the cognitive effort required to accumulate knowledge decreases over time and with growing familiarity and thus leads to the further acquisition of related products. This is particularly true of information technologies because different systems are capable of being used in conjunction with others.

Psychological characteristics

Use innovativeness was measured by modifying the scale developed by Price and Ridgeway (1983). The scales reported by Price and Ridgeway have been recently tested by Girardi, Soutar and Ward (2004). The results showed support for a uni-dimensional measure of use innovativeness. In terms of parsimony the analysis

suggests that only nine items are required to measure this construct, much less than the original 44 items as suggest by Price and Ridgeway (1983).

The items used in this study to measure Use Innovativeness (UI) were:

- I am creative with computers
- I look to the internet as a first alternative for information
- I am curious about how the internet works
- I search for information on internet for different projects
- I can find information on internet easily
- It is easier to get information from the internet
- I search for vacation destinations on the internet
- I use the internet in more ways than most of my friends
- Using the internet helps me plan better vacations
- It is flexible to get information from the internet

Several authors have adopted Inherent Novelty Seeking and consumer creativity in their effort to model multiple usage behaviour. Use innovativeness is a related construct that focuses on the ways products or services are used. Consequently, use innovativeness can apply as much to old products and services as to new ones (Price and Ridgeway, 1983). A consumer can be use innovative if, for example, they use an old product in a new or novel way (e.g. they might use baking soda to remove carpet stains). Alternatively, a consumer might use new products for old activities (e.g. a consumer could use a computer to keep financial records that were previously kept manually). Like innovativeness, use innovativeness has been suggested to be a personality trait. Price and Ridgeway (1983) suggested that use innovativeness had six aspects, which they termed creativity-curiosity, risk preferences, voluntary simplicity, creative re-use and multiple uses potential. They found these factors were good predictors of students' innovative use of handheld calculators. Price and Ridgeway (1983) argued that use innovativeness was an important predictor of the chances of

extending product lifecycles, furthering the product life cycle's growth phase and improving new product acceptance. The items were selected from each of the four factors reported by Price and Ridgeway and reworded to the fit the context of the study. The items were randomized and measured with Likert type scale where respondents indicate on a 7 point scale how well the personality statements describe themselves. A reliability analysis indicated that the ten items used, have a Cronbach's alpha of 0.73. An average of the items was taken as an overall measure of Use Innovativeness.

Interest in future technologies was assessed by asking the respondents what their level of interest would be in technologies that are currently under development, not in the market at the time of the study but which would be available at a future date. Interest was measured on a 7 point scale (1 = have no interest, 7 = very strongly interested).

Interest in Future Technologies was measured by the items:

Cost aside, how interested would you be in having the following

- Refrigerator with a computer screen to track inventory
- Mobile phone with ability to pay for daily essentials
- Internet facility on your TV
- Internet facility on your mobile phone
- System that allows you to control lighting, temperate and home security
- Video phone with internet capability
- Composite audio-video system that allows you to play and record.

These technologies are sometimes referred to as smart-home technologies (Diegel, Bright and Potgieter, 2004; Chapman and McCartney, 2002) , and their choice was based on the fact that they are computer based technologies specifically designed for the home with the intention of making everyday living easier and more efficient.

These technologies ride on the wave of diffusion of computers and internet into the home, and can be seen as natural extensions of the evolution to today's home computers in many ways.

The Cronbach's alpha coefficient for this scale was 0.86

Attitude toward online shopping (AOS) was measured with 5 items developed by the researcher. These were:

- I like the idea of online shopping
- I find buying on internet is more fun than buying in a store
- I enjoy buying over the internet
- My overall attitude to internet shopping is positive
- I do not see reason in buying over the internet when they are available in stores
- Compared to my friends I use internet shopping more.

The Cronbach's alpha coefficient for this scale was low at 0.55

Intention to shop online had two items of measure again developed by the researcher.

Intention to shop online (ISO)

- I use online banking
- I sometimes shop in stores and then buy them over the internet.

Domain specific innovativeness (DSI) was assessed by asking the respondents what their opinion was towards the internet (which is the domain of the study). Only a few people initially adopt an innovation, such as online buying, but if they react favourably, the new practice is likely to spread. If e-commerce managers could identify those customers most likely to buy online, they could focus their marketing efforts on this small segment. By identifying the least innovative consumer might also gain insight into the reasons they hesitate to buy online and develop strategies to

ameliorate their objections. To identify internet innovators requires an easy to use method and the DSI meets these requirements. The statements were developed by modifying the scale developed by Goldsmith and Hofacker (1991) to suit the current study. As is reported later the scale developed was not as reliable as desired as measured by the alpha coefficients and could only offer a limited measure of innovativeness or the tendency of consumers to be among the first to try new products in a specific product field after they appear in the market place.

The items used to measure DSI were:

- Amongst my friends I seek out relatively less information from the internet
- Compared to my friends I use the internet for shopping more
- I will visit a new website, even if I have not heard of it
- In general my friends ask me about new products available on the internet.

The DSI has been repeatedly validated for both goods and services, especially to identify innovative internet consumers (Goldsmith, 2001a; Citrin et al. 2000). Szmigin and Carrigan (2001) used the DSI scale to study the travel services market. Similarly Litvin, Goh and Goldsmith (2001) use the DSI to measure vacation travel innovativeness of Singaporeans. Their research addresses the question of whether travel innovators have unique personality traits that marketers should target when promoting new vacation products. The DSI scale is a six item Likert scale using a five-point response format that contains three positively worded and three negatively worded items developed as a reliable and valid way to measure the extent to which a consumer is an innovator in a specific field (Goldsmith and Hofacker, 1991). However, previous studies have shown the DSI to be one-dimensional although internally consistent as might be expected through having a small number of items (Goldsmith, 1995; Goldsmith and Litvin, 1998; Goldsmith et al., 1998). Citrin et al., (2000) modified the DSI for online shopping in a survey of undergraduate student

shopping habits. They too found the scale to be uni-dimensional and to have adequate internal consistency (alpha co-efficient = 0.85). However, in this study the alpha coefficient was low at 0.45.

Therefore an alternative scale was developed. An ***attitude toward innovation*** was a self developed measure and had 10 items, and the opinion of respondents was measured on a 7 point Likert scale (1 = very strongly disagree, 7 = very strongly agree). Attitude toward innovation had the following statements:

- Change is more important than continuity
- What is old is retrograde
- One needs more courage for innovation
- He who dares succeeds
- Technological progress brings social improvements for people
- Technological progress helps only a few people
- Cultural heritage is more important than technological improvements
- Internet is essential in my life
- Internet has saved me lots of time
- It would be difficult to imagine life without internet.

However, the alpha coefficient for this scale also was not as high as desired being 0.55.

Pre-test of measurement instrument

Even though many of the items of measurement were taken or modified from previous research and literature, it was thought prudent to validate the items in the scales. A pre-test of the survey questionnaire was conducted in several stages. An initial survey of randomly selected visitors was conducted to determine the various themes and items to be tested. This survey was conducted at the Auckland Viaduct Visitors Information Centre. Visitors who approached the centre for information were

approached and asked if they were visitors and if they would agree to do the survey. Then a self completed survey instrument was developed based on lessons learnt from the pilot study and involved re-wording the items.

This questionnaire was then circulated amongst friends. The family and friends were immigrants to New Zealand and hence visitors at one point in time and representing the target market Tourism New Zealand is targeting. Participants were asked to provide feedback regarding layout, wording, and ease of understanding of the measurement items. The feedback was then taken into account in further revision of the questionnaire. This revised questionnaire was pre-tested using a convenience sample of visitors with friends and family and colleagues at work.

Reliability and validity

Reliability deals with how consistently similar measures will produce similar results (Rosenthal and Rosnow, 1984). Reliability has two dimensions: repeatability and internal consistency. The dimension of internal consistency refers to the ability of a scale item to correlate with other items of the same scale that are intended to measure the same construct. The adequacy of the individual items and the composites are assessed by measures of reliability and validity. The reliability of the measurement instrument is assessed by Cronbach's alpha reliability. Cronbach's alpha measures how well a set of items (or variables) measures a single unidimensional latent construct. When data have a multidimensional structure, Cronbach's alpha will usually be low. Technically speaking, Cronbach's alpha is not a statistical test - it is a coefficient of reliability (or consistency).

Cronbach's alpha can be written as a function of the number of test items AND the average inter-correlation among the items. A Cronbach's alpha and composite

reliability score of 0.60 or higher indicate that the measurement scale that is used to measure a construct is reliable (Nunnally, 1967).

Validity refers to the accuracy of a measurement, or how well the measurement taps what it is designed to measure (Rosenthal and Rosnow, 1984). There are several different types of validity to consider: face/content validity (i.e. agreement among professionals that the scale is measuring what it is supposed to measure), criterion validity (i.e. degree of correspondence between a measure and a criterion variable, usually measured by their correlation) and construct validity (i.e. ability of a measure to confirm a network of related hypotheses generated from a theory based on constructs) (Bollen 1989; Zikmund, 1997).

The face validity of any questionnaire may be assessed by a number of means including congruence with an academic literature, expert opinion, and consistency with extensions of existing models and prima facie agreement with observations, both formal and informal. In this instance significant dependence was placed upon existent literature, both in the tourism and wider marketing and information technology journals. Additionally, pilot studies were undertaken.

It has been noted that while some scales sustained acceptable Cronbach's alpha coefficients, others were less successful. It is not clear why this should be; some possible reasons include a) the development of response sets where respondents failed to note movements from positive to negative wording, and vice-versa, b) more likely, that given differential and incomplete degrees of knowledge about the internet within the sample, inconsistencies of perceptions and attitudes are indeed a genuine reflection of those differential levels of familiarity with and knowledge of IT and the internet.

Consequently, as is explored later in the thesis, differences between respondents might be expected based not only on the presence or absence of knowledge, but also on degrees of ‘confused knowledge’.

CHAPTER 5: Results and Analysis

Descriptive Results

Internet usage is a very common and effective means of communication. However, it is diverse and different to other media and means of communication. Internet usage happens to be the central theme of this study and data was collected from a sample of visitors to New Zealand.

In structuring the analysis, the rationale adopted was:

1. Initial descriptions of the overall mean scores with specific mention of various independent variables including the demographics. The purpose of this section is to simply provide an overview of the results derived from the total sample.
2. The second section presents the results of analyzing the internet usage patterns and ownership of electronic durables is presented.
3. Third the attitudinal statements and scores are tabulated plus a factor analysis of the attitudinal statements. The attitudinal statements included in the questionnaire were based on theoretical constructs as previously described. It was thought important to assess whether these constructs or dimensions could be elicited from the current sample. While a brief comment is included with the tables, a detailed discussion will be made in the concluding chapter.
4. Assuming the attitudinal scales possess reliability and validity; this section will comprise a cluster analysis derived primarily from the motivational scale. An application of cluster analysis to other scales will also be briefly discussed.

5. The clusters are analyzed by internet usage which is the mainstay of the study. This will determine the various adopter groups and provide an idea of how these groups use the internet.
6. The last section looks at the various scores reported by the sample on holiday purchase patterns.

These sections will then be followed by a further short section which provides results derived from an attempt to use items from the scale in a model derived from a modification of the TAM using structural equation modelling. For reasons pertaining to sample size, a full model was not possible, and this has been explained when detailing the model analysis in that section. The next section will then present a summary of the statistical analysis by returning to the 9 hypotheses, derived from the aims and objectives of this study, previously listed to assess whether support exists for the postulated relationships. Finally a last section will discuss the theoretical and management implications of the study.

Descriptive Data – the sample

Profile of the respondents

The demographic characteristics of age, gender, educational qualifications, nationality, and area they lived in, were included in the study to provide a descriptive profile of the respondents and see if they had any effect in the way they used the internet.

Age and gender

In the survey respondents were asked their age broken into specific age groups and whether they were male or female. As evidenced in Table 1, the majority of respondents

were between 19 and 35 years of age representing almost 70 percent of the sample. A similar pattern for both males and females can be observed. It is also observed that the age group of 26 – 35 years of age was slightly more numerous than other age groups for both genders. Even though there is an age group of 'under 19' nobody under 17 years of age were asked to complete the survey.

Table 1: Sample characteristics – age and gender distribution

	Gender			
Age	Male	Female	Total	% of Sample
Under 19	7	8	15	2.9
19 – 25	101	68	169	32.94
26 – 35	121	71	192	37.43
36 – 45	47	21	68	13.26
46 – 55	43	8	51	9.94
56 and above	14	4	18	3.50
Total	333	180	513	

The respondents in the 36 – 55 years of age bracket formed the third largest group of respondents (23 percent of the total sample), with 26 – 35 years age being the highest (37 percent of the total sample).

From the table above it can be seen that there are more males than females. Moreover, with reference to the age distribution within the sample, the chi-squared test showed that X^2 = 14.73 (df = 5, p<0.01), which indicates that the distribution is statistically significant. The non random distributions of the data are thought due to two factors a) the dominance of the 19 – 35 years old groups and b) the bias toward the male sex. With

reference to gender and in particular, older females are under represented in the sample probably because, (a) they were travelling with a partner and left it to the partner to answer to the questions, (b) refused to participate because they had not used the internet or computers and hence felt uncomfortable, even though the number of female users of the internet has been growing in the recent past and lastly (c) there were not many females in the population approached that went through Christchurch visiting New Zealand on the flights surveyed. Why this was the case is not known. However, the International Visitor Survey for the year ending March 2006 indicates there were about 100,000 more males who visited New Zealand compared to females. In 2004 there were 70,000 more males who visited New Zealand compared to females.

However, the demographic profile is in line with previous research done by Bonn et al., (1998). A sample of 6724 travellers during their trip to the Tampa Bay region of Florida were interviewed and they found that people who use the internet to search for travel related information were less than 45 years of age. Vincent (2003) in his study in Hong Kong had similar results for his sample of 1114 respondents. This finding does imply that a bias exists within the sample, and that is that it is biased toward those who felt comfortable with internet usage; and consequently such a bias reduces the validity of the sample in terms of attempting comparisons between users and non-users.

As can be seen in Table 2, 12 percent were school leavers, 16 percent were trade school qualified. There were also more female respondents who had a masters degree (17 percent) compared to 12.5 percent of males.

Table 2: Demographic characteristics – education and gender

			Gender		Total
Education			Male	Female	
	School leaver	Count	40	23	63
		% within gender	12.2%	12.9%	12.4%
	Vocational/Technical/Trade School	Count	55	27	82
		% within gender	16.7%	15.2%	16.2%
	University Graduate	Count	181	98	279
		% within gender	55.0%	55.1%	55.0%
	Masters degree	Count	41	30	71
		% within Gender	12.5%	16.9%	14.0%
	Doctoral degree	Count	12	0	12
		% within gender	3.6%	0	2.4%
Total		Count	329	178	507
		% within gender	100.0%	100.0%	100.0%

It was found that 55 percent of both males and females possessed undergraduate qualifications while a further 16 percent of both genders also had postgraduate qualifications. Of the males, 3.6 percent had doctoral degrees while no females in the sample had this qualification. This bias toward university qualified visitors arises from (a) visitor profile to New Zealand and (b) possible bias in sample collection. Unfortunately

the International Visitors Survey by New Zealand Tourism Council does not ask a similar question for a suitable comparison.

The results of previous attempts to profile internet users' characteristics suggest that internet users tend to hold higher educational degrees (Card et al., 2003; Vincent 2003; Mattila, Karjaluoto, and Pento, 2003; Furr, Bonn, and Hausmann 1997; Schonland and Williams, 1996).

Even though the questionnaire asked for specific country of origin, on analysis, it was decided to aggregate the numbers to a continent level, because there were some small numbers for individual countries and aggregation represented no major shift. The Australians and UK residents represented the majority of respondents, being respectively 29 percent and 32 percent. When looking at the visitors to New Zealand statistics published by the New Zealand Government, it seems that the sample is similar in terms of distribution amongst the various nationalities in terms of capturing key groups of overseas visitors, i.e. Australia, America and UK (http://www.trcnz.govt.nz). The statistics from the TRCNZ website has been included in the appendix as Table 54.

Table 3: Sample demographics – national groupings

Region	Number	Percent of sample	Cumulative percent
North American	44	8.5	8.6
Australian	150	29.0	38.0
U.K.	168	32.5	71.0
West European	61	11.8	82.9
Indian	15	2.9	85.9
African	20	3.9	89.8
Asian	32	6.2	96.1
South American	3	0.6	96.7
Chinese	8	1.5	98.2
East European	4	0.8	99.0
South Pacific	5	1.0	100.0
Total	510	98.6	
Missing responses	7	1.4	
Total	517	100	

While the sample is under representative of Asians in the sample, this can be attributed to the fact that many visitors from Asia refused to participate, some had a problem understanding the language, and greater disposition of these nationalities to utilise package tours where itinerary is fixed and there is an incomplete representation of New Zealand product on the internet in Asian languages.

Also, when we examining the report from AC Nielsen (2002) on 'interactive visitors', the figures reported have similar distribution pattern amongst nationalities with US, UK and Australia forming the top three countries represented. It has to be noted that this AC

Nielsen sample was over represented with Singaporean visitors and that weighting procedures were conducted with reference to IVS data.

Based on statistics of internet penetration (www.internetworldstats.com) and the data of demographics by national groupings tabulated above, it appears there is greater accessibility of internet technologies to these nations (Americas, UK and Australia). It can also be suggested that people from these countries have the knowledge and capacity to use it.

While it must be concluded that the sample possesses a bias toward English speaking nations, younger people and educationally higher qualified people, the sample in fact fits closely the profile of the 'interactive visitor' described by Tourism New Zealand as its desired high yield visitor profile. Consequently, while problems exist for comparative analysis, overall it can be argued that the findings have some relevance considering Tourism New Zealand marketing strategies.

Internet usage patterns

The questionnaire contained a question about when respondents started using the internet. From this a new variable – internet experience – was calculated based on the number of years experience possessed by the respondents. The years were aggregated into four groups of less than 5 years, 6-10 years, 11 – 15 years and more than 15 years. This was done since the number of people in less than one year was very few (20). A complete frequency is shown in Appendix as Table 55.

Table 4: Internet experience

		Frequency	Percent	Cumulative percent
	Less than 5 years experience	177	34.2	34.2
	6-10 years experience	303	58.6	92.8
	11 - 15 years experience	31	6.0	98.8
	More than 15 years experience	6	1.2	100.0
	Total	517	100.0	

The majority of respondents had between 6 – 10 years of experience, and Table 4 shows that the majority of this sample of visitors to New Zealand had used the internet. As noted, 58 % of respondents had used the internet for between 6 – 10 years, 6% for 11 – 15 years and about 34 % of respondents had less than 5 years or less of experience of internet usage (including no experience as well which accounts for 2.3 %).

Table 5: Internet experience by gender

Length of experience (years)		Gender		Total
		Male	Female	
	Less than 5 years experience	103	73	176
	6-10 years experience	204	96	300
	11 - 15 years experience	23	8	31
	More than 15 years experience	3	3	6
Total		333	180	513

When internet experience is analyzed by gender (see Table 5), it is found that males are more familiar and have used the internet for longer periods than females, but not at statistically significant levels (X^2=4.80; *df*= 4, *p*=0.31). There were not many who had not used the internet, but this could be a sampling error as well. With reference to non internet users being under represented in the sample, this is probably because, a) once they realised that it was related to internet usage, they refused or b) genuinely the number of visitors to New Zealand are knowledgeable users of the internet. Given the educational profile of the sample, there may well be some truth in the latter observation.

Cross tabulating educational attainment with years experience of internet usage produced the following results.

Table 6: Internet experience by education levels

		Internet experience			Total
		Less than 5 years	6 – 10 years	More than 10 years	
Education	School leaver	35	23	6	64
	Vocational/Technical/Trade School	32	43	7	82
	University graduate	97	169	14	280
	Masters degree	12	53	6	71
	Doctoral degree	0	8	4	12
Total		176	296	37	509

Of university graduates, about 65 percent reported more than 5 years experience with the internet and about 35 percent reported less than 5 years experience. It can be suggested that the higher educated may have used the internet longer due to length of education and occupying jobs where computer usage is common, while higher incomes similarly provide a higher likelihood of home usage of internet. The data is statistically significant ($X^2 = 42.07$; $df = 8$; $p < 0.0001$), although this reflects the range of qualification achieved.

As described in Table 7, age also is an important factor in the usage of internet. Respondents aged between 19 and 35 were the people who said they had between 6 – 10 years of experience, indicating that many have been using the internet since their early teenage years (where $X^2 = 20.19$ $df = 6$; and $p < 0.003$).

Table 7: Internet experience by age

Years of internet experience	**Age groups**				**Total**
	19 – 25	26 – 35	36 - 45	46 - 55	
Less Than 5 years	63	63	20	31	177
6 - 10 years	116	114	43	28	301
More than 10 years	5	15	6	11	37
Total	184	192	69	70	515

When internet experience was analyzed by age, there were cells with zero members or less than 5. Hence, these were aggregated and one category of greater than 10 years was created. With reference to the distribution of internet experience across age groups, as already noted the Chi-squared test showed $X^2 = 20.19$ ($df = 6$, $p < 0.003$); which indicates that the distribution is statistically significant. Research by Card et al. (2003) reported similar results. In their study, in the US to provide a description of shoppers and non-shoppers and the types of travel products purchased online, they found that more than 80% of their sample had more than 3 years of internet experience.

Table 8: Internet experience by usage per week

Internet usage		Internet experience			Total
		Less than 5 years	6 - 10 years	More than 10 years	
	Several times in a day	55	152	25	232
	Once a day	44	68	8	120
	A few times a week	61	72	1	134
	Once or less than once a month	17	11	3	31
Total		177	303	37	517

Table 8, indicates the pattern of internet usage by time spent on the net. The table indicates that 43 percent of the people with more than 5 years experience tend to use the internet several times in a day and another 23 percent people use it at least once a day. This implies that an increase in usage leads to growing confidence and it is suggested that people subsequently develop a sense of ease and comfort with the internet. The distribution within the sample is statistically significant as the Chi-squared test shows X^2 = 48.06 (df=15, p< 0.0001), although it should be noted that 2 cells have less than 5 respondents.

The data suggest that frequency of internet usage is higher among nearly half of the surveyed users and it is suggested this frequency of use probably leads them toward online shopping and travel planning activities. Morrison et al. (2001) found in their study that the amount of time spent online was strongly related to the probability of being a repeat booker.

Another question of importance for this study is how much travel planning respondents undertake using the internet. The question pertains to their current trip and Table 9 indicates that more than 50 percent of the respondents have used the internet to plan 50 percent or more of their travel. Even though DMOs are not direct sales agents, they could act as a portal and hence the above statistics should encourage Destination Marketing Organizations that plan to include online sales on their websites. About 31 percent of the respondents said they searched for information over the internet, but used a travel agent to complete the booking. As a representative sample these are potential adopters of internet for purchase. A very small minority of respondents (17 percent) never used the internet for travel planning. The chi-squared test results also indicate that gender is not a determinant of travel planning behaviour and internet usage.

Table 9: How much of travel planning did you do through the internet?

Travel planning through the internet?		Gender		Total
		Male	Female	
	100 % of your travel planning was done on the internet	19	13	32
	Most or around 75 %	64	37	101
	About 50 %	87	39	126
	Gathered information, but booked through a travel agent	99	61	160
	None	59	26	85
Total		328	176	504

Note: $X^2 = 2.89$, $df = 4$, $p = 0.58$

Online travel booking is a growing convenience (Vincent, 2003) for business class passengers and working professionals. Its attractive features like timely information, online secure payment options and effective time management makes online ticketing and planning increasingly attractive to people. The table clearly indicates the higher usage of the internet for travel planning among male gender group while opening up possibilities for those 31% users who would want to book the tickets online instead of travel agents.

It is observed from Table 10, that the majority of Australians and UK respondents in this sample have used the internet to do travel planning. About 51 percent of the total sample has indicated that they planned 50 percent or more of their travel and of these 67 percent (or 34 percent of the total sample size of 501) are from Australia or UK.

Table 10: Travel planning through internet by nationality

Regions		How much of travel planning did you do through the internet?					Total
		100 % of your travel planning was done on the internet	Most or around 75 %	About 50 %	Gathered information, but booked through a travel agent	None	
	North American	2	10	10	13	9	44
	Australian	17	31	32	39	28	147
	U.K.	10	34	50	58	13	165
	West European	1	14	17	20	10	62
	Indian	1	1	5	4	4	15
	African	1	5	2	4	7	19
	Asian	0	3	7	15	6	31
	Others	0	4	3	7	8	22
Total		32(6.34%)	102(20.2 %)	126(24.95%)	160(31.68%)	85(16.83%)	505

The internet usage trend seems to be comparatively higher in UK than other regions as evident by the tabular presentation of travel planning through internet. The power of

internet has become even more apparent in the last decade as travel consumers – including corporate buyers – discovered new ways to find lower prices and in the online context, to experience the convenience of shopping 24/7 from the luxury of one's own computer or home (Swaminathan et al., 1999). The added features of online travel planning also encourages the traveller to use the internet to complete their travel package, to obtain information about hotel booking, dine out options, special needs assistance, destination details, route maps and discounts on early booking on various online tourism products and services. The frequent flyer program (FFP) is also another attractive option for professionals and businessmen (Suzuki, 2002; Suzuki and Walter, 2001; Mason and Barker, 1996). Morrison et al. (2001) also found that membership of FFP greatly contributed to predicting the probability of being repeat bookers. All of this shows how some of the programs affect consumers wanting to use the Internet for travel booking.

Travel planning, when analysed by the usage rates (Table 11), reveals a pattern similar to that above – namely 30 percent of the sample use the internet several times in a day and have booked 50 percent or more of their travel through the internet. This suggests that they are comfortable with their perceived ease of use of the internet which is high. Indeed 40 percent of the sample indicates daily use of the internet.

Table 11: Travel planning through internet – by usage of internet

Travel planning done through the internet?		Internet usage				Total
		Several Times in a Day	Once a Day	A few times a week	Once or Less than once a month	
	All of the 100 % of your travel planning was done on the internet	26	5	1	0	32
	Most or around 75 %	51	22	29	0	102
	About 50 %	71	26	29	0	126
	Gathered information, but booked through a travel agent	48	35	60	18	161
	None	32	27	15	12	86
Total		228	115	134	30	507

On the other hand, Table 11 indicates that levels of internet usage are related to a predisposition to use the internet for travel planning. As might be expected a positive relationship exists between usage familiarity and internet bookings for travel planning (X^2= 87.8, *df*=20, *p*<0.001).

Table 12: Usage patterns of the internet at work and home

		On average how many hours a week at work do you use the internet?	On average how many hours a week at home do you use the internet?
Number	Valid	468	495
	Missing responses	49	22
Mean		6.54	6.58
Median		4.00	5.00
Mode		5.00	5.00
Std. Deviation		7.61	7.48
Skew ness		2.14	2.35
Kurtosis		5.27	6.27
Minimum		.00	.00
Maximum		40.00	40.00

Table 12 above shows usage patterns of internet at work and home and suggests slightly higher number of users at home than during working hours. What are the reasons that account for this? One could be ease of accessibility of internet facility at home and the user's high level of motivation to use the internet at home during their spare hours. The initial analysis of which age groups use internet indicated that those of 20 – 35 years of age are frequent internet users. It is this group of people who are also degree holders. Hence, it can be suggested that, due to restrictions on using internet for personal use during working hours, home time internet use is relatively high. However, measures like mean, median, mode, deviation calculations etc differ little between internet use at home and work. Therefore, it appears that respondents are using the internet approximately 9 to

13 hours per week, more or less equally divided between home and work. However, the standard deviation is quite high when compared to the means.

Table 13: Means of communication used regularly in daily life

Item	Number	Percent of Sample
Fax	136	23.6
Telephone (land line)	457	88.4
Mobile Phone	451	87.2
E-mail	477	92.3
Chat room	0	
Surface Mail	0	
Courier	0	

Comparing use of the internet with other forms of communication, it was found that around 92% of the sample favoured email as their regular means of communication. This is followed by telephone use 88% and mobile phones 87%. Understanding who makes a regular use of an email facility can be further enhanced by examining the type of electronic items and accessories respondents possess. Information technology advancement has opened various sources of affordable and convenient means of communication and because of their user friendly and accessible nature, users become easily familiar with such communication means with no technical assistance and training.

Today cellular phones provide travellers with both portability and connectivity which provides up-to-date, accessible information (Buhalis and Maria, 2002; Scharl, Dickinger, and Murphy, 2005).The implications of the next generation mobile and wireless technologies in the travel and tourism sector are very important (Corigliano and Baggio, 2004). An increase in customers using mobile devices, will lead to new customers

generating a value added virtuous cycle. These ideas are supported by a variety of predictions, most of them base on the sales figures of mobile phones (Durlacher, 1999, 2001). State tourism offices need to work closely with many other partners to provide tourist information in both printed and electronic formats. Cellular phones are becoming very common and as the results mentioned above show, many of the respondents use them in their daily life. Travel offices need to orient their information sources to cellular phones.

Although there has been research on the internet, covering social aspects of users compared to non-users (Katz and Rice, 2002), only quite recently has attention been given to mobile phone users. Mobile phone adoption appears to be on the increase.

Table 14: Home ownership of electronics

Item	Number	Percent of Sample
Voicemail or answering machine	156	30.2
Fax machine	131	25.3
Composite machine (fax, scanner, copier and printer)	135	26.1
Video game console	205	39.7
Stereo system or CD player	454	87.8
Computer including DVD and CD player	458	88.6
Video recorder	372	72.0
DVD/home theatre system	309	59.8
Video camera/digital camera	318	61.5
Personal digital assistant (PDA)	44	8.5

Table 14 illustrates the levels of home ownership of electronics items and computer systems (including DVD and CD player). Of the sample almost 89% own computers and 88 % own a stereo system or CD player. Early predictions about the adoption and use of

personal computers in homes are quickly proving to be false (Venkatesh and Davis, 1996) as it is becoming a necessity, rather than a luxury. Increasingly, PCs powered by the ability to deliver internet services are being touted as an innovation. Adoption and diffusion of information technologies have been studied extensively in information systems (IS) research at the individual level (Agarwal and Prasad, 1998). In the late 1990s the level of diffusion of home PCs which was estimated to be approximately 33 – 37 % (Kraut 1996; Kraut et al. 1996) would therefore include innovators, early adopters, and part of the early majority.

In terms of popularity the video recorder comes next at 72% of home appliance ownership. It can also be observed that electronic items like fax machine, voice mail or answering machine and composite machines (fax, scanner, copier and printer) are among the least preferred and used electronics.

Use of technology must take into consideration the use of other technologies. This idea was proposed and tested in a study by Vitalari et al, (1985). An argument made in this connection is that given limited time, use of one technology usually takes away time from use of other technologies, thus limiting the level of diffusion within the adopting unit. On the other hand, as Shugan (1980) has shown, the cognitive effort required to accumulate knowledge decreases and thus leads to acquisition of related products. This is particularly true of information technologies because different systems are capable of being used in conjunction with others. As hypothesized, based on data presented in the above table, it is logical to conclude that households with computers are more likely to adopt new technologies such as digital cameras, video consoles etc.

Table 15: Sources of search on the internet

	N	Mean	Std. Deviation
Internet advertisements	513	1.5595	1.01592
Direct emails from marketers of products	512	1.6875	1.09616
Internet search engines (like Yahoo, Google, Alta Vista)	512	5.4199	1.71486
Hyperlinks on pages you visit	513	3.7310	1.93189

Consumers use various sources to get information from the Internet. Some of the sources mentioned in the pilot study were included and consumers were clear about the distinctions. In the questionnaire a distinction is made between search engines and Internet advertisements. Internet advertisements are those that appear on any website and one has to click on them to get more details, while the search engine is where the consumer enters search words to get results. Table 15 above tabulates the sources of search. Internet search engines seem to be the most popular amongst the respondents of this sample, followed by the hyperlinks found on pages visited.

The Table 16 indicates that age is not a determinant of use of these internet facilities listed, although those over 56 years are less frequent users of search engines but at statistically significant levels. It is thought that occupational and study needs of the younger age groups might account for the data.

Table 16: Sources of search by age

		N	Mean
Internet advertisements	Under 19	15	1.2667
	19 – 25	167	1.7246
	26 – 35	192	1.5052
	36 – 45	69	1.4638
	46 – 55	51	1.5882
	56 – 65	16	1.1250
	66 – 75	2	1.5000
	Total	512	1.5605
Direct emails from marketers of products	Under 19	15	1.3333
	19 – 25	167	1.7665
	26 – 35	192	1.5833
	36 – 45	69	1.8261
	46 – 55	51	1.5294
	56 – 65	15	2.4667
	66 – 75	2	1.5000
	Total	511	1.6888
Internet search engines (like Yahoo, Google, Alta Vista)	Under 19	15	5.9333
	19 – 25	167	5.3533
	26 – 35	192	5.5885
	36 – 45	69	5.3913
	46 – 55	51	5.2157
	56 – 65	15	4.6000
	66 – 75	2	3.0000
	Total	511	5.4188
Hyperlinks on pages you visit	Under 19	15	1.8000
	19 – 25	167	3.5749
	26 – 35	192	4.0104
	36 – 45	69	3.6957
	46 – 55	51	3.6863
	56 – 65	15	4.3333
	66 – 75	3	2.6667
	Total	512	3.7305

Overall, it can be seen that the mean internet usage is comparatively high, and familiarity with many other electronic consumer durables is also high. However, the standard deviation of usage is such that categorisations of higher and less high users exist within the sample. Of the sample, for example, while 44.9 percent use the internet several times a day, almost one-third use it less than a few times a week. Similarly 62 respondents reported not using the internet at work at all, while 35 do not use the internet at home. A total of 173 respondents used the internet less than 2 hours per week at home. Given these differential usage patterns within the sample it was expected that attitudinal differences would exist, thereby permitting the identification of different psychographic profile that would have different usage patterns pertaining to internet and travel planning.

The next section now proceeds to an analysis of the items measuring attitudinal variables.

Attitudinal Analysis

Introduction

In the questionnaire there were many statements regarding the respondents' attitude to innovation. The respondents were asked to rate these statements on a Likert type scale of 1 to 7, with a non response option as described previously.

There were statements that asked how the respondent felt towards using the internet for certain tasks like collecting information, internet searches, and some general statements to show how they felt towards innovation. For example the statement 'He who dares succeeds' would indicate the risk taking ability of the respondent based on their response. Many of the statements are cognitive characteristics that emphasize a person's knowledge structure and information seeking and processing style. Some statements sought to

capture a person's innate disposition towards a particular task. Although it might be argued that the formation of these characteristics can be influenced by learning and environmental factors, generally it can be said that a person is 'born to be a risk taker'. It is worth mentioning here that some of the individual characteristics addressed in this study find their counterparts in the innovation adoption literature. Davis et al. (1989) suggest that the external variables (including personality, demographic) impact on the intention to use a technology only through belief and attitude. The statements in Table 20 cover topics like attitude toward innovation, self efficacy, use innovativeness and one item on internet based information search. The items on Use innovativeness were adopted and modified from Price and Ridgeway (1983).

Table 17 below indicates attitude of respondents towards the internet. The scores also indicate a high degree of confidence in handling complex searches, finding solutions, and a wish to learn new skills. It is of interest, however, that there is low levels of agreement with the statement that 'what is old is retrograde' (mean = 3.52). Again, however, it is worth noting the values of the standard deviations. Thus, for example, even on the item 'I know I can handle complex internet searches', 74 respondents disagreed with the statement to varying degrees (14.4 percent of the sample). The overall distribution of individual items is also of interest. Thus the skew and kurtosis scores on the item 'I find I can manage to solve difficult problems' indicates both a wide variance of response and a 'peaked' response (Kurtosis score).

Table 17: Attitudes toward innovation

	No.	Mean	Std Dev	Skew	Kurtosis
I search for information on the internet for different projects	496	5.58	1.11	-0.625	0.13
If I am in trouble I can usually think of a solution	494	5.17	1.26	-0.821	1.2
I avoid confrontations on the net	426	5.09	1.41	-0.493	-0.01
I know I can handle complex internet searches	496	5.06	1.38	-0.398	-0.3
He who dares succeeds	471	5.01	1.15	-0.377	0.68
I find that I can manage to solve difficult problems	515	4.97	1.54	-1.392	2.7
One needs more courage for innovation	475	4.82	1.15	-0.502	0.79
Technological progress bring social improvements for people	481	4.77	1.29	-0.199	0.04
I am creative with computers	491	4.69	1.38	-0.091	-0.41
Change is more important than continuity	463	4.54	1.36	-0.109	-0.03
I am curious how the internet works	475	4.54	1.42	-0.443	-0.18
Cultural heritage is more important than technological improvements	474	4.23	1.28	0.211	0.24
If something is complicated I do not bother trying it	475	3.55	1.60	0.294	-0.69
Technological progress helps only a few people	484	3.54	1.28	0.213	-0.09
What is old is retrograde	429	3.52	1.13	0.062	0.76
I am a slow learner	479	2.90	1.51	0.847	0.41
I avoid learning new skills, especially when they look difficult	476	2.64	1.46	0.902	0.58

Table 18 below details the responses to the attitudinal statements categorised by gender. It can be observed that there is not much of a difference between the genders' response, and only the item 'I am creative with computers' indicated a statistically significant difference with males scoring 4.62 and females 4.22 ($t= 257$, $p\sim 0.01$).

Table 18: Attitudinal analysis by gender

	Male	Female	T- Test	Prob
I find that I can manage to solve difficult problems if I try hard enough	5.00	4.92	0.66	0.513
I know I can handle complex internet searches	4.96	4.71	1.64	0.102
If I am in trouble I can usually think of a solution	5.00	4.89	0.72	0.105
I avoid confrontations on the net	4.04	4.53	-2.31	0.021
If something is complicated I do not bother trying it	3.25	3.36	-0.69	0.49
I am a slow learner	2.79	2.51	1.87	0.062
I avoid learning new skills, especially when they look difficult	2.52	2.28	1.61	0.108
Change is more important than continuity	4.16	3.97	1.13	0.258
What is old is retrograde	3.04	2.82	1.45	0.148
One needs more courage for innovation	4.58	4.24	2.22	0.027
He who dares succeeds	4.66	4.51	0.92	0.360
Technological progress brings social improvements for people	4.52	4.37	0.980	0.328
Technological progress helps only a few people	3.26	3.43	-1.23	.221
Cultural heritage is more important than technological improvements	3.82	4.13	-2.01	0.045
I am curious how the internet works	4.24	4.06	1.07	0.287
I search for information on the internet for different projects	5.31	5.48	-1.22	0.222
I am creative with computers	4.62	4.22	2.57	0.010

Table 19: Attitudinal analysis by age

		N	Mean	Std. Deviation	F ratio	Prob
I find that I can manage to solve difficult problems	19 - 25	177	5.3559	1.11950	2.46	0.062
	26 - 35	185	5.1189	1.14537		
	36 - 45	69	4.9565	1.26532		
	46 - 55	60	5.2000	1.00507		
	Total	491	5.1914	1.14286		
I know I can handle complex internet searches	19 - 25	177	5.1921	1.46060	0.90	0.440
	26 - 35	188	4.9840	1.36604		
	36 - 45	67	4.9403	1.31288		
	46 - 55	62	5.0323	1.27996		
	Total	494	5.0587	1.38325		
If I am in trouble I can usually think of a solution	19 - 25	178	5.2528	1.40946	1.01	0.380
	26 - 35	188	5.0904	1.18697		
	36 - 45	67	5.0299	1.15431		
	46 - 55	59	5.3051	1.08682		
	Total	492	5.1667	1.25743		
I avoid confrontations on the net	19 - 25	164	5.0671	1.51123	3.63	0.013
	26 - 35	153	4.8889	1.27504		
	36 - 45	56	5.2500	1.35177		
	46 - 55	51	5.6078	1.44331		
	Total	424	5.0920	1.41372		
I search for information on the internet for different projects	19 - 25	182	5.8132	1.13617	6.91	0.000
	26 - 35	186	5.5806	1.04827		
	36 - 45	66	5.2727	.96946		
	46 - 55	60	5.2000	1.21850		
	Total	494	5.5789	1.11273		
I am creative with computers	19 - 25	179	5.0335	1.39783	6.36	0.000
	26 - 35	184	4.5109	1.36702		
	36 - 45	66	4.3333	1.36250		
	46 - 55	60	4.6833	1.22808		
	Total	489	4.6994	1.38405		

Age was a statistically significant factor in the case of 6 attitudinal statements. Those under the age of 25 years were more likely to see themselves as creative with the use of

computers, those aged 36 to 45 years were less likely to learn new skills if they appeared difficult (perhaps because of time constraints); interestingly it was the youngest age group that was more likely to avoid confrontation on the net. However, examination of the data tends to show higher degrees of similarity between age groups rather than difference, and even where statistically significant differences occur, absolute differences in mean scores are not wholly great and rarely over 0.5 in total. Generally it appears that age is a subtle, but not overwhelming determinant of the attitude variation. A complete table indicating the scores for each of the attitudinal statements is included in the appendix Table 3.

The attitudinal statements were analysed to see if socio-demographic variables and educational attainment were determinants. Table 20 shows only those items where educational attainment seemingly generates difference in attitude. This is the case for 2 items, yet again the absolute differences tend to be small.

Table 20: Attitudinal analysis by education

		N	Mean	Std. Deviation	f	sig
I am curious how the internet works	School leaver	57	4.7544	1.10649	2.43	0.047
	Vocational/Technical/ Trade School	74	4.7432	1.21701		
	University graduate	260	4.4577	1.51509		
	Masters degree	66	4.2879	1.30990		
	Doctoral degree	11	5.3636	1.56670		
	Total	468	4.5363	1.40843		
I search for information on the internet for different projects	School leaver	55	5.6000	.95452	2.66	0.032
	Vocational/Technical/ Trade School	76	5.4868	1.11347		
	University graduate	275	5.4945	1.17570		
	Masters degree	71	5.8451	.98049		
	Doctoral degree	12	6.2500	.75378		
	Total	489	5.5746	1.11576		

The higher educated indicate greater confidence in handling complex searches, tend to disagree more about being a slow learner (but overall mean scores on this item is low) and tend to show more curiosity on how internet works. However, as for age, the differences are not overly great; indicating again that while of some significance, educational attainment is not a wholly satisfactory determinant of attitude as measured by these items.

The attitudes of the respondents of this sample towards the internet are tabulated below in Table 21. It seems that most of the respondents seem to be comfortable using the internet as evidenced by the mean scores. However, again it is of interest to examine standard deviations and distribution score. For example, with reference to the item 'the biggest problem with the internet is being able to find information I am looking for', the mean score indicates that is not generally a problem. However, the standard deviation indicates a third of the sample would express quite strong agreement with the statement. Examining the frequency scores shows that indeed 36 percent of the sample (n=188) express varying degrees of agreement with the statement. Indeed, 73 respondents expressed 'strongly agree' or 'very strongly agree' with this item. Again, therefore, it was concluded that there existed good reason to assume different psychographic profiles might exist within the dataset.

Table 21: Attitudes toward the internet

	N	Mean	Std. Deviation
Learning to use the internet would be easy for me	471	5.51	1.30
I would find it easy to use the internet to do what I want to do	496	5.47	1.14
It is easier to get information from the internet	499	5.44	1.21
It would be easy for me to become skilful at using the internet	491	5.39	1.23
I can find information on the internet easily	507	5.39	1.13
I am an experienced internet user	502	5.28	1.37
The internet has saved me lots of time	500	5.10	1.47
I know quite well how the internet works	494	5.05	1.33
It would be difficult to imagine life without the internet	501	4.61	1.79
The biggest problem with the internet is encountering links that don't work.	489	4.47	1.42
The internet is as essential in my life as any other thing	493	4.42	1.67
The biggest problem with the internet is being able to find the information I am looking for	504	3.87	1.57
The biggest problem with the internet is not being able to find the pages I have visited earlier	503	3.31	1.45
The biggest problem with the internet is not being able to determine where I am.	492	3.00	1.36

As can be observed from Table 22 below, the difference in mean scores for attitudes towards the internet between genders is again minimal. The lowest mean score reported is on the statement ‘The biggest problem with the internet is not being able to determine where I am’. This is arguably related to the individual’s browser efficacy and browser knowledge. To some extent it can also be attributed to the design of the web site and its navigational capabilities. These are issues not raised in this study and are something that needs to be addressed in any future study.

Table 22: Gender attitude toward problems on the internet

	Male	Female	T- Test	Prob
The biggest problem with the internet is being able to find the information I am looking for	3.92	3.53	2.50	0.013
The biggest problem with the internet is not being able to find the pages I have visited earlier	3.24	3.21	0.26	0.797
The biggest problem with the internet is not being able to determine where I am.	2.94	2.71	1.66	0.097
The biggest problem with the internet is not being able to determine where I am.	4.22	4.31	-0.59	0.553
Learning to use the internet would be easy for me	5.00	5.14	-0.77	0.440
I would find it easy to use the internet to do what I want to do	5.19	5.38	-1.34	0.181
I can find information on the internet easily	5.24	5.45	-1.77	0.077
It would be easy for me to become skilful at using the internet	5.13	5.22	-0.60	0.551
I am an experienced internet user	5.16	5.15	0.05	0.961
I know quite well how the internet works	4.95	4.71	1.59	0.112
The internet is as essential in my life as any other thing	4.26	4.22	0.24	0.810
The internet has saved me lots of times	4.98	4.93	0.31	0.755
It would be difficult to imagine life without the internet	4.46	4.53	-0.41	-0.072
It is easier to get information from the internet	5.29	5.27	0.16	0.021

Table 23 looks at how age might affect the attitude towards internet. As evidenced, most people seem to be comfortable and find it easy to use the internet. It is interesting to note how even the respondents in the higher age bracket mention that they would find it easy to learn how to use the internet. Nonetheless, with reference to the above discussion, it is older people who tend to have most difficulty in finding information they want, or revisit past pages, and who tend to assess themselves as less experienced internet users. Yet again, however, while inter-age differences undoubtedly exist, intra-age group differences also exist. For example, while for the item 'I can find information on the

internet easily' the age-group 46 – 55 years score significantly lower than other age groups, still 70 percent agree with the statement; indeed 11.8 percent agree 'very strongly'. It is suggested that socio-demographic variables within this sample are of muted importance and that psychographic profiling based on attributes will be important and independent variables of net and travel usage. A detailed analysis is provided in the appendix as Table 4 for every statement about the internet.

Table 23: Attitude toward internet by age

Learning to use the internet would be easy for me	19 - 25	169	5.7751	4.935	0.002
	26 - 35	174	5.4828		
	36 - 45	67	5.2388		
	46 - 55	59	5.1525		
	Total	469	5.5117		
I would find it easy to use the internet to do what I want to do	19 - 25	178	5.6910	5.213	0.001
	26 - 35	184	5.4457		
	36 - 45	68	5.1912		
	46 - 55	64	5.1719		
	Total	494	5.4636		
I can find information on the internet easily	19 - 25	183	5.6503	5.493	0.001
	26 - 35	190	5.3053		
	36 - 45	69	5.2029		
	46 - 55	63	5.1270		
	Total	505	5.3941		

The data for educational attainment and attitude is shown in Table 24 for the items where significant differences are found. All the data point in the direction that higher educational attainment is associated with greater confidence and self perceived expertise

Table 24: Attitude toward internet by education

		N	Mean	F ratio	Prob.
Learning to use the internet would be easy for me	School leaver	50	5.5600	4.256	0.002
	Vocational/Technical/ Trade School	78	5.2179		
	University graduate	259	5.4826		
	Masters degree	65	5.7077		
	Doctoral degree	12	6.7500		
	Total	464	5.5108		
I would find it easy to use the internet to do what I want to do	School leaver	59	5.5763	5.301	0.000
	Vocational/Technical/ Trade School	79	5.1013		
	University graduate	269	5.4461		
	Masters degree	70	5.6429		
	Doctoral degree	12	6.5000		
	Total	489	5.4601		
I am an experienced internet user	School leaver	57	5.1754	4.566	0.001
	Vocational/Technical/ Trade School	81	5.1111		
	University graduate	276	5.2138		
	Masters degree	70	5.6286		
	Doctoral degree	12	6.5833		
	Total	496	5.2843		
The internet has saved me lots of time	School leaver	60	5.1500	5.803	0.000
	Vocational/Technical/ Trade School	81	4.5802		
	University graduate	273	5.0916		
	Masters degree	68	5.5882		
	Doctoral degree	12	6.0000		
	Total	494	5.1053		
It would be difficult to imagine life without the internet	School leaver	59	5.0508	2.790	0.026
	Vocational/Technical/ Trade School	81	4.4444		
	University graduate	273	4.4322		
	Masters degree	70	5.0000		
	Doctoral degree	12	5.0000		
	Total	495	4.6020		

and in that sense it implies a relationship might exist between potential psychographic profiling arising from cluster analysis and educational attainment. Given that education is designed to generate attitudinal and subsequent behavioural change, this potential relationship is not unexpected and will need to be assessed.

Table 25: Internet Vacation Planning and searches

	N	Mean	Std. Deviation
Using internet helps me plan better vacations	486	4.95	1.47
I like the idea of online shopping	490	4.38	1.70
Defining search on the internet is complicated	490	3.61	1.45
Internet searches are time consuming	497	4.12	1.57
I search for vacation destinations on the internet	477	4.48	1.70
I find buying over the internet is more fun than buying in a store	434	2.94	1.49
I enjoy buying over the internet	448	3.68	1.65

With reference to shopping behaviours, Table 25 indicates that the use of the internet for vacation planning attracted the highest mean score of 4.95. In fact 190 of the 486 who responded to this item (36.8 percent) agreed ‘strongly’ or ‘very strongly’ that this was the case compared to 13.6 percent who expressed disagreement with the item. It can be noted that the item ‘I search for vacation destinations on the internet’ was the second highest scoring item (with 140 respondents agreeing ‘strongly’ or ‘very strongly’). However, potential constraints or challenges for destination marketing organisations are also highlighted. There is some agreement that internet searches are time consuming.

Additionally, in general, there is little agreement that buying over the internet is fun when compared to in-store buying. This implies that internet purchases of holidays or travel arrangements over the net are functional in nature, and there may be problems in arousing affective feelings for what is, arguably, essentially an experiential product based on intangibility. This may well represent a challenge to destination marketing organisations. In clichéd marketing terms, the website has to be designed to sell the 'sizzle' as well as the 'sausage'.

Attitudinal analysis

It has been suggested that socio-demographic variables such as gender, age and educational attainment have but a moderate influence on internet usage and this on use of internet for booking holidays. Thus far the analysis has been of one variable at a time. Might there be a cumulative effect?

The data are of a nature where determinants of internet usage are being measured by ordinal data; i.e. Likert type scales measuring internet usage and holiday purchasing. The latter were converted to nominal data by creating three categories high, (scores 6 and 7), medium (scores 4 and 5) and low (scores 1 to 3). Multinomial logistic regression analysis is appropriate as a technique for nominal or categorical data. For the dichotomous dependent item, 'have you purchased tourism related services over the internet?' the Cox and Snell coefficient of determination was 0.04 (i.e. changes in gender, age and educational attainment would only create a 4 percent change in tourism internet purchasing); and only 69.6 percent of cases were accurately forecast. Of the socio-demographic variables only education had any significance. Recoding the item 'to what extent did you use the internet to gather travel related information' generated a Cox and

Snell coefficient of determination of 0.09 with again only education having any significance. Similar results were found with similar measures.

Consequently it was decided to examine more carefully that attitudinal data in the belief that such data were largely independent of age, income, gender and educational attainment.

Factor Analysis

Factor analysis is used to identify latent variables which contribute to the common variance in a set of measures. Factor analysis is a statistical approach that is used to analyze interrelationships among large number of variables and to explain these variables in terms of their common underlying dimensions (factors). It is a statistical approach to condense the information contained in a number of original variables into smaller set of dimensions (factors) with minimum loss of information (Hair et al., 1998).

As previously noted the study draws upon innovation diffusion theory and more recent conceptualisations of IT behaviour to examine differences among Rogers' (1995) adoption categories. Cognition has been widely studied in innovation literature. At a general level, cognitive style relates to the habitual ways an individual processes and utilizes information. Internet based information search can be defined as a consequence of a consumer's perception of internet related communication and advertising channels as possessing value and use. As far as innovative information search behaviour is concerned, Rogers (1995) suggested that an innovator would seek information not within their immediate social system but outside it. Hence, in order to get a classification of the sample based on Rogers' theory, the statements in Table 26 were chosen for a factor

analysis. This enables us to find the underlying attitudinal groups and later do a cluster analysis if the exploratory factor analysis is found to be valid based on an assumption that respondents will have different scores on the attitudinal dimensions (factors).

Given the dataset there are at least four ways of conducting a factor analysis, namely:

a) Conduct the analysis for only those respondents who answered all of the questions;
b) Attribute the mean score to those cells where there is a missing item and then conduct the analysis;
c) Count the value attributed to the missing item as a valid response and include it in the analysis;
d) Remove items that have 'low' values.

Underlying each of these techniques, is that an order exists that is discernable to and independent of the researcher. In short, it is quite possible to 'impose' an order on the data that might not really exist. In short the researcher using statistical data may be making value judgments just as much as the qualitative researcher who uses textually based material and who engages in interpretative exercises. The advantage of the modern computer is that the researcher can undertake all of these exercises and arrive at a judgment as to which is the most appropriate solution – but that raises issues as to what is the most 'appropriate'. Fortunately, in this instance, all four approaches generated answers that, while not identical, nonetheless possessed high degrees of commonality. Option (b) listed above has been selected and this is justified by each of the items generally being answered by at least 90 percent of the respondents, by similar standard deviations existing and by the commonality of results from different approaches. The

method used was principal components with varimax rotation with Kaiser Normalization, an orthogonal approach that assumes that the factor is uncorrelated.

A total of six factors emerged 'accounting' for 59.58 percent of the total variance when using varimax rotation with a cut off point of eigenvalues being in excess of 1.00. This is shown in Table 26, and it will be noted that the final factor comprises of one item only; namely 'I avoid confrontations on the net'. Generally this would be excluded from analysis as representing an 'outlier' item, but it is here included to indicate more clearly the nature of the item.

Table 26: Factor analysis of attitudinal statements

	Component					
	1	2	3	4	5	6
I know I can handle complex internet searches	**.758**	-.150	-.014	-.135	-.071	.181
If I am in trouble I can usually think of a solution	**.744**	-.068	.084	.072	.001	.006
I find that I can manage to solve difficult problems	**.664**	-.038	.197	.063	.007	.026
I am creative with computers	**.654**	-.219	-.095	-.152	.176	-.152
I search for information on the internet for different projects	**.438**	-.324	.073	-.317	-.269	.167
I avoid learning new skills, especially when they look difficult	-.129	**.813**	.060	.078	.001	-.023
I am a slow learner	-.058	**.777**	-.033	.084	-.052	-.054
If something is complicated I do not bother trying it	-.252	**.646**	-.011	-.125	.140	.116
He who dares succeeds	.049	-.059	**.784**	-.040	.065	.089
One needs more courage for innovation	.062	.097	**.782**	-.046	-.134	-.098
Cultural heritage is more important than technological improvements	-.101	-.069	.073	**.814**	.039	.068
Technological progress helps only a few people	.136	.226	-.283	**.534**	-.133	.035
Technological progress bring social improvements for people	.232	.054	.382	-.441	.360	.156
I am curious how the internet works	.351	.134	.208	-.074	**-.625**	-.095
What is old is retrograde	.115	.282	.018	-.093	**.625**	-.243
Change is more important than continuity	.231	-.087	.420	-.111	**.500**	.041
I avoid confrontations on the net	.081	.019	.014	.047	-.055	**.938**

Another reason is that excluding the item created a four factor solution that combined factors three and four, and it was felt that the distribution reported in the six factor solution has a conceptual validity. There were six factors.

Factor One

This factor related to confidence in using the internet, and comprised the items 'I know I can handle complex internet searches', 'If I am in trouble I can usually think of a solution', 'I find that I can manage to solve difficult problems', 'I am creative with computers', and 'I search for information on the internet for different projects'. This factor accounted for 19.42 percent of the variance, had an eigenvalue of 3.30 and an alpha coefficient of 0.76.

Factor Two

This factor seemed to indicate problem avoidance, containing as it did the three items 'I avoid learning new skills, especially when they look difficult', 'I am a slow learner', and 'If something is complicated I do not bother trying it'. The factor accounted for 11.8 percent of the variance and possessed an eigenvalue of 2.01. The alpha coefficient is 0.70.

Factor Three

This factor comprised two attitudinal items, namely 'He who dares succeeds' and 'one needs more courage for innovation', which items relate to the risk aspects of adoption model. In this instance the eigenvalue was 1.49, the alpha coefficient equalled 0.59 and accounted for 8.78 percent of variance.

Factor Four

This factor comprised of attitudes towards attitudes relating to the broad social context, namely 'Cultural heritage is more important than technological improvements', 'Technological progress helps only a few people' and 'Technological progress bring

social improvements for people'. The eigenvalue was 1.29; the alpha coefficient, -0.38 and the factor 'explained' 7.57 percent of variance.

Factor Five

The factor was composed of three items, namely 'I am curious how the internet works', 'what is old is retrograde' and 'Change is more important than continuity'. In this instance the eigenvalue was 1.02, the alpha coefficient, 0.07 and the factor accounted for 6.03 percent of variance. It should be noted the first item is negatively related to the remaining two items, which, however can be considered problematical with reference to the item 'change is more important than continuity'. The item 'I am curious how the internet works' correlates poorly with the other two items (r=0.14 and 0.13) and hence the low alpha coefficient is unsurprising.

Factor Six

This last factor existed of just one item, 'I avoid confrontations on the net'. The eigenvalue was 1.01 and the factor accounted for 5.97 percent of variance.

It is notable that while the correlations between the items and the factors to which they are allocated would be considered relatively strong (other than that mentioned) as demonstrated by the loadings, the reliability measures in factors three, four and five are weak. In this respect it should also be noted that the Kaiser-Meyer-Olkin test statistic was 0.697, which while just acceptable falls far short of the 0.80 level normally assessed as being 'meritorious'. The Bartlett test of Sphericity was 1260.29 ($p<0.001$) which is, however, an acceptable measure of sampling adequacy. The low KMO and reliability measures are possible partly explicable by the negative loadings of some items.

It might also be questioned, given the nature of the factors, whether orthogonal factor analysis is wholly substantiated, and so a separate test, direct oblimin factor analysis, an oblique method that permits interdependence between factors, was run. This produced a four factor solution which combined factors four and five into one, took the item 'I am curious about how the internet works' as a separate factor, but loaded almost as highly on factor one which equated to factor one of the orthogonal method.

In short although the items were based on previous research and statistically generated clear factors, the results fell short of the usual desired criteria. However, the clear emergence of factors did indicate that value existed in attempting to develop clusters from the scale. A six fold cluster seemed to produce an optimal assessment with, however, one group comprising of just 16 respondents. Closer examination of this group, which tended to produce low scores and have high non-response patterns, led to the rejection of this group as being primarily composed of outliers. This left five clusters that comprised 104, 148, 35, 82 and 115 respondents respectively. The clusters might be described as follows.

Cluster One: Moderately confident (moderate users)

This group tends to display moderate levels of confidence in that they had relatively high scores on items expressing concerns about learning skills and confidence. Equally they did not display high scores relating to perceived self-assessment levels of skill and ability to work through problems. The group comprised 104 respondents.

Cluster Two: The technologically confident (competent users)

This group is opposite to the first, being very confident in their skills and equally believing that change is more important than continuity and that technological progress favours society. This group numbered 148.

Cluster Three: The competent but more traditional (traditional users)

This group, numbering just 35 respondents, expressed the same degree of technological competence as cluster two, but disagree with cluster two on items pertaining to the role of change and the benefits of technology.

Cluster Four: The information searchers

This cluster of 82 respondents scores highly only on one item, which relates to the use of the internet for information search. They, however, score higher than cluster one on their perceived confidence of using the internet, and score lower in items pertaining to slow learning. They are arguably more proficient than the first cluster, and are more optimistic about technological and change social input than the first group. The scores, however, suggest a mentality that primarily sees the internet as a tool primarily for information search rather than possibly something more intrinsic to their lives.

Cluster Five: The ambiguous users

This group comprises 116 respondents and display higher scores on items about daring and succeeding, but display less confidence in undertaking complex searches than other groups, and tend to have high scores on the item about not bothering to try something if it is complicated, although also scoring relatively high on the item 'I find that I can manage to solve difficult problems'. The data are shown in Table 27. The cluster possessed on a

priori validity in the sense that the statistical patterns could be explained by reference to a constructed psychographic profile of attitude. The issue was, did the clusters possess any predictive capability or relate in any way to behaviour?

The first step was to assess to what degree these differences were independent of socio-demographics and could account for differences in usage patterns.

Using the chi-squared test it was found that gender was not a differentiating variable for cluster membership (X^2=8.91, *df*=4, *p*=0.063). Similarly age was not a factor (X^2=22.23, *df*=24, *p*=0.566). Education, however, was again shown to be distinguishing feature, in that X^2=37.28, *df*=16, *p*=0.002; implying that cluster membership was 'informed' by educational attainment.

Table 27: Final clusters

	Moderate users	Competent users	Traditional users	Information searchers	Ambiguous users
I find that I can manage to solve difficult problems	4.33	5.71	5.54	4.77	5.17
I know I can handle complex internet searches	3.99	5.91	5.54	4.52	4.92
If I am in trouble I can usually think of a solution	4.18	5.87	5.89	4.67	5.06
I avoid confrontations on the net	4.69	5.16	6.03	*.80*	5.06
If something is complicated I do not bother trying it	3.74	2.30	3.34	3.10	4.63
I am a slow learner	3.86	1.92	1.86	2.27	3.51
I avoid learning new skills, especially when they look difficult	3.32	1.64	1.60	1.99	3.52
Change is more important than continuity	3.71	5.16	1.00	3.30	4.87
What is old is retrograde	3.11	3.09	1.26	2.55	3.83
One needs more courage for innovation	4.36	4.61	4.97	3.78	5.23
He who dares succeeds	4.73	5.25	4.03	3.24	5.27
Technological progress bring social improvements for people	3.85	5.11	4.89	3.51	5.26
Technological progress helps only a few people	4.21	3.33	3.20	3.16	3.22
Cultural heritage is more important than technological improvements	4.64	4.03	3.14	3.66	3.99
I am curious how the internet works	4.02	4.77	3.77	3.95	4.29
I search for information on the internet for different projects	4.50	6.09	5.69	5.49	5.53
I am creative with computers	3.82	5.60	3.83	4.39	4.27

The next step was to assess the relationship between clusters and internet usage.

Table 28: Cluster membership and internet usage

		N	Mean	Std. Deviation	F-ratio
On average how many hours a week at work do you use the internet?	Moderate users	94	4.26	5.42	9.25***
	Competent users	142	8.97	9.98	
	Traditional users	30	10.40	7.33	
	Information searchers	75	5.34	5.31	
	Ambiguous users	104	5.28	6.17	
	Total	445	6.60	7.71	
On average how many hours a week at home do you use the internet?	Moderate users	101	5.45	6.89	5.83***
	Competent users	142	8.60	8.85	
	Traditional users	35	8.57	8.00	
	Information searchers	79	4.38	4.50	
	Ambiguous users	110	6.02	7.06	
	Total	467	6.60	7.51	

Note * = $p<0.05$, ** = $p<0.01$, ***=$p<0.001$

The clusters appear to have some significance with reference to usage rates of the internet, with clusters 2 and 3 (the technologically competent groups) having the highest usage rates at both work and at home and being almost twice as high as some other groups. It is also notable that the 'Information Seekers' tend to the lowest rates, providing therefore some support for the proposition that they tend to be instrumental users.

With reference to rates of ownership of electronic goods, cluster membership is not a significant matter in the case of fax, voicemail, stereo/CD player, and computer or composite machines. On the other hand, as shown in Table 29, cluster membership does have significance for the frequency of use of the internet for various activities as measured by ANOVA.

Table 29: Frequency of Internet usage for various activities

		N	Mean	Std. Deviation	F ratio
Frequency of use for					
Business	Moderate users	103	3.45	2.02	15.07***
	Competent users	145	5.10	2.11	
	Traditional users	34	5.88	1.66	
	Information searchers	80	4.83	2.04	
	Ambiguous users	115	4.08	2.18	
	Total	477	4.51	2.19	
Education	Moderate users	104	4.02	1.65	8.53***
	Competent users	147	5.09	1.58	
	Traditional users	34	4.52	1.94	
	Information searchers	80	4.45	1.66	
	Ambiguous users	114	4.07	1.74	
	Total	479	4.47	1.72	
Shopping	Moderate users	104	2.84	1.59	5.59***
	Competent users	146	3.60	1.64	
	Traditional users	35	3.45	1.44	
	Information searchers	81	2.74	1.44	
	Ambiguous users	115	3.24	1.64	
	Total	481	3.19	1.61	
Entertainment	Moderate users	104	3.41	1.98	8.79***
	Competent users	146	4.49	1.87	
	Traditional users	35	4.02	1.97	
	Information searchers	81	3.33	1.80	
	Ambiguous users	114	4.38	1.80	
	Total	480	4.00	1.94	
Communication with others by email	The Moderate users	104	5.65	1.56	6.38***
	Competent users	146	6.38	.91	
	Traditional users	35	6.31	1.07	
	Information searchers	82	5.69	1.75	
	Ambiguous users	114	5.85	1.39	
	Total	481	5.97	1.39	
Communication with others through chat rooms	Moderate users	104	1.84	1.32	7.34***
	Competent users	144	2.66	2.01	
	Traditional users	34	1.73	1.48	
	Information searchers	80	1.72	1.41	
	Ambiguous users	114	2.57	1.80	

	Total	476	2.23	1.74	
Gathering information for personal needs	Moderate users	104	4.30	1.63	13.28***
	Competent users	146	5.43	1.20	
	Traditional users	35	4.91	1.59	
	Information searchers	81	4.29	1.52	
	Ambiguous	115	4.77	1.29	
	Total	481	4.80	1.48	
Gathering vacation related information	Moderate users	103	3.92	1.57	13.12***
	Competent users	145	4.92	1.47	
	Traditional users	34	4.17	1.31	
	Information searchers	81	3.51	1.54	
	Ambiguous users	115	4.42	1.61	
	Total	478	4.29	1.60	
Playing games on the internet	Moderate users	104	1.82	1.35	7.81***
	Competent users	145	2.55	1.83	
	Traditional users	34	1.35	.77	
	Information searchers	79	1.68	1.13	
	Ambiguous users	115	2.34	1.82	
	Total	477	2.11	1.62	
Making travel bookings	Moderate users	104	3.56	1.64	10.65***
	Competent users	145	4.35	1.42	
	Traditional users	35	4.08	1.19	
	Information searchers	81	3.08	1.26	
	Ambiguous users	115	3.90	1.65	
	Total	480	3.84	1.55	

It can be seen that almost inevitably ‘competent’ and ‘traditional users’ have the highest scores while ‘ambiguous users’ tend to have the lowest (although this is not true in some instances, e.g. for shopping, entertainment and use of chat rooms – although in these instances scores tend to be low anyway).

The next step was to see if cluster membership had any relationship to length of internet usage.

Table 30: Cluster type and experience of internet usage

	Period commencing use of internet					Total
	Before and including 1990	1991 – 1994	1995 - 1998	1999 - 2002	2003 - present	
Moderate users	2	3	51	44	2	102
Competent users	4	20	98	24	0	146
Traditional users	2	3	20	9	0	34
Information searchers	3	10	48	17	3	81
Ambiguous users	2	5	56	50	1	114
	13	41	273	144	6	477

The table tests the relationship between cluster and year in which internet usage occurred. The above statistics relating to Table 30, using chi-squared test, are statistically significant with X^2=49.79, df=16, p<0.0001. It should be noted that 11 cells have less than 5 occurrences within them, which is a restriction upon assuming that the competent were significantly earlier adopters of new internet facilities. On the other hand the Likelihood Ratio of 51.0 is also significant at p<0.0001.

Also, by 1994 6.4 percent of the competent users commenced use of the internet before 1994 compared with 4.9 percent of the moderate users, and again by 1994 14.7 percent of the traditional users were internet users; 16 percent of information searchers were internet users; 6.2 percent of ambiguous users were internet users. By 1998 54.9 percent of the moderate were internet users; 83.5 percent of the competent were internet users; 71.5 percent of the traditional were internet users; 72.3 percent of information searchers were internet users; 55.3 percent of ambiguous users were internet users.

These figures fail to disprove a thesis that the competent users might be identified as the earlier adopters of the technology. On the other hand, age could be a factor given that early adoption is possibly associated with opportunity. This is tested subsequently in this chapter.

The Table 31 indicates the relationship between cluster types and level of education. Of the competent user category 78.4 percent had education of graduate level or above, compared to 65 percent of the moderate users, 87.9 percent of the traditional users, 68.3 percent of Information Searchers and 71.4 percent of ambiguous users.

Table 31: Cluster type and level of education

		Education					Total
		School leaver	Vocational/ Technical/Trade School	University Graduate	Master's degree	Doctoral Level	
	Moderate users	10	25	54	13	0	102
	Competent users	13	19	87	25	4	148
	Traditional users	3	1	16	10	3	33
	Information searchers	16	10	41	12	3	82
	Ambiguous users	13	19	69	10	1	112
		55	74	267	70	11	477

Note: X^2= 37.28, *df*=16, *p*=0.002

Cluster membership and age

As shown in Table 32 cluster membership is also independent of the age of the respondent in this sample. Reducing the age-groups in number as before to remove small cell sizes created different, but still non-significant results.

Table 32: Age and cluster number of cases

Age	Cluster Number of Case					Total
	Moderate users	Competent users	Traditional users	Information searchers	Ambiguous users	
Under 19	1	4	0	3	2	10
19 - 25	33	61	7	23	40	164
26 - 35	38	51	17	37	39	182
36 - 45	18	17	6	10	15	66
46 - 55	10	9	4	8	14	45
56 - 65	4	6	0	1	3	14
66 - 75	0	0	0	0	1	1
Total	104	148	34	82	114	482

Note: $X^2 = 22.22$, $df = 24$, $p=0.556$

Given that socio-demographic variables are not strongly related to the clusters it can be argued that the clusters represent viable constructs – but such validity needs to be tested by reference to other attitudinal statements. Table 33 indicates the first step in this process. It confirms the cluster analysis in many ways. For example, the item 'The biggest problem with the internet is being able to find the information I am looking for' is the one that attracts the highest score by the 'information seekers' while the two technically competent groups score the lowest on this item. A similar pattern is shown for the item 'The biggest problem with the internet is not being able to find the pages I have visited earlier'. On the other hand, for the item 'I can find information on the internet easily', the two competent groups score significantly higher than the other groups at significant levels as shown by the post-hoc Tukey test.

It should be noted that, using ANOVA, cluster membership appears to be a distinguishing variable in every instance. This is not true of gender. This was not found to be a distinguishing variable on the above items with the sole exception of the item 'The

biggest problem with the internet is being able to find the information I am looking for' where males scored 3.9 and females 3.5 (t=2.53, p=0.012). On the other hand, age tended to be a distinguishing item in most of the items, with those under 35 years tending to score the highest.

Table 33: Cluster groups Vs Problems with internet

Item	Cluster	N	Mean	Std. Deviation	F-ratio
The biggest problem with the internet is being able to find the information I am looking for	Moderate users	104	4.01	1.49	5.58***
	Competent users	148	3.50	1.73	
	Traditional users	35	3.37	1.53	
	Information searchers	82	4.43	1.65	
	Ambiguous users	115	3.89	1.43	
	Total	484	3.85	1.61	
The biggest problem with the internet is not being able to find the pages I have visited earlier	Moderate users	104	3.86	1.52	7.81***
	Competent users	148	2.93	1.43	
	Traditional users	35	2.71	1.38	
	Information searchers	82	3.12	1.45	
	Ambiguous users	115	3.37	1.47	
	Total	484	3.25	1.50	
I can find information on the internet easily	Moderate users	104	4.75	1.06	25.91***
	Competent users	148	6.02	1.03	
	Traditional users	35	5.88	0.83	
	Information searchers	82	5.00	1.21	
	Ambiguous users	115	5.24	1.18	
	Total	484	5.38	1.20	

The next stage was to move from the attitudinal to the behavioural. Did cluster membership predict behaviour? Table 34 tabulates the search patterns by clusters.

Table 34: Search sources by clusters

		N	Mean	F	Prob.
Internet advertisements	Moderate users	104	1.4038	3.36	0.010
	Competent users	148	1.7297		
	Traditional users	34	1.1765		
	Information searchers	82	1.5000		
	Ambiguous users	114	1.6930		
	Total	482	1.5726		
Direct emails from marketers of products	Moderate users	104	1.5962	2.23	0.070
	Competent users	148	1.7635		
	Traditional users	34	1.2941		
	Information searchers	82	1.6951		
	Ambiguous users	114	1.8772		
	Total	482	1.7095		
Internet search engines (like Yahoo, Google, Alta Vista)	Moderate users	104	5.0481	5.24	0.000
	Competent users	148	5.8716		
	Traditional users	34	5.5000		
	Information searchers	82	5.1341		
	Ambiguous users	114	5.6930		
	Total	482	5.5000		
Hyperlinks on pages you visit	Moderate users	104	3.1154	7.05	0.000
	Competent users	148	4.3243		
	Traditional users	34	3.5294		
	Information searchers	82	3.6585		
	Ambiguous users	114	4.0000		
	Total	482	3.8174		

As previously noted the internet search engines are the most popular followed by the hyperlinks on pages visited. Again, however, cluster membership is a discriminatory item. The technologically competent users score highest on the use of hyperlinks; while they also score the highest on the use of search engines.

This would be consistent with expectations. On the other hand, there are low scores for direct emails (spam) and all clusters are uniform in their low scores on this item.

The next stage was to link clusters with internet usage and shopping; including the purchase of holiday products. This is considered in the next section.

Holiday Purchase Pattern Analysis

This section analyses the data with specific reference to the purchase of products through the internet; initially generally and then with reference to holiday purchases. It first considers overall results, and subsequently briefly examines the data by a range of variables including cluster membership.

Overall results

In the questionnaire there were two questions related to internet purchases. Table 35 summarizes the data by gender. About 77 percent have responded by saying they have made purchases with males forming 65 percent of this sub-sample. Closer examination showed, however, that this was not statistically significant with $X^2 = 0.44$ ($df = 1$, $p = 0.835$). A similar analysis was undertaken with reference to age, as shown in Table 36.

Table 35: Purchases of services through internet by gender

		Have you bought / services through internet?		Total	%
		Yes	No		
Gender	Male	258	75	333	64.91
	Female	138	42	180	35.08
Total		396	117	513	

It can be observed that people between 19 and 35 make up the largest group of respondents that have bought goods or services off the internet, but 32 % of the respondents are in the 19 – 25 years age group and 37 % are in the 26 – 35 years group. However, in this instance the distribution of age within the sample is statistically significant, since the chi-squared test show that $X^2 = 23.57$ ($df = 5$, $p<0.0001$). As mentioned in earlier pages, the study by Card et al., (2003) showed that 40 -49 year age group had more internet shoppers. In this study though, the age group is much lower. It is the 19 – 35 age groups that seem to have bought services through the internet.

Table 36: Have you bought services through internet by age

		Have you bought/services through internet?		Total
		Yes	No	
Age	Under 19	9	6	15
	19 - 25	121	48	169
	26 - 35	165	27	192
	36 - 45	57	12	69
	46 - 55	35	16	51
	56 - 65	9	7	16
	66 - 75	1	2	3
Total		397	118	515

Following past practice the data were again examined for the role of education as shown in Table 37.

Overall it can be observed that it is the more educated respondents who show a higher disposition to buy goods or services through the internet (Mattila et al., 2003; Vincent, 2003). This could be because they are more comfortable in using the internet and use it more regularly, or that they have more opportunity to do so through earning higher incomes and having more access to the internet.

Table 37: Have you bought/services through internet by education

		Have you bought / services through internet?		Total
		Yes	No	
Education	School leaver	44	20	64
	Vocational / Technical / Trade School	55	27	82
	University Graduate	222	58	280
	Master's degree	59	12	71
	Doctoral Level	12	0	12
Total		392	117	509

Again the distribution is statistically significant with $X^2 = 12.93$ ($df=4$, $p=0.012$).

The next stage was to assess what was being purchased with reference to the tourism industry. Table 38 lists the various tourism services that the respondents in this sample have bought over the net. Airline tickets seem to the most popular, with 60 percent of the sample purchasing such tickets, followed closely by accommodation being booked by 57 percent of the sample. As per the study done by Morrison et al. (2001), if respondents booked travel products other than airline and accommodation on line, they were more likely to be repeat bookers. Specifically, their probability of booking travel on line more than once was found to be 18 percent greater. The data tabulated below seems to be in line with previous research by Card et al. (2003) where they reported similar groupings.

In their study airline tickets and accommodation formed the largest two groups as found in this study.

Table 38: Tourism related services purchased

Item	Purchasing	%	Not purchasing	%
Accommodation	296	57.3	220	42.7
Airline tickets	310	60.0	207	40.0
Booking car hire	148	28.7	368	71.3
Tickets for a tour from a tour company	71	13.7	446	86.3
Restaurant booking	22	4.3	495	95.7
Souvenirs	14	2.7	503	97.3
Travel Books	59	11.4	458	88.6
Any other item	1	0.1	517	99.9

Note: Frequencies represent multiple responses

While gender had no relation with the purchasing behaviour of the above items, in the case of accommodation, airline tickets and booked car hire, statistically significant relationships were found with age with X^2= 13.54 (p=0.004), X^2 =15.96 (p=0.001) and X^2 =16.57 (p=0.001) respectively. In the case of accommodation those being the most likely to book were those aged 26 to 35 with the younger age groups being under-represented in the internet usage cells. This pattern was also true in the items of airline tickets and car hire. This relationship may have something to do with greater business-related travel for those in the age group 26 to 35 years of age.

Table 39: Items booked online by age

		Age groups				Total
		Under 19	19 - 25	26 – 35	36 - 45	
Accommodation	Yes	6	83	126	35	250
	No	9	86	65	35	195
Airline Tickets	Yes	6	89	134	36	265
	No	9	80	58	34	181
Booked car hire	Yes	1	32	69	18	120
	No	14	137	123	51	325

Table 40: Travel planning through internet

	Frequency	Percent	Cumulative Percent
Not al all	68	13.5	13.5
Rarely	33	6.5	20.0
Sometimes	42	8.3	28.3
Quite Often	57	11.3	39.6
Often	117	23.2	62.8
Frequently	109	21.6	84.4
Very frequently	79	15.6	100.0

As previously noted, the sample tended to use the internet for purposes of travel planning. Table 41 shows the frequencies for the question 'To what extent did you use the internet to gather travel related information?' which was measured by a 7-point Likert type scale. It can be seen that just over 60 percent scored 5 or more. However, when asked 'How much of travel planning did you do through the internet?' only 6.3 percent (n=32) did 100 percent of their planning through the internet, about 20 percent reckoned they had done about three-quarters of their planning through the net and a further quarter about half of their planning. A gap therefore seems to exist between information collection and planning, with the latter being more specific.

Table 41: Travel planning through internet

		N	Mean	Std. Deviation
To what extent did you use the internet to gather travel related information?	Under 19	15	3.1333	1.80739
	19 – 25	166	4.6084	1.78809
	26 – 35	187	4.8877	1.82963
	36 – 45	68	3.7500	2.20836
	Total	436	4.5436	1.92871

Table 41 supports the earlier finding shown that those under the age of 35 tend to be the heavier user of the internet for gathering information, but interestingly enough it was those over the age of 36 who tended to use the net more for actual planning. This could be for a number of reasons, which were not explicitly asked in the study. However, by experience it can be reasoned that since this age group might have more disposable income, or access to broadband or travel more, they could be using the internet more for planning than age groups comparatively. At the time of data collection broadband access was limited and not available in New Zealand, hence specific questions relating to broadband were not asked. Various scenarios might explain this – younger people tending to perhaps to stay longer and be less time constrained might be one possible explanation, while the slightly older may be more time constrained and thus requiring a degree of greater certainty as to their travel patterns.

Table 42: Travel planning through internet – education

		N	Mean	Std. Deviation
To what extent did you use the internet to gather travel related information?	School leaver	62	3.8226	2.12344
	Vocational/Technical/ Trade School	77	4.0779	2.12607
	University graduate	276	4.6522	1.85924
	Master's degree	71	4.8169	1.76724
	Doctoral level	12	6.0833	1.24011
	Total	498	4.5181	1.95026

With reference to levels of educational attainment, the higher level of education is associated with greater searching for information, but this is not translated into actual planning, indicating a possibility for less instrumental information searching and possibly a search associated with the perceived intrinsic value of information on the part of the better educated. Other possible explanations that might be teased out in further research might be issues of life stages with the higher educated tending to be taking longer holidays between occupational changes, so that as before distinctions might be made between the more or less time constrained.

With reference to cluster groupings table 43 provides a clearer picture of the cluster groups and whether they have bought services through the internet. The technologically competent and traditionally competent groups appear to be the proportionately heavier users of the internet. However, of importance is that most respondents have used the internet to buy services. Nonetheless X^2=23.56 (df=4, p<0.0001) indicates that the usage rates are significantly biased toward these two groups.

Table 43: Usage of the internet to buy services by cluster membership

		Have you bought/ services through internet?		Total
		Yes	No	
	Moderate users	72	32	104
	Competent users	130	18	148
	Traditional users	34	1	35
	Information searchers	58	24	82
	Ambiguous users	90	25	115
Total		384	100	484

Table 44: Airline tickets purchases and cluster membership

Airline Tickets Purchase			Cluster Number of Case					Total
			Moderate users	Technologically competent users	Traditional competent users	Information searchers	Ambiguous users	
	Yes	Count	60	103	28	42	68	301
		Expected count	64.7	92.0	21.8	51.0	71.5	301.0
	No	Count	44	45	7	40	47	183
		Expected count	39.3	56.0	13.2	31.0	43.5	183.0
Total		Count	104	148	35	82	115	484

With reference to specific types of tourism related purchases, these were analysed in turn. Table 45 indicates that cluster membership could serve as a predictive variable in the purchase of airline tickets with the two competent groups being over-represented among those who used the internet for such deals (X^2=13.7, df=4, p=0.008). The following table (number 46) shows that the same relationship exists for the purchase of accommodation through the net (X^2=21.7, df=4, p<0.001).

Table 45: Accommodation by clusters

Accommodation			Cluster Number of Case					Total
			Moderate users	Competent users	Traditional users	Information searchers	Ambiguous users	
	Yes	Count	51	101	29	39	67	287
		Expected count	61.8	87.9	20.8	48.1	68.3	287.0
	No	Count	53	47	6	42	48	196
		Expected count	42.2	60.1	14.2	32.9	46.7	196.0
Total		Count	104	148	35	81	115	483

Of some interest is that while the same expected relationship occurred with booking tours with a tour company (X^2=12.3, df=4, p<0.015) the information seekers are also over-represented in the internet users, perhaps indicating a willingness to use the internet when there exists some higher degree of perceived safety in making a booking if a 'high street' name is associate with the web page. However, because this aspect was not considered in the initial research design, it remains speculative but it is a factor that future researchers may wish to consider. The issue of booking restaurants through the net did confirm the clustering in that only one group; the technologically confident used the net for this purpose to any extent. In this instance it was 10 percent of this cluster: no other cluster exceeded 4 percent of membership using the net in this way. Finally no statistically significant relationship held true for car hire.

Finally, in order to assess the significance of cluster membership as against socio-demographic variables, the Cox and Snell Pseudo Coefficient of Determination as calculated for given internet purchasing behaviours. The test was run first without cluster membership using age, gender and educational attainment, and then second adding cluster membership. The results are shown in Table 46. These indicate that:

a) the addition of cluster membership in each case improves the pseudo R^2 statistic;

b) that the most significant predictor is cluster membership;

c) the predicted variance is quite low – generally about 10 percent at best.

Table 46: Test of significance of cluster membership

Purchase Item	Cox and Snell (Socio-dem)	Best Predictor (prob)	Cox and Snell (incl cluster)	Best predictor (prob)
Services	0.060	Age (0.004)	0.11	Cluster (0.000)
Tourism related items	0.056	Education (0.008)	0.08	Cluster (0.001)
Airline tickets	0.044	Age (0.041)	0.07	Cluster (0.008)
Accommodation	0.051	Age (0.037)	0.08	Cluster (0.000)

This section of the thesis has shown that while socio-demographic variables have a limited predictive capability in determining internet usage, it is possible to devise cluster membership that distinguishes between sample respondents based on their attitudes towards internet usage. Second it was found that the addition of these psychographic profiles of cluster membership did quite significantly improve the coefficients of determination between a given purchasing behaviour as the dependent variable and the determining variables of socio-demographic and cluster membership, although the resultant values were still low. However, given that cluster membership was based upon items used to construct measures of technological adoption, it was now necessary to assess whether disaggregating those items when related to purchase behaviour could be undertaken to indicate support for the TAM approach. This is done in the next section – Model Analysis.

Model Analysis

Testing a modification of the technology acceptance model

Introduction to structural equation modelling

Structural equation modelling (SEM) is a statistical methodology that takes a hypothesis testing approach. There are two important aspects of this procedure, a) the causal processes under study are represented by a series of structural equations and b) these structural equations can be modelled pictorially to enable a clearer conceptualization of the theory under study.

SEM takes a confirmatory approach rather than an exploratory approach. Furthermore, it lends itself well to the analysis of data for inferential purposes by demanding that the inter-variable relations be specified as priori. SEM has become a popular methodology for non experimental research. Some basic concepts associated with the methodology are briefly reviewed before explaining the model analysis.

Latent variables and observed variables

SEM tests all hypothesized relationships simultaneously in a multivariate context and specifies the structural direct and indirect relationships among latent variables (Kline 1998).

As a first step the data were organized as a linear regression with the dependent variables being first the average frequency of use of the internet, and second the level of usage while at home. The independent variables were those relating to attitudes toward the internet, perceived usefulness and the other items listed in the chapter on questionnaire design. The purpose was to simply initially check which items had the highest beta

coefficients and the associated levels of probability. In the first instance the coefficient of determination was quite low at R^2=0.25, but in the second instance of home usage this rose to 0.48. Given that the first variable included work usage it was thought that the figures pertaining to home usage might be a better measure of adoption determinants.

Scanning the results for this second equation showed that the item 'what is old is retrograde' was negatively associated with usage with β=-0.128 and *p*=0.036. On the other hand 'cultural heritage is more important than technological improvements was positive at β=2.449 and *p*=0.015. This, at first sight, is possibly contrary to expectation, but alternative hypotheses can be suggested. Given the educational profile of the example, and tourism research that indicates interest in heritage sites is higher among the better educationally qualified (Kerstetter, Confer, and Graefe, 2001; Espelt and Benito, 2006), it is suggested that an appreciation of technology is not inconsistent with a wider appreciation of culture and heritage. The item 'I can find information on the internet easily' has β=0.232 and =0.005. Other items that appear to be significant at levels of *p*<0.05 are 'The internet is as essential in my life as any other thing', 'it is easier to get information from the internet', 'using the internet helps me plan better vacations', 'defining a search on the internet is complicated' (with a negative beta), 'I find buying over the internet is more fun than buying in a store', 'how concerned are you about security in relation to making a purchase over the internet' (with a negative beta), 'how concerned are you that the products/services will be as good as they appear in the internet', and 'I sometimes shop in stores for goods and then buy them over the internet'. The last few items are of interest in that they imply that one determinant of frequent use is confidence in the security of the system, while the last item possesses interest in that it

represents a reversal of what is thought is often the case – which is that people seek information from the net but subsequently make purchases in retail outlets. There was one further item 'how concerned are you that your personal information will be kept confidential' (at p=0.046) worth noting with a positive beta – indicating possibly that high usage rate is associated with awareness of this being an issue for internet users in spite of a comparative lack of concern over security issues.

While statistically it is recognized that this first analysis is 'crude' it does indicate that attitude toward shopping and confidence in security could be two key determinants of adoption.

Undertaking a structural equation model of the data proved onerous. A number of reasons dictated this. First, as Hair et al (1998) comment, structural equation modelling (SEM) shares three assumptions with other multivariate methods, namely independent observations, random sampling, and linear relationships. However, they go on to note that 'SEM is more sensitive to the distributional characteristics of the data, particularly … a strong kurtosis' (Hair et al, 1998: 601). As is not uncommon in the use of Likert type scales in the field of tourism, normal distribution is more notable by its absence rather than its presence. A number of factors can account for this, including generally high levels of satisfaction with a destination and, as in this possible instance, increasingly high levels of familiarity or habituation can shape attitudes. Previous chapters have shown that increased frequency of use of the internet is associated with higher scores on certain attitudinal attributes, and thus while correlations are high, they reflect in part high degrees of skew and kurtosis in partnering variables. Another reason that consumed considerable time was the rechecking of data sets with sub-samples of respondents.

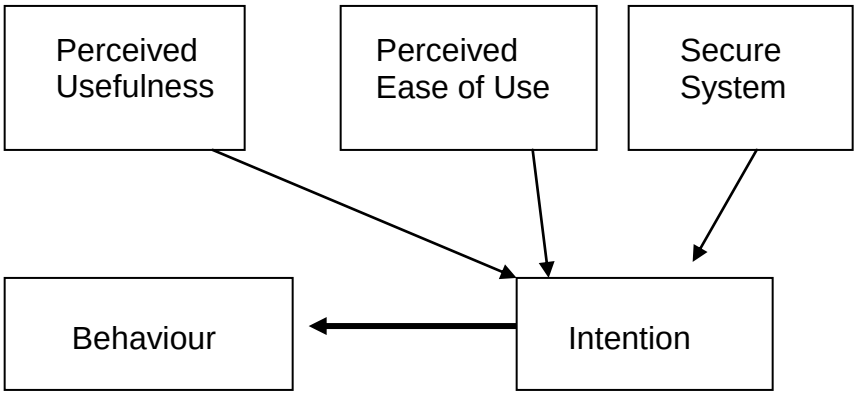
Hair et al (1998:604-605) pay specific attention to the size of sample that should be used in undertaking SEM. They note the importance of four factors that must be considered – (1) model specification, (2) model size, (3) departures from normality and (4) estimation procedure. If data violate assumptions of normality, there exists a need to increase the ratio of respondents to parameters, and they suggest a ratio of 15 respondents per parameter. They comment 'One approach is always to test a model with a sample size of 200, no matter what the original sample size was, because 200 is proposed as being the "critical sample size". If an asymptotically distribution-free estimation procedure is selected, the sample size requirements are markedly increased…' (Hair et al, 1998:605). After some assessments a model of 21 observed variables associated with 4 latent variables was defined as offering a combination consistent with the broad outlines of the Technology Acceptance Model and results that seemed promising. This requires at least 315 respondents on the stated ratios, but non-normal distributions were evident. Various combinations of data were analyzed, but such procedures are very susceptible to the argument that the researcher is engaged in a pattern of 'curve fitting' – that is manipulating data to fit a preconceived hypothesis rather than letting the data emerge 'naturally'. However, as will be noted, while high chi-square statistics were recorded, this in itself is not sufficient as under SEM conditions of non-normality tend to inflate chi-squared results and others tests are needed. By these standards it might be said that the model was not wholly supported as is discussed below.

In testing initial models and by the initial use of regression analysis as initially indicated, it became evident that some variables appeared to have little correlation with the expected overall thrust of internet adoption, while others were closely correlated with other

variables to the point of creating redundancy of definition. Trial and error moved the research toward the model indicated in Figure 6 and some time was spent on a slightly earlier version of this before it was realized that the variables 'defining search on the internet is complicated' and 'internet searches are time consuming' were poorly correlating with more positive attributes. This is to be expected but they in effect were becoming poor predictors of a behavioural outcome when the model began to use more positive attitudinal attributes.

The model thus was specified as comprising four latent variables with one being shaped by three of the unobserved variables. The list below indicates the variables used in the model formation followed by the variable label in brackets. Fig 6 shows the model being tested in a simplified form. As has been noted in the literature review and according to the analysis derived from the regression and alpha coefficients, key components of the model are perceived usefulness and perceived ease of use. What also emerged from the data are concerns about issues with security as discussed in the text.

Figure 1: Simple modified technology model



Latent variable - perceived usefulness

Observed items

The internet is as essential in my life as any other thing (essent)
The internet has saved me lots of time (saveme)
It would be difficult to imagine life without the internet (without)
It is easier to get information from the internet (easier)
Using the internet helps me plan better vacations (plan)

Latent variable – perceived ease of use

Observed items

I can find information on the internet easily (find)
It would be easy for me to become skilful at using the internet (skilful)
I am an experienced internet user (intuser)
I know quite well how the internet works (howwks)

Latent variable – security

Observed items

In general, how concerned are you about the security on the internet? (concern)
How concerned are you about security in relation to making a purchase over the internet (purchas)
How concerned are you that your personal information will be kept confidential? (confid)
How concerned are you that your credit card details will be kept secure? (credit)
How concerned are you that the products/services will be as good as they appear on the net (appear).
It is risky to buy over the internet (risky)

Latent variable – adoptive behaviour (behaviour)

Observed items

I like the idea of online shopping (online)
I search for vacation destinations on the internet (dests)

I find buying over the internet is more fun than buying in a store (fun)
I enjoy buying over the internet (enjoy)

The rationale of the model is that adoptive behaviour is expressed in a combination of behavioural and attitudinal aspects expressed by enjoyment of internet usage for general purchasing behaviour and searching for vacation destinations.

However, utilizing the analyses gained from the regression analysis a potential constraint on internet adoption might be thought to be concerns over safety and security and thus these are explicitly included as a latent variable that impacts upon adoptive behaviour. The literature previously reviewed also indicated that perceived usefulness and perceived ease of use are key determinants of adoptive behaviour and thus they too were incorporated into the model.

The model was set up using the graphics page of Amos 5 using the full set of respondents (n=517). It must be noted that a model was run using a random sample of 200 respondents as proposed by Hair et al (1998). As was expected from the commentary provided by Hair et al (1998) the chi-squared statistics was much larger at X^2=1664.7 (df=150, p<0.001) using the whole sample compared with X^2= 886.7, with the sample of 200. It has been noted that X^2 is larger with larger samples because of non-normality in distribution – but the decision to use this version was based upon slightly better results using other indices as described below.

The first stage is to check the standardized regression weights (correlations) between the items and latent variables, and these are noted below:

Latent variable - perceived usefulness

Observed items	
The internet is as essential in my life as any other thing (essent)	0.699
The internet has saved me lots of time (saveme)	0.686
It would be difficult to imagine life without the internet (without)	0.708
It is easier to get information from the internet (easier)	0.623
Using the internet helps me plan better vacations (plan)	0.597

Latent variable – perceived ease of use

Observed items	
I can find information on the internet easily (find)	0.725
It would be easy for me to become skilful at using the internet (skilful)	0.593
I am an experienced internet user (intuser)	0.874
I know quite well how the internet works (howwks)	0.819

Latent variable – security

Observed items	
In general, how concerned how you about the security on the internet? (concern)	0.853
How concerned are you about security in relation to making a purchase over the internet (purchas)	0.890
How concerned are you that your personal information will be kept confidential? (confid)	0.837
How concerned are you that your credit card details will be kept secure? (credit)	0.861
How concerned are you that the products/services will be as good as they appear on the net (appear).	0.723
It is risky to buy over the internet (risky)	0.449

Latent variable – adoptive behaviour (behaviour)

Observed items

I like the idea of online shopping (online)	0.856
I search for vacation destinations on the internet (dests)	0.645
I find buying over the internet is more fun than buying in a store (fun)	0.733
I enjoy buying over the internet (enjoy)	0.837
Adoptive Behaviour and Perceived Usefulness	0.910
Adoptive Behaviour and Perceived Ease of Use	-0.411
Adoptive Behaviour and Security	0.053

Hair et al (1998:6 60-611) provide a list of Goodness-of-Fit measures with indications of levels of acceptable fit. They note that the chi-squared statistic should be at least 178.71 but that the statistic itself is of marginal acceptance. Some of the reasons for this have been outlined above. The root mean square error of approximation (RMSEA) measures differences expected in populations as against samples, and the required criterion is that RMSEA <0.08. In this case the model has a RMSEA of 0.14 – effectively 0.06 too high. AMOS 5.0 produces a series of fit statistics. The first CMIN measures the minimum discrepancy and CMIN for this model is 1664.67. Citing Byrne the probability value associated with CMIN tests the extent to which the model specification is true, and thus one seeks a high probability. In this instance p=0.000, and thus represents an unlikely event and the model should be rejected. However, the sensitivity of the likelihood ratio tests to sample size is well known and tests based on chi-squared are suspect. In this case the normed fit index (NFI) is equal to 0.707 which is less than 0.2 from what are usually regarded 'good' fits. The CFI (Comparative Fit Index) which Bentler (1992) recommends as the fit index to use for testing models is 0.724 – again short of the suggested value of 0.9 proposed by Byrne (2001) and Hu and Bentler's (1999) 0.95.

In short, no matter which tests were scanned, the model, while in the predicted direction, tended to fall short of the criteria generally applied to test acceptability of a model. It can also be noted that bootstrapping the model resulted in little change in the results.

Table 47 provides data on the regression weights, standard errors and critical ratios. These help to explain the poor fit previously discussed, and a key issue here is the role of concern over security issues. It can be seen that regression coefficients between the latent variable 'security' and items relating to concerns of confidentiality and credit cards for example are statistically significant, but the relationship between those security concerns and the affective component of intention are far less strong and p=0.23. It is suggested that the comment made above are pertinent – that these are concerns but are mitigated through degrees of self knowledge about the internet, but the relationship is unclear. Some are so concerned that they are inhibited from purchasing behaviours, while others it is suggested, are so concerned that they utilise appropriate defences through anti-virus software and the like. Others of course may perceive no problem. The failure to consider this within the conceptualisation of risk has, it is thought, undermined the goodness of fit of the model, and indicates that conceptualisation created in a more generic manner like the TAM sometimes require much more specificity when applied with the context of interne and tourist purchases where different conceptualisations of risk and the need for security might apply.

What is also of interest is the negative weighting between some of the measures of the affective and different variables. It has already been suggested with the data that one cluster adopts a comparatively functionalist approach to its usage of the internet – and it is thought that this also reduces the goodness of fit of the model.

In many senses it is here suggested that discrepancy analysis of this type, that is, an explanation of why poor fit has arisen whereas the literature leads one to expect a contrary result, actually advances our understanding – at least in terms of identifying variables that require more specific measurement in future studies.

Table 47: Regression weights: Standard Errors and Critical Ratios

Label Name	Latent Variable	Estimate	S.E.	C.R.	Prob
Intention_Affec	← Perceived Use	3.300	.493	6.699	***
Intention_Affec	← Security	.044	.037	1.200	.230
Intention_Affec	← Ease of Use	-3.667	.640	-5.729	***
Behaviour	← Intention Affec	-.677	.056	-12.065	***
The internet is as essential in my life as any other thing	← Perceived Use	1.000			
The internet has saved me lots of time	← Perceived Use	.981	.061	15.987	***
It would be difficult to imagine life without the internet	← Perceived Use	1.016	.069	14.656	***
It is easier to get information from the internet	← Perceived Use	.823	.055	15.060	***
Using the internet helps me plan better vacations	← Perceived Use	.767	.066	11.631	***
I can find information on the internet easily	← Ease of Use	1.000			
It would be easy for me to become skilful at using the internet	← Ease of Use	.981	.078	12.566	***
I am an experienced internet user	← Ease of Use	1.438	.075	19.220	***
I know quite well how the internet works	← Ease of Use	1.340	.077	17.447	***
In general, how concerned are you about the security on the internet	← Security	1.000			
How concerned are you about security in relation to making a purchase over the internet	← Security	1.070	.052	20.393	***
How concerned are you that your personal information will be kept confidential	← Security	1.195	.056	21.376	***
How concerned are you that your credit card details will be kept secure	← Security	1.285	.058	22.308	***
I search for vacation destinations on the internet	← Adoptive Behaviour	1.083	.095	11.423	***
I find buying over the internet is more fun than buying in a store	← Adoptive Behaviour	.687	.077	80925	***
How concerned are you that the products/services will be as good as they appear on the net	← Security	1.090	.060	18.289	***
I like the idea of online shopping	← Adoptive Behaviour	1.000			
It is risky to buy over the internet	← Security	.556	.053	10.485	***
I enjoy buying over the internet	← Adoptive Behaviour	.901	.088	10.196	***
Degree	← Behaviour	1.000			
Extent	← Behaviour	-1.875	.132	-14.247	***

Summary

Previous chapters have indicated that in many respects the study has confirmed past findings that users of the internet tend to be younger people, with above average levels of education and income. In this respect a bias might be said to exist within the dataset inasmuch as it might be argued that long haul visitors to New Zealand tend to these characteristics, and thus in that sense the research possesses a limitation.

However, conceptually the research findings have lent some support to Rogers' theory of diffusion in that a cluster analysis found some evidence of varying degrees of internet usage based upon psychological profiles with the technologically confident having the highest usage rates. However, what was of interest was the finding that while the technologically capable one cluster possessed relative doubts about the ability of technology to secure an uniform advantage for all in society – which arguably represents a degree of sophistication in thinking not normally 'caught' in diffusion theory literature.

Against this background the model was replicated using structural equation modelling. The model provided mixed results in terms of support of the theory, with support being moderate at best. However, it should be noted that considerable difficulties exist in definition of terms and variables. These and other issues are discussed in the final chapter.

Chapter 6: Conclusions and Discussions

Summary and Conclusions

The research study concentrates on an innovation – internet shopping and how it is viewed by potential adopters upon its introduction into a social system with reference to purchasing tourism products in New Zealand. It is argued that this attitudinal difference can potentially lead to behavioural difference; some individuals will more readily accept an innovation while others may hesitate or even reject it. Both academic researchers and business practitioners are interested in finding out why there is this difference, and a body of literature has been devoted to identifying which contextual factors affect people's acceptance or rejection of innovations.

The findings can be summarised with reference to the initial hypotheses:

H_1: Demographics will be associated with the attitude toward online travel shopping.

H_{10}: No relationships will exist between demographics and the attitude toward online travel shopping

It was found that a relationship did exist between age and internet usage generally as shown in Table 7 where the relationship between age and usage was shown as $X^2 = 20.19$ ($df = 6$, $p < 0.003$). The relationship between age and on-line shopping, however, was a little more complex, being mediated by attitude formation as shown in Table 29 where distinct relationships were found between clusters and experience of on-line shopping, including gathering vaction information and making travel bookings.

H_2: Perceived level of internet knowledge will be positively associated with attitude toward online shopping for tourist product.

H_{20}: No relationship exists between perceived level of internet knowledge and on-line shopping for tourist product.

While internet knowledge was measured and most respondents seemed to be quite knowledgeable, there was a significant relationship between internet knowledge and attitude toward online shopping. This is observed through the SEM model analysis. As described later there is a large enough correlation between adoptive behaviour and the observed items with scores of 0.8, except the item 'I search for destinations over the internet' which seemed to have a score of 0.645, and in total it can be concluded that the proposed frameworks are not disproved.

H_3: Consumers perceived self-efficacy would be positively associated with online shopping for tourism product

H_{30}: No relationship exists between perceived self-efficacy and on-line shopping for tourism product

Here again it can be observed through the SEM model that there is a definite association between self-efficacy and online shopping. The score of 0.874 for the item 'I am an experienced internet user' is significant enough to suggest the existence of a positive relationship. Similarly the ability of cluster membership to increase Cox and Snell pseudo coefficients of determination was in the predicted direction, which clustering was based on attitudinal items as described in the chapter on questionnaire construction.

H_4: Consumers perceived risk of online shopping would be negatively associated with online shopping for tourism product.

H_{40}: No relationship exists between perceived risk of on-line shopping and on-line shopping for tourism product.

The structural equation model described in the previous chapter shows that respondents to this survey felt concerned about, and perceived that a risk existed in, purchasing over the internet. However, the score of 0.449 for the item 'It is risky to buy over the internet' stands out as representing moderate levels of concern. It is suggested that maybe the value of the item to be purchased may be a factor – that is, concern increases as the financial risk of loss increases. But Tables 43, 45 and 46 indicate that the clusters that are technologically competent have purchased tourism items over the internet – especially airline tickets and accommodation. So while there is some concern, it may not be a serious concern and hence can be presumed the relationship existing between perceived risk and online shopping for tourism product is mediated by psychological profiling as caught in the construction of the clusters – with some perceiving little risk and others being sensitive to the possibility of such risk. It can also be proposed that the most knowledgeable are able to better assess and mitigate the level of risk by, for example, correctly using firewalls, anti-virus software, and other defences now available to ensure 'safe' web-surfing. The less knowledgeable may be categorised as being two-fold – those whose lack of knowledge is such as to mean they perceive little risk, and those whose lack of knowledge means they become fearful of perceived risk. Consequently, mediating variables again are required for the relationship.

H_5: Risk taking propensity will be positively associated with online shopping.

H_{50}: No relationship exists between propensity to take risks and on-line shopping for tourism product.

Following the above discussion it can be concluded that a relationship does exist to a moderate degree – namely the more competent internet user perceives moderately low risk and hence will be more disposed to purchasing items via the internet. One problem with the hypothesis is whether an independent measure of 'real, objective risk' exists. This study failed to incorporate such a measure in the original design, and this too therefore has implications for any future research in this area. The data provided fails to either confirm or deny the proposition.

H_6: Use of complementary technology results in higher use of internet for shopping for tourism products.

H_{60}: There is no relationship between the use of complementary technologies and internet technologies for tourism product.

Table 2 in the appendix provides a more detailed data about internet usage and the complementary technologies used by the respondent. As can be observed, almost everyone who uses the internet several times a day mentioned that they use the other technologies. Except for the PDA, almost all other items have a high ownership amongst the respondents. Thus it would be appropriate to say that there is a relationship between use of complementary technology and higher use of internet for shopping, but again the ease of access to many other technologies has meant the relationships are far from conclusive.

H_7: Higher usage levels of the internet for tourism products are positively associated with higher affective scores.

H_{70}: There is no relationship between usage levels of the internet and affective scores

Cluster membership is based upon affective as well as cognitive items in the questionnaire design, and in that a sense a positive relationship has been found to exist.

H_8: Higher usage levels of the internet for tourism products are associated with high levels of interest in ownership of new technologies

H_{80}: There is no relationship between usage levels of the internet with interest in ownership of new technologies.

As indicated before, the evidence is weakly in the predicted direction, but is not conclusive.

The remaining part of this section will conclude the current research by indicating a) the intellectual linkages with prior innovation research at individual level, and b) its theoretical and practical contributions.

Comparisons of the current study to prior research

Some of the findings that emerge from this study are outlined below. Online shopping motivations vary depending on user skill levels. Importantly, user skills are a function of online tenure, type of Internet connection and the types of applications used to navigate the Internet. While the purchase of less complex products such as flights and car rentals are driven by motivations with transactional objectives, shopping motivations behind

complex services and products such as tours, activities and attractions are driven by information seeking parameters. Specifically, rewards/points and price grouped with flights and car rentals, and motivations such as detailed information and availability were largely associated with accommodations, tours, attractions, activities and events. Low- and high-skilled Internet users are distinctively different. At the outset, one can generalize that high skilled user's place greater emphasis on information detail when it comes to travel products of high complexity. This is illustrated by key associations of this group in the case of activities, events, tours and accommodations. However, in the case of accommodations and activities, low-skilled users were driven more by availability of information about them rather than other motivations.

This study revealed that among the control variables, age and education were important demographic variables in the intention to search model, and level of education was the only significant predictor in the intention to purchase model. Thus, based on the findings of the relationship between online purchasers' demographics and their intention to search and intention to purchase, online travel marketers could identify attractive and potential niche market segments. They could target relatively younger and more educated online travellers, though demographics alone are not enough for market segmentation (Bellman et al., 1999; Bonn et al., 1998).

As discussed earlier, individual innovativeness and adoption of innovations have been important research topics in both MIS and marketing literature. The literature on innovation adoption, technology acceptance, and consumer innovativeness among others,

provides insights for explaining why some individuals tend to be more innovative and more likely to accept innovations. Arguments of the above mentioned research streams are based on a common observation that individuals (potential users of new technology or potential consumers of a new product) are different in their attitudes, perceptions, and behaviours with respect to innovations. Since such differences have been also observed among potential online consumers, it is appropriate to apply these theoretical frameworks to explain what factors determine a potential customer's intention to go online shopping in this instance, with some specific reference to travel purchases. However, given the unique features of online shopping behaviour, it is argued in the present study that an explanatory model about individual adoption of online shopping should integrate relevant literature and address key issues and concerns specific to the context of online shopping in general, again more specifically related to holiday buying patterns.

Regarding average effects, attitude was the only significant predictor in explaining online travellers' intention to search, while both attitude and subjective norm were statistically significant antecedents of online travellers' intention to purchase. The findings show strong correlations between patterns of usage and attitude toward the internet generally as predictive variables for actual search behaviours and subsequent purchase of holiday products – and within this the subjective assessments of own expertise and confidence about coping with issues of security were found to be statistically important.

Otherwise stated, at low levels of uncertainty, online travellers are mainly influenced by their levels of attitude as described above, while they rely on attitude to cope with higher

levels of uncertainty, given that purchase intention has higher levels of associated uncertainty than search intention (Shim et al., 2001). The results showed that personal innovativeness would interact with attitude to influence intention to purchase. Overall, the greater the level of online traveller's innovativeness, the greater the intention to search and intention to purchase the travel-related products online. In addition, the results showed that in comparison to those with high innovativeness, online travellers' with low innovativeness were more likely to search for travel-related information online when they had a predisposition to online travel shopping (Goldsmith, 2001a). Compared with invested resources, the effects of marketing strategy enforcing targeted online travellers' attitude are greater for less innovative travellers rather than for high innovative travellers'. Although this was somewhat different from the finding of earlier works (Agarwal & Prasad, 1998; Shim et al., 2001), this finding suggests that less innovative online travellers' may be a good target market for online travel marketers, if they have a favourable attitude toward online travel shopping.

The result of positive direct relationship between consumer innovativeness and adoption explains that individual traits are as important as Perceived Usefulness in making an individual adopting new technology. Thus, innovative shoppers are expected to comprehensively use the e-shopping medium and are more likely to engage in web features when shopping for travel services online.

The research design was contextualised within the literature which is briefly summarised in Table 48 largely hides the cognitive and psychological mechanisms that influence an individual's decision about a specific motivation.

Table 1: Studies on Technology Acceptance Model

Study	Research purposes	Sample	Constructs tested / Model used
Davis (1989)	Develops and validates PU and PEOU	152 industrial users	Perceived usefulness; Perceived ease of use
Adams et al. (1992)	To replicate Davis' study on relationship between ease of use, usefulness and system usage	118 respondents from 10 organizations	usefulness, ease of use and usage
Taylor and Todd (1995)	A test of TAM, TPB and decomposed TPB models	786 business school students	TAM + TPB+ decomposed TPB
Igbaria et al., (1995)	Develop and test an integrated conceptual model of computer usage	214 part time MBA students	
Hu et al. (1999)	Applicability of TAM in explaining Physicians' decision to accept telemedicine	421 physicians from Hong Kong	TAM
Jiang et al. (2000)	A modification of TAM to describe usage Behaviour	335 students from USA Hong Kong and France	Utilization of internet
Venkatesh and Davis (2000)	Develops and tests TAM2	156 employees in four longitudinal field studies	
Horton et al. (2001)	Application of TAM in explaining Intranet usage	466 employees from two UK companies	

Study	Research purposes	Sample	Constructs tested / Model used
Moon and Kim (2001)	Extending TAM for WWW	152 graduate students @management school	TAM + playfulness
Heijden (2003)	Web Portal	828 users of a portal	TAM + perceived attractiveness + perceived enjoyment
Pavlou (2003)	e-commerce	155 online consumers	TAM + trust + risk
Yu et al. (2005)	t-commerce	947 experienced users 115 in experienced users	TAM + normative belief + trust + perceived enjoyment
Klopping and McKinney (2004)	e-commerce	263 undergraduates	TAM + task technology fit + UTAUT
Venkatesh et al., (2003)	Developing and testing a unified model called UTAUT		
Gefen et al., (2003)			TAM + trust
Dishaw and Strong (1998)			TAM + task technology fit
Wu and Wang (2005)			TAM + trust + cost + compatibility

The research streams reviewed earlier jointly provide the building blocks for the theoretical model presented in Figure 4. First, innovation adoption theory has its strength in identifying multiple individual characteristics at different levels of abstraction as key determinants of innovation adoption. Empirical studies based on innovation adoption theory often measure innovation adoption on a continuum of 'time of adoption'.

Recent advances in IT have changed individual perceptions of information use. Choo (1998) stated that information behaviour is an information needs-seeking-use cycle for resolving task problems at the individual level. He proposed an information behaviour model to explain how people reduce task uncertainty via the information needs-seeking goal. Based on this, Shih (2004) combined the TAM to develop an extended TAM for internet use. He tested his theoretical model by surveying 203 office workers in Taiwan, and his results confirmed TAM model. It also showed that relevance of information needs strongly determine perceived usefulness, perceived ease of use, and user attitudes toward internet use for information seeking. These factors were incorporated into the current study, and the findings support the notion that perceived usefulness and ease of use remain significant in the current context of international visitors to New Zealand.

The outlook for business-to-consumer (B2C) electronic commerce depends not only on consumer acceptance of internet technologies as viable transaction means, but on consumer recognition of web retailers as reliable merchants. Pavlou (2003) in his study of 155 online consumers integrated the TRA with TAM and added two additional constructs of trust and risk. He mentions that the practical utility of TAM stems from the fact that e-commerce is technology driven. In his study he incorporates

trust and perceived risk given the implicit uncertainty of the e-commerce environment. Again, this factor has proven to be significant in the SEM, although this thesis raises issues about the role of knowledge and perceived risk as previously discussed with reference to use of firewalls etc.

Explaining user acceptance of new technology is often described as one of the most mature research areas in contemporary information systems (IS) literature (Hu et al., 1999). Researchers are confronted with a choice among multitude of models and find they must pick and choose constructs across models, or choose a favoured model and largely ignore the contributions from alternative models (Venkatesh et al, 2003)

This study indicates one reason why this might be the case, and that is the nature of the innovation being considered. IT and the internet has its own evolution from being science based to being a consumer product, and to some extent this social milieu and the marketing considerations have not been considered – representing a limitation for the study and possibly the conceptualisations it has drawn upon.

Another one of the theories which have been used along with TAM is the Task Technology Fit (Dishaw and Strong 1999; Klopping and McKinney, 2004). Task-Technology Fit refers to "the degree to which a technology assists an individual in performing his or her portfolio of tasks" (Goodhue and Thompson, 1995). TTF is "at the individual level" (Goodhue, 1995, p.1831). It addresses the individual task and the technology. According to task-technology fit model, task-technology fit influences user's performance.

Dishaw and Strong has integrated TTF with TAM to demonstrate how task-technology fit influences user technology acceptance (Dishaw and Strong, 1999). TTF is a mediating factor that links the task, technology and individual characteristics to

utilization. Traditional TAM used the term ‘external factors’ to include all the task, technology and individual characteristics and assumed these characteristics influence two factors, perceived usefulness and perceived ease of use, which subsequently influence user attitude or behavioural intention. TTF, however, mediates the impact of ‘external factors’ on perceived usefulness and perceived ease of use. Despite the popularity of online shopping, insufficient empirical research has been reported on the factors that might explain e-commerce adoption among consumers (Gefen and Straub, 2000; Lederer, Maupin, Sena and Zhuang, 2000; Lee, Park and Ahn, 2001; Lin and Lu, 2000; Magal and Mirchandani, 2001). So, Klopping and McKinney (2004) selected workplace technology adoption and evaluated their suitability. Specifically they examined the technology acceptance model along with the TTF model. They adopted the two fold definition of online shopping, i.e. measuring both the actual purchases and gathering production information to be an inclusive way of measuring online shopping. According to this model, the construct TTF is a measure of the fit between the task and the technology. However, in this study, access to computers at home has proved to be a more useful distinguishing variable for purposes of developing clusters due to the increased usage of computers at places of work.

Development of interactive services on television will allow it to become an e-commerce medium. T-commerce is electronically mediated commerce using interactive television. Yu et al., (2005) in their study of adoption of t-commerce test TAM included additional factors like trust, enjoyment, and normative belief of family and subjective norm. Their sample had both experienced and inexperienced users. The results of this study show that perceived enjoyment and trust were two factors besides PU and PEOU that has a positive influence on attitude and perceived enjoyment had the greatest impact. For inexperienced users perceived enjoyment and PU positively

affected attitude. Thus it can be clearly stated that perceived enjoyment and PU are the common factors between the two groups. In this study the affective factors proved to be significant in devising the model.

In his study Heijden (2003) empirically investigates the TAM to explain individual acceptance and usage of websites. He also looks at the construct – enjoyment and its impact on the attitude towards using, intention to use and actual use. Besides, he introduces a new construct called 'perceived visual attractiveness' and measure its effect on usefulness, enjoyment and ease of use. Since his study involves website usage, the variable 'visual attractiveness' is a valid and useful one to add and measure. His sample size of 828 was subscribers to a Dutch portal with over 300,000 members. Since the test is for a single generic website, generalization might be a little stretch and had both useful as well as enjoyable features. Whether generalisability extends to portals providing paid services remain to be seen is also a question raised by the author himself.

Similarly, Moon and Kim (2001) have tested the TAM and extended it for the World Wide Web context. They have also used 'playfulness' as an additional construct to the basic TAM model. They argue that playfulness reflects the user's intrinsic belief in www acceptance. Since this study was done during 1999, it was argued the www was seen as an emerging new IT, that made individuals change their information access methods. However, it can still be argued that despite 7 years passing by since then, it still challenges people and adoption is still an issue with many due to access issues. So, applying Rogers (1995) theory of IDT the current people adopting could be labelled as late majority, since newer technologies have been since introduced and internet is being made available through them. So, generic adoption of internet still

remains an important research issue, especially within the New Zealand Tourism context. In New Zealand, the regional RTOs have not adopted newer means of delivery of the internet.

As noted above, trust has been a construct that has been used in many studies (Gefen, Karahanna, and Straub, 2003; Yu et al., 2005; Pavlou, 2003) as an additional variable to test and extend the TAM model. As Gefen et al., mention research has established that online purchase intentions are the product of both consumer assessments of the IT itself and trust in the e-vendor. Lee (1998) mentions that there is a risk of monetary loss in online transactions, since consumers rely on electronic information and thus become vulnerable to incomplete or distorted information provided by web retailers and third parties. The open nature of the internet as a transaction medium and its global ness, create uncertainty around online transactions, thus making trust a crucial element. Pavlou (2003) includes risk in addition to trust to extend TAM in his study. This factor also emerged as important in this study.

Thus it can be seen from the above discussion that there have been many variations and extensions to the basic TAM suggested by Davis (1989). This study has taken the basic TAM and combined it with Rogers' innovation diffusion theory with additional constructs and tested them against key moderators like the socio-demographic variables of age, gender, length of internet usage and ethnicity.

One of the constructs that have been included is: trust in the form of security concerns could have been tested in more depth. It would have been better to have tested the trust factor a little more and specifically with respect to some of the websites of New Zealand Tourism RTOs. This would mean that the length of the questionnaire would have increased and probability of end users responding would have decreased. It

would be appropriate for some one wanting to do further research, to look at some additional constructs. Another thing which would be good to test would be the UTAUT model recently proposed by Venkatesh et al. (2003). In this model they speak about not only adoption but use of the technology.

These findings suggest the profile of travel e-shoppers may be described as follows. Demographically, most travel e-shoppers are middle-aged (25-44) with higher educational levels. As most of their time is spent at the workplace, e-shopping allows them to shop 24/7 conveniently from anywhere. This makes them positive towards travel e-shopping compared to other people. The travel e-shoppers' profile shows some consistencies with many previous studies in terms of gender, age, occupation, education and household composition.

Internet usage and e-shopping adoption

The study reveals that majority of travel e-shoppers are experienced internet users and search for travel information more frequently than others. Further, they seem to portray more positive attitudes towards e-shopping compared to others. Therefore, familiarity with internet usage does affect the likelihood to adopt e-shopping. This supports Citrin et al. (2000), who found that higher levels of internet usage were more likely to lead to the adoption of the internet for shopping purposes. The study also found that e-shoppers rely on comprehensive product information and comparative pricing to facilitate their purchase decisions, which they obtain from information searching.

Types of purchase and preferred web site

Regardless of the frequency of shopping the majority of e-shoppers shop for accommodation and flight tickets more compared to other types of travel services such as vacation packages, coach tickets or car hires. It is thought this is due to the

ease of description and commodity-like nature of many travel services (i.e. individual hotels and flights), which favour the adoption of e-shopping (Lewis et al., 1998).

The importance of PEU and PU in the adoption of e-shopping

As predicted, PU was positively correlated with the adoption of travel e-shopping and PEU. The results validate the postulation in the TAM that PU is positively related to PEU and behavioural intention (Davis, 1989). This relationship is expected, as many previous studies have found the same effects of PEU on PU and behaviour intention (Mathieson, 1991; Adams et al., 1992; Igbaria et al., 1995; Agarwal and Prasad, 1997; Gefen and Straub, 1997). The result suggests that PU is a major determinant of travel e-shopping adoption. It demonstrates that, ease-of-use does not engender e-shoppers' decisions to adopt travel e-shopping. Instead, e-shoppers will use travel e-shopping resources that are perceived to be useful and to easy-to-use interfaces. Both PEU and PU will generate favourable feelings towards using travel e-shopping, leading to greater likelihood of adopting travel e-shopping. Besides, this study also suggests that the ease-of-use of e-shopping may contribute to building trust, which in turn aids the increase of the PU of travel e-shopping. Thus, PU and PEU have been demonstrated to be fundamental determinants of technology adoption behaviour, but the inter-relationship is not sequential but rather is interactive in nature. The question of 'trust' is further examined below.

The importance of consumer innovativeness and involvement in the adoption of e-shopping

Alongside PU and consumer innovativeness, the study also found that there is a direct relationship between consumer involvement and the adoption of travel e-shopping. This indicates that consumer involvement is an essential contributor to the adoption of travel e-shopping. Thus, it signifies long-term interest in a domain (Bloch, 1981) and

this plays a central role in the adoption of e-shopping. In this case, marketing communications, ease-of-use (navigability and usability), personalization and the customisation of web site interfaces are vital, as they might lead to increased involvement levels and finally to the adoption of e-shopping.

The indirect influence of perceived risk and trust in the adoption of e-shopping

As highlighted by many studies (Jarvenpaa et al., 2000; Friedman et al., 2000; McKnight et al., 2002), the role of trust is critical in the domain of e-shopping. Consumers could overcome their fear, derived from perceived risk of e-shopping, by building trust in a web site, or even in the entire e-shopping environment. This notion has been found to support the result, where trust in travel e-shopping has a negative relationship with perceived risk. The more trust e-shoppers have in travel e-shopping, the lower their risk perception will be. Subsequently, if e-shoppers have low perceptions of risk related to e-shopping, they will appreciate the usefulness of e-shopping more and as a result will be more likely to adopt travel e-shopping.

On the other hand, the result also demonstrates consumer involvement has positive effects on both trust and perceived risk with regard to travel e-shopping. As previous researchers have discussed, consumer involvement is revealed to play a prominent role in explaining both trust creation and customer retention (Teichert and Rost, 2003).

Implications for marketing decisions

There are some implications that may be derived for marketing of technological innovations and new product development from our findings. In practical terms,

marketers of these technological products need to be creative in presenting new usage scenarios to the adopters and fostering direct communication among adopters.

On the marketing side, communication and customization are among the new demands of knowledge economy, whereby mass markets are a phenomenon of the past and the interactive markets of one are the future (Wind and Mahajan, 2002). Early adopters of any technology are likely to be very similar to interactive tourists as defined by New Zealand Tourism. This has very high implications to New Zealand Tourism. In many of the European and North American markets, people are used to watching programs on High Definition TV, use wireless communication and in Hong Kong; IT companies are talking about 4G services to mobile phone users. Emerging new technologies such as hand held mobile devices with wireless connections to the internet open up new prospects for e-commerce and e-tourism (Schmidt-Belz, Laamanen, Poslad, and Zipf, 2003). Location based and personalised services are some features of such services. Once the consumers in these markets get used to these technologies, they take them for granted and expect to see them everywhere they go, especially New Zealand. The report 'Digital Divide' available on the statistics New Zealand website (http://www.stats.govt.nz/analytical-reports/digital-divide) downloaded on July 31, 2006 in its conclusion mentions that based on the data there is a digital divide that exists in New Zealand. This is important since domestic visitors outnumber the international and hence those involved in developing and dissemination of information and services would be hesitant because of the divide. However, we need to also bear in mind the fact that technology in many of the markets targeted by New Zealand tourism is way ahead of what is available in New Zealand, or indeed what is currently being planned.

With the rise of portals and internet based marketing opportunities, New Zealand RTOs should take advantage and position their regional websites as community network portals implemented over a broad band connection and in different languages. These portals would be in an excellent position to apply upstream reach and product richness by extending their tourism marketing programs into web-based cooperative marketing campaigns. The 2006 New Zealand Tourism Industry Association conference was told the lack of lack of broadband access in New Zealand has led to lost business in the tourism industry. Henry Asch, whose company specialises in bungee jumping tours, said "If you respond quickly you will be seen as having more credibility". John Rankin whose company provides travel services added "quick response is vital to winning business, or you do not get the business". A study group recently rated New Zealand 22nd out of 26 countries for broadband access, charging reasonable costs but with limited broadband access (source: eTurbo News 21/06/2006).

In the UK analogue television transmission will cease in 2010, while in the USA internet usage is delivering speeds of 1 gigabyte per second over fibre optic cables in 2006. In New Zealand caps exist on 'high speed' internet and Television New Zealand has not yet at the time of writing announced any clear policy on digital television. Will interactive visitors sacrifice their love of the communication technologies for long stays and enquiring into culture if these technologies do not exist in New Zealand?

The contribution of technology applications in tourism and the consequent alterations in the structure of tourism sector have been widely recognised (Buhalis, 2003). Flouri

and Buhalis (2004) define the term ‘wireless technology’ as those involving mainly to 3G networks and Wireless Local Area Network (WLAN).

Wireless technologies are being introduced into New Zealand and it is in a nascent stage. However, it has rapidly diffused in the market worldwide. Wireless technology is definitely a marketing tool for destination management organisations, in the future although presently its usage is limited. There could be a number of benefits for destinations. The competitiveness could increase because they are using innovative technologies. It has been suggested that wireless technology could contribute in attracting more visitors (Flouri and Buhalis, 2004).

In conjunction with companies like Vodafone and NZ Telecom, New Zealand Tourism could use wireless technology to send welcome messages to all incoming visitors using cell-phones with roaming facility. With modification of websites, if a traveller has registered, the message could be tailored and specific to the visitor, subject to privacy laws. Location based services are nowadays becoming quite common in Europe and US and people of talking of recommender systems using mobile phones.

The rapid development of internet and its applications has led to many new broadcasting services. One of the emerging applications is to stream video programs via the internet (Lin, 2004). These applications are generally labelled as web casting (Lin, 2004), or internet television (Gerbarg and Noam, 2004; Katz, 2004). Gerbarg and Noam (2004) pointed out that internet television is a product of digital convergence in telecommunications, the internet, television, and computer applications. Technically, internet television has been developed from the capability of the internet to distribute full–motion video to users (Katz, 2004). However, the

arrival of internet television has been envisioned to affect perceptions of how television should be defined (Katz, 2004).

Limitations of the study

As is almost inevitably the case, any research project is constrained by time and place, and the pragmatic considerations of a doctoral student working on a thesis part-time with limited financial resources! Some specific limitations include:

- Local and specific to a place i.e. only New Zealand

  Being a part time study with limited resources, the study was restricted to overseas visitors visiting New Zealand. So while the results might hold good for the New Zealand market and its visitors, there is a need to globalise the results and extend the study.
- The sample chosen has been a restricted sample. English speaking visitors were invited to participate. It would have been desirable to have included tourists speaking other languages as well, especially Asians, since the projected growth in the number of tourists from these countries is expected to be quite substantial and they have high adoption rates of cell-phone and internet links.
- Usage of any technology can be continuous only if it is longitudinal in nature. However, since this study was exploratory, it only examines the current status of visitors' usage status. The implicit limitation is that the same respondents might, over a period of time, become more adept at using the technology and hence moves away from their current profile and fall into a different category.

  The results are very time dependent. Indeed the researcher was conscious of the fact that over the period of research design, data collection and analysis

changes in computer technologies continued unabated. Costs of equipment have certainly fallen. Cell phones with cameras became common and both Telecom and Vodafone introduced new services linked with internet connections. Such considerations raise concerns about the degree to which findings become rapidly dated, even though the basis of the study lies in principles of cognitive and affective knowledge rather than the specific nature of given technologies. Nonetheless there are concerns that such technological changes invalidate the social context of the theoretical construct.

- Since the study developed constructs based on previous research, many variables were not examined in depth. Also the results and findings of the study have thrown up some issues and require more variables to be examined in depth. The goodness of fit indices of the SEM were not as high as might be expected or hoped for – which raises issues of
    - need to improve conceptualisation
    - need to better identify variables that measure the dimensions involved in the theory
    - look at sources of possible error in model specification

Lastly the above issues combined together raises issues of ability to generalise from findings.

Yet the researcher has some straws to cling to! Kline (2005) argues that if the indices of goodness of fit are above 0.6, yet below 0.9, it is not possible to wholly reject a model based on sound theoretical structures. While not proven, it can be argued that the model is neither disproved. It lies in an intermediate zone where yet further research is required. Such research lies in at least two directions – a need to refine the

proposed hypothetical linkages between variables, or a need to redefine the instruments of measurement, or both.

While the results were disappointing to the researcher, it is suggested that it is the second of the three alternatives that possibly needs addressing. In retrospect the author perhaps felt too bound to past research which has been primarily conducted outside the arena of travel related purchases; and possibly the questionnaire should have sought more items specific to holiday and travel websites. In a partial defence, it should be noted that this author was a part-time doctoral candidate and in the intervening years there has been discernable shift in the tourism literature pertaining to internet usage by visitors. Much of the earlier literature to about 2001 tended to be concerned about features, content and a categorisation of web-page content. The nature of research then began to shift to determinants of website effectiveness as distinct from content. This stage of the research also included for the first time a study that included the user; but these tended to concentrate on levels of satisfaction, ease of site usage etc., and the drivers for research were generally still dominated by an industry seeking more effective marketing and destination promotion. It is only comparatively recently that literature has begun to appear that has adopted concepts of market segmentation, client psychographics (Vincent, 2003; Morrison et al., 2001). When this author started this research project, the literature was not so rich. Indeed, the ENTER conferences and its associated book and journals were still in their initial stages and it is fair to argue that much of this early work was descriptive in nature. Like the paper by Nodder, Mason, Ateljeviv and Milne (2003) where they argue that due to an over emphasis on survey based research, understanding of adoption of ICT and issues facing SMTEs in New Zealand is lacking an understanding of issues facing small enterprises. Put simply, times change!

Contributions of the study

However, the current study contributes to academic and practical research in several aspects. Theoretically, the current research addresses a timely issue – adoption of internet for shopping of tourism products / services. Unquestionably, this represents a radical innovation in both a technological and commercial sense. Innovation adoption and technology acceptance have been important research topics in the MIS field, but few empirical studies have investigated why consumers would accept e-commerce. This research was intended to fill this gap in the context of New Zealand Tourism. Moreover, a behavioural approach was used to investigate the factors affecting individual decision about adopting e-commerce. The proposed study makes a methodological contribution by investigating a new, practitioner-focused method for causal modelling in behavioural sciences such as psychology and marketing. In the adopted methodology the marketing instruments were combined with psychological decision making to better capture the dynamic nature of the marketing decisions and consumer behaviour.

Hence, different from previous research that often focuses attention on observable and tangible antecedents of innovation adoption, the current research emphasises unobservable and intangible characteristics. The empirical results indicate the important role of individual endowments (cognitive and psychological) in affecting e-commerce adoption decision. Empirically this research study provides important tools for the marketing decision makers. Consumer behaviour has stayed a pretty much uncharted territory, and this study sheds light into this area within the context of this study. Finally, it is worth noting that most previous studies in the e-commerce context were conducted with students as sample sets, except for the study by Vincent (2003), which however, was restricted to visitors to Hong Kong. The current research was

conducted in New Zealand and hence enriches the empirical literature in this field with reference to New Zealand tourism. Methodologically a more fundamentally sound scheme was demonstrated for quantitative methods in marketing research.

The current research findings also have significant implications for e-commerce practices. Some deep psychological mechanisms underlying individual's decisions about purchasing products or services on the internet were explored. This line of inquiry, although popular in marketing literature, has been largely overlooked in studies on tourist behaviour in the context of online shopping. The reported empirical findings indicate that cognitive and psychological factors do have meanings when one attempts to understand why some people like on line purchasing of tourist products while others reject it.

A practical implication of the findings is that internet marketers may need to take another look at the segmentation strategies based on consumer cognition and psychology. Personality research, once challenged in the marketing area, has regained academic attention in recent years (Collier, 2001; Cast and Burke, 2002; Kull, 2005). Moreover, it can be argued that psychological segmentation is meaningful in the cyber-marketplace. Because of its interactivity, connectivity, the internet has rendered such concepts as geographical location, social-economic status, and time use patterns largely useless as the basis for designing marketing plans. In the internet era consumers are gaining more and more autonomy and bargaining power. If the internet marketers want to appeal to their customers, they must know what the latter think and like. For example, individuals who would do online shopping appeared to be open minded, risk prone, self confident and sophisticated. They tended to solve problems by themselves and enjoy the information variety brought on by new technologies. The

implication of these findings is that internet marketers need to go looking for such individuals, but equally the search is not difficult – for these high level users of the internet.

The main contribution of this study is the examination of the moderating effect of personal innovativeness on the online purchase decision-making process. This study presents explicit evidence suggesting that the impacts of attitude and subjective norms on online travellers' shopping intention depend largely on online travellers' innovative predisposition. The results provide meaningful insight into why not all travellers show the same level of interest in shopping travel products online, even when they have the same level of positive attitude.

Based on the results, more specialized service strategies could be implemented in terms of travellers' degrees of innovation. The findings of this study also provide some important practical implications for online travel marketers. First, in order to encourage online travellers to blend online travel shopping into their daily buying activities, online travel marketers should principally focus both on increasing targeted online travellers' attitude toward online travel shopping. Thus, it is suggested that online travel marketers provide critically desired utilities related to online travel shopping (e.g., convenience, contents, cost saving, and privacy). If online marketing communications could enable travellers to focus on such benefits of online shopping, the propensity to shop for travel products and services online would increase (Athiyaman, 2002; Beldona et al., 2005).

Another way to foster online travellers' affective attitude toward online shopping is to promote differences in online travellers' daily buying choices. Through participation in site design and operation and derived benefits, online travellers should be able to

fully recognize the key aspects of a given online shopping service (Goldsmith, 2001b). Especially, online travel marketers have to shift their focus from attraction through ease of function to retention through relevant and valuable information as traveller's experience online shopping.

Second, online travel businesses' social influence marketing strategies should be tailored based on online travellers' level of innovativeness. That is, for online travellers' with low levels of innovativeness, more personalized social information such as the referents' buying choices should be weighted as a suitable marketing way, since they are more open to social influence than high innovative travellers' (Khalifa & Limayem, 2003). Conversely, for online travellers' with high innovativeness, an indirect mass-media style approach should be explored so that it can be perceived to be less influential on shopping behaviour, given that they are less motivated to comply with the referents in making their buying decisions. In addition, compared to less innovative online travellers', innovative online travellers' tend to be less-price sensitive (Goldsmith, 2001). Thus, rather than a money-saving approach, non-monetary benefits could be highlighted as a more effective marketing approach to high innovative online travellers'. Lastly, high innovative travellers can be a clear target market for new product and high complex travel products such as cruises or vacation travel packages (Beldona et al., 2005; Christou et al., 2004), since they are more willing to take risks and purchase travel products online earlier than less innovative travellers'.

This study contributes to and extends the understanding of the internet as a medium for commercial use in the business-to-consumer arena. An understanding of reasons

for online purchasing is particularly relevant in the context of predictions made regarding e-shopping in the future (Swaminathan et al., 1999). Firstly, from a managerial viewpoint, by recognizing the profile of travel e-shoppers, online retailers would be able to define their target markets, to plan suitable offers or to launch new products for specific market segments. The demographic and geo-demographic profile of travel e-shoppers could also be used for fine-tuning market segmentation and positioning strategies while emphasizing the benefits offered by the marketers' web sites to the e-shoppers. Therefore, marketers could design a more personalised marketing that are based on specific consumer needs, tastes and lifestyles. Consumers are more likely to make impulsive purchase decisions if the new product is of particular interest to them (Raymond and Tanner, 1994).

Further, by understanding the profile of e-shoppers, travel marketers would be able to influence consumer behaviour from conducting internet information searching to internet shopping. Secondly, the findings provide support for investment decisions, and for decisions relating to the development of internet services that address and take the concerns and wants of consumers into consideration. This study confirms that the convenience of e-shopping attracts to consumers, as it enables them to shop at any time, from anywhere, as well as providing product information sources, lower prices and perceived control over purchase decisions. However, privacy and the security of personal and financial information during transactions are concerns amongst e-shoppers.

Third, this study contributes to an understanding of how internet facilities can be embraced by travel retailers, and also how these facilities contribute to the development of online tourism in New Zealand. To this end, the proposed model for

analysing e-shoppers' behaviour in order to gain an understanding of the antecedents of e-shopping adoption could be used as a practical tool to predict how consumers behave online. It is more meaningful as the model examines the "actual" e-shoppers' behaviour rather than their "intentional" behaviour. This is an important issue, as researchers have questioned the strength of the relationship between intentions and self-reported subjective use (Straub et al., 1995).

Fourth, theoretically, the comprehensive, yet parsimonious model developed in the study makes an important contribution to the emerging literature on online consumer behaviour by grounding new variables, which is the influence of personal characteristics into a well-accepted general model (TAM) and then applying them to a new context of e-shopping. The final e-shopping adoption model possesses substantial explanatory power with reasonably high goodness-of-fit. Thus, the results provide convincing support for the theoretical framework of the study.

Perceived usefulness and perceived ease-of-use

It is evident from this study that in order to convert internet browsers into e-shoppers, the ease of use and usefulness of e-shopping must be enhanced. Retailers should understand that consumers perceive e-shopping as useful because it serves all aspects of shopping convenience. Retailers need to understand these motivations and emphasise the benefits in their marketing communication. From time to time, retailers should expand the benefits by offering additional facilities and services such as online order tracking services, free trials, membership rate, last minute deal, etc. This could extend the PU of e-shopping, which would eventually influence consumers' decisions to adopt.

Besides, travel retailers should promote the simplicity of e-shopping to encourage adoption. In designing a travel web site, marketers should pay attention to ease-of-use, user-friendliness and ease-of-navigating in order to enhance people's perceptions of the web site's ease-of-use, which will increase people's intention to make use of the service. In providing a user-friendly shopping environment, web sites should be tailored more effectively to meet the needs of users based on skill levels.

Risk and trust

Privacy and security are very much related to the topic of trust and risk in e-shopping, as personal data are processed when making orders or reservations. It is known that e-shoppers are likely to purchase from a web retailer that is perceived to be low-risk, even if the shopper's PU and ease-of-use are relatively low (Jarvenpaa et al., 1999). Thus, diminishing such risk is considerably important to web retailers. More specifically, establishing a risk-free image would seem to be a key strategy for marketers if they are to attract consumers to an e-shopping format. One possible approach is to encourage credit card companies to make consumer protection assurances in order to reduce consumers' security and privacy risk.

However, marketers should be more careful and selective in executing e-marketing strategies and tactics as consumers today are easily irritated by unwanted and unsolicited communications via the internet, they are less likely to purchase products from the senders' web sites. Thus, it is suggested that travel retailers should consider the permission marketing strategy, which appears to be very appropriate in the e-marketing context. Besides, customer relationship management approaches could also be used to build a trusted relationship between marketers and e-shoppers is also

recommended. By keeping in touch with shoppers after sales retailers could build trust as well as relationships with the shoppers, which would attract shoppers to revisit their web sites in future.

Consumer innovativeness

The level of consumer innovativeness could presumably help marketers to identify early adopters of their products. As consumer innovativeness is positively associated with the adoption of travel e-shopping, travel marketers need to target consumers who have a general innovative attitude in the domain of IT. The early adopters contribute to the initial sales of a new product or service as they appear to understand the benefits and master the use of technology more quickly than other shoppers. They also provide important word-of-mouth communication about the new products to later adopters.

Moreover, they are also important advocates and will spur the e-shopping adoption process among their peers (Agarwal and Prasad, 1998). This would greatly benefit the technology diffusion process within society.

Consumer involvement

The study found that consumer involvement is vital in stimulating online purchasing behaviour. Therefore, retailers should create various stimuli to encourage consumers to be involved in web searching and shopping. Many creative ways to get consumers involved in the shopping process, such as through web interactive features (e.g. audio, video, 3D pictures). These features could stimulate interest and getting many people involved in e-shopping by encouraging them to visit the web site regularly. Apart from that, retailers could create incentive programs such as reward points programs,

e-vouchers and membership schemes that could sustain e-loyalty while converting an information seeker into a regular customer.

Alternatively, consumer involvement in e-shopping could also be enhanced by integrating online and offline marketing approaches. Despite the potential of the internet as a communications tool, it is important for companies to realize that the internet, by itself, is not a self-supporting mechanism (Kotler et al., 1996). E-marketing efforts are unavailable to a large percentage of the world's population, and it would be irrational to market solely on the internet. Thus, any e-marketing activities should provide additional exposure and should complement traditional marketing efforts (and vice versa) (Mathieson, 1995). The internet should become an integrated and complementary element of the entire marketing mix (Kotler et al., 1996).

Future research

Findings of the study can also help in the development of customer centric travel reservation systems. As the travel distribution system moves towards integrating various components of travel using common standards, the results of this study can help in the design of systems based on customer requirements of components. Future research can develop a comprehensive evaluation of travel components within one single system, and evaluate customer perceptions towards it.

A big limitation of the study is the absence of ''complementarities'' as a driver of purchase. Future research should investigate complementarities and the specific relationships between the various components in it. For example, flights and accommodations can be considered more complementary compared to flights and other services. Reason enough that Orbitz sells rooms as a value addition to its core

service of flights. Another limitation of the study is the inability to identify motivations specific to ‘‘packages’’. Future research should separately identify the key online shopping motivations of packages along with other complex products such as cruises, etc.

Advanced research should be embarked upon to replicate and validate the model in order to determine the robustness of the current findings. Since, the generalisability of the model is inherently limited to the travel services setting, the model and hypotheses should therefore be extended beyond the present context (e.g. to the e-banking industry and the insurance industry). It is also suggested that if any replication study were to be carried out beyond the internet shopping context, some refinement to the measurement instrument for the constructs must be carefully considered. By doing so, these replication studies could extend the generalisability of the findings derived from the current study.

The findings of the direct relationships of external variables over and above the TAM variables may be applicable in the internet marketing settings; the TAM needs to be extended to include other mediating beliefs. Future research is suggested to further extend the TAM to encompass other theoretical constructs (Davis et al., 1989; Gefen and Straub, 2000; Gefen et al., 2003). It would be interesting, for example, to explore the role of consumer satisfaction, shopping orientation, personal traits and social influences on the acceptance of e-shopping.

Future research

No matter how theoretically sound the models would be, their empirical justification is always a very interesting challenge. There is a clear demand for future research, in which an even larger customer base should be used than that in this study. There could be definite quotas of respondents by the country of origin based on the statistics published by New Zealand Tourism. Individual country respondents' behavioural variables could be compared and factors could be made. However, it is suggested that such research would require significant funding; certainly more than that is available to a single part-time doctoral student!

Also this research could be renewed in a couple of year's time to see what happens when the non-users become new users and newer technologies are introduced, and find who are the adopters of this new technologies. This would also give some understanding about the nature of attitude change over time. To better understand the real speed of internet adoption for tourism, a follow up study using time series would be in order. Also, broadband was a specific topic not covered by this study. Hence it would be interesting to see the affect of broadband on the adoption and continued use of internet. It is suggested that this project would be suitable for a future applicant for the New Zealand Ministry of Tourism student research grants: which became available in 2004.

A question of possible differences between ethnicities in consumer behaviour was raised in this research. We would also be interested about the possible universalities among internet users for tourism around the globe. Therefore another area of future research is the replication of this study in other countries. This will provide insights

relative to the impact of culture on the evaluation of service quality. This is an important issue due to the nature of the global economy. Another thing is that the questionnaire contained no specific questions pertaining to personal use of the internet at work.

After more empirical research, our model should be re analysed. Are there more variables detected that should be included in the model, or are there variables that could be removed from the model because of their clear irrelevance?

Even in the current model, there are plenty of issues open for future research. Clearly the different dimensions of the model are far vaster than this study leads one to believe. For example ‘ease of use’ means different things to different people. Does it mean that the computer is easy to use or handy, there is a network connection available, or does it simply mean how easy the web page is to use / navigate? All these issues are in fact themes for future research. This study was not designed to take a stand on the construction of the NZ tourism websites or the user interface in general, but to resolve these questions a further study is needed.

In addition to this, we could use more information about the real nature of the interdependence relationships between different factors. The interest in future will also be directed toward factors that divide the data sample. Currently it can only be guessed what these factors might be, and it might be customer’s attitude towards technology, meaning that the first factor to divide the sample in half in terms of heavy users and non users is the attitude toward technology. Future research on this area might reveal other determinants such as profession or income.

Another interesting starting point for future research is also the contradictions between this study and previous research in this area. One could be customer’s

concerns about security, do severe security concerns exist among customers or has the relevance of these security concerns been exaggerated?

One major challenge to managers and area of future research is to understand the service characteristics that will drive or hinder customer acceptance of these services and hence how they can be adapted to maximize the rate and level of customer uptake. In short, the continuing evolution of the internet technologies and uses; the merging of different communication technologies and the changing attitudes and uses by consumers of these technologies require a process of not ‘one off’ studies like this one, but a conscious and continuing monitoring of visitor uses and attitudes to such technologies when visiting New Zealand.

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Appendix A: Cover Letter

December 10, 2007

Dear Visitor,

Kia Ora. Welcome to New Zealand.

As part of the requirements for my Doctoral degree program at Waikato University, New Zealand, I am conducting a study to help understand the Internet usage of visitors coming to New Zealand. The study will help the travel / tourism industry, in general, to enhance its services to people like you by offering better products / services on the Internet.
While participation is completely voluntary, your help is greatly appreciated. It will take approximately 15 – 20 minutes to complete. Please answer each question as carefully as possible, but please note that you may decline to answer any specific question, if you wish to. If you feel unable to answer a question, please just continue to the next one.
All information will be reduced to aggregate form and in no instance will it be identified with any particular individual(s). Your individual data will not be shared and your name and address are not required. Since only a few travelers are being asked to respond, and you have been selected randomly, your participation is really critical to the completion of this research project and my thesis. Should you prefer not to participate, or wish to cease participation at any time, you are free to do so.
Thank you very much for your help.
Sincerely yours,

Ulhas Rao

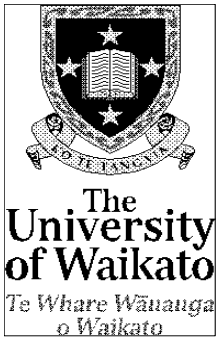
Enclosure (1)

This questionnaire is about your use and experiences of the Internet generally and about the extent to which you use it for making travel bookings with particular reference to your trip to New Zealand. Your answers are entirely confidential and your name and address is not required. Any questions relating to the project can be addressed **to Professor Chris Ryan, Department of Tourism Management,The University of Waikato, Hamilton. Tel: 07 838 4259.**
e-mail: caryan@waikato.ac.nz. Your help is much appreciated.

Appendix B: Questionnaire

Research Project into Internet Usage and Travel Bookings

This questionnaire is about your use and experiences of the Internet generally and about the extent to which you use it for making travel bookings with particular reference to your trip to New Zealand. Your answers are entirely confidential and your name and address is not required. Any questions relating to the project can be addressed to Professor Chris Ryan, Department of Tourism Management, The University of Waikato, Hamilton. Tel: 07 838 4259. e-mail caryan@waikato.ac.nz. Your help is much appreciated.



QUESTIONNAIRE

Please tick the boxes as appropriate, or circle those numbers that best represent your answer – or simply insert the appropriate information in the indicated space.

SECTION 1: Internet Usage, knowledge and Experience

Q1 On an average how often do you use the Internet (Choose one)?

Several times in a day ☐ once a day ☐ a few times a week ☐
Once a month ☐ Less than once a month ☐
Never / almost never ☐

Q2 On average how many hours a week **at work** do you use the Internet? _____Hours

Q3 On average how many hours a week **at home** do you use the Internet? _____Hours

Q4 Which of the following do you use to communicate with others in your daily life (Tick as many as applicable)

Fax ☐ Phone ☐ Mobile Phone ☐ Chat room ☐

Surface Mail ☐ Courier ☐ Internet email ☐

Q5 Which of the following do you have at home
(Tick as many as applicable)

Voicemail or answering machine	☐
Fax machine	☐
Composite machine (Fax, Copier, Scanner and Printer)	☐
Video game console	☐
Stereo System or CD player	☐
Computer including CD and DVD player	☐
Video recorder	☐
DVD / Home theatre system	☐
Video Camera or Digital Camera	☐
Personal Digital Assistant (PDA)	☐

Q6 Below there is a series of statements about the Internet. Please indicate your agreement or disagreement with the following statements using the scale shown.
7 = Very strongly agree 6 = Strongly agree 5 = Agree
4 = neither agree nor disagree 3 = Disagree 2 = Strongly disagree
1 = Very strongly disagree
0 =I have no opinion/question is not appropriate to me

I find that I can manage to solve difficult problems	1	2	3	4	5	6	7	0
if I try hard enough								
I know I can handle complex Internet searches	1	2	3	4	5	6	7	0
If I am in trouble I can usually think of a solution	1	2	3	4	5	6	7	0
I avoid confrontations on the net	1	2	3	4	5	6	7	0
If something is complicated I do not bother trying it	1	2	3	4	5	6	7	0
I am a slow learner	1	2	3	4	5	6	7	0
I avoid learning new skills, especially when they look difficult	1	2	3	4	5	6	7	0
Change is more important than continuity	1	2	3	4	5	6	7	0
What is old is retrograde	1	2	3	4	5	6	7	0
One needs more courage for innovation	1	2	3	4	5	6	7	0
He who dares succeeds	1	2	3	4	5	6	7	0
Technological progress bring social improvements for people	1	2	3	4	5	6	7	0
Technological progress helps only a few people	1	2	3	4	5	6	7	0
Cultural heritage is more important than technological	1	2	3	4	5	6	7	0
Improvements								
I am curious how the Internet works	1	2	3	4	5	6	7	0
I search for information on the Internet for different projects	1	2	3	4	5	6	7	0
I am creative with computers	1	2	3	4	5	6	7	0

Q7 How frequently do you use the Internet for the following activities **(please circle that best represents your view on the indicated scale)?**

	Never						Almost every day
Business	1	2	3	4	5	6	7
Education	1	2	3	4	5	6	7
Shopping	1	2	3	4	5	6	7
Entertainment	1	2	3	4	5	6	7
Communication with others by email	1	2	3	4	5	6	7
Communication with others through chat rooms	1	2	3	4	5	6	7
Gathering information for personal needs	1	2	3	4	5	6	7
Gathering vacation related information	1	2	3	4	5	6	7
Playing games on the Internet	1	2	3	4	5	6	7
Making travel bookings	1	2	3	4	5	6	7

Q8 In which year did you start using the Internet? _____

Q9 Generally, could you provide three words or phrases that describe your experiences using the Internet

Q10 Has your experience with the Internet changed since you started using the Internet?

Yes ☐ No ☐

If, Yes can you please provide three words of phrases that describe the ways in which it has changed.

Q11 Below there is a series of statements about the Internet. Please indicate your agreement or disagreement with the following statements using the scale shown.
7 = Very strongly agree 6 = Strongly agree 5 = Agree
4 = neither agree nor disagree 3 = Disagree 2 = Strongly disagree
1 = Very strongly disagree
0 =I have no opinion/question is not appropriate to me

The biggest problem with the Internet is being able to the information I am looking for	1	2	3	4	5	6	7	0 find
The biggest problem with the Internet is not being able find the pages I have visited earlier	1	2	3	4	5	6	7	0 to
The biggest problem with the Internet is not being able determine where I am.	1	2	3	4	5	6	7	0 to
The biggest problem with the Internet is encountering that don't work.	1	2	3	4	5	6	7	0 links
Learning to use the Internet would be easy for me	1	2	3	4	5	6	7	0
I would find it easy to use the Internet to do what I want to do	1	2	3	4	5	6	7	0
I can find information on the Internet easily	1	2	3	4	5	6	7	0
It would be easy for me to become skillful at using the Internet	1	2	3	4	5	6	7	0
I am an experienced Internet user	1	2	3	4	5	6	7	0
I know quite well how the Internet works	1	2	3	4	5	6	7	0
The Internet is as essential in my life as any other thing	1	2	3	4	5	6	7	0
The Internet has saved me lots of time	1	2	3	4	5	6	7	0
It would be difficult to imagine life without the Internet	1	2	3	4	5	6	7	0
It is easier to get information from the Internet	1	2	3	4	5	6	7	0

Q12 Using the scale shown, how highly do you value the following channels as information sources (please circle the number that best represents your view)?

	Pay no attention						Regard Highly
Internet advertisements	1	2	3	4	5	6	7
Direct emails from marketers of products	1	2	3	4	5	6	7
Internet search engines (like Yahoo, Google, Alta Vista)	1	2	3	4	5	6	7
Hyperlinks on pages you visit	1	2	3	4	5	6	7

Q13 Below there is a series of statements about the Internet. Please indicate your agreement or disagreement with the following statements using the scale shown.

7 = Very strongly agree
6 = Strongly agree
5 = Agree
4 = neither agree nor disagree
3 = Disagree
2 = Strongly disagree
1 = Very strongly disagree
0 = I have no opinion/question is not appropriate to me

Using Internet helps me plan better vacations	1	2	3	4	5	6	7	0
I like the idea of online shopping	1	2	3	4	5	6	7	0
Defining search on the Internet is complicated	1	2	3	4	5	6	7	0
Internet searches are time consuming	1	2	3	4	5	6	7	0
I search for vacation destinations on the Internet	1	2	3	4	5	6	7	0
I find buying over the Internet is more fun than buying	1	2	3	4	5	6	7	0
In a store								
I enjoy buying over the Internet	1	2	3	4	5	6	7	0

Q14 Have you bought / services through Internet? Yes ☐ No ☐

Q15 Have you bought tourism related services over the Internet?

Yes ☐ No ☐

If **yes,** which of the following have you bought over the Internet?

Accommodation ☐ Airline tickets ☐

Booked car hire ☐ Booked tickets for a tour from a tour company ☐

Booked restaurant seats ☐ Purchased souvenirs ☐

Purchased travel books ☐

Any other (please specify)_____

Q16 For your most recent vacation trip, to what extent did you use the Internet to gather travel related information? (By travel related, I mean things like getting information on destinations to visit, airline schedules, checking prices) – please circle the number that best represents your practice.

Not at all 1 2 3 4 5 6 7 Very Frequently

Q17 On your recent vacation trip, how much of travel planning did you do through the Internet?

All of the 100 % of your travel planning was done on the Internet ☐
Most or around 75 % ☐
About 50 % ☐
Gathered information, but booked through a travel agent ☐

None ☐

Q18 Have you had any negative experiences with a purchase over the Internet?

Yes ☐ No ☐

If Yes, please give details

Q19 Please indicate your agreement or disagreement with the following statements using the scale where:

7 = Very strongly concerned
6 = Very concerned
5 = Concerned
4 = Have some concern
3 = Slightly concerned
2 = Not generally concerned
1 = of no concern at all
0 = not appropriate/ no opinion/

In general, how concerned are you about the security on the Internet?	1	2	3	4	5	6	7	0
How concerned are you about security in relation to making a purchase over the Internet?	1	2	3	4	5	6	7	0
When you make a purchase over the Internet								
How concerned are you that your personal information will be kept confidential?	1	2	3	4	5	6	7	0
How concerned are you that your credit card details will be secure?	1	2	3	4	5	6	7	0
How concerned are you that the products / services will be as good as they appear on the Internet?	1	2	3	4	5	6	7	0

Q 20 Below there is a series of statements about the Internet. Please indicate your agreement or disagreement with the following statements using the scale shown.

7 = Very strongly agree
6 = Strongly agree
5 = Agree
4 = neither agree nor disagree
3 = Disagree
2 = Strongly disagree
1 = Very strongly disagree
0 =I have no opinion/question is not appropriate to me

It is risky to buy over the Internet	1	2	3	4	5	6	7	0
I sometimes shop in stores for goods and then buy them over the Internet	1	2	3	4	5	6	7	0
I use on-line banking regularly	1	2	3	4	5	6	7	0
On line shopping is not safe	1	2	3	4	5	6	7	0
I don't see any reason in buying things over the Internet	1	2	3	4	5	6	7	0
When they are available in stores								

Q 21 Cost aside, please indicate how interested you would be in having the following at your home?

7 = Very strongly interested
6 = Very interested
5 = somewhat interested
4 = Have some interest
3 = Have little interest
2 = Have very little interest
1 = Have no interest

Refrigerator with a computer screen to track your inventory	1	2	3	4	5	6	7
Mobile phone with ability to pay for daily essentials	1	2	3	4	5	6	7
Internet facility on your TV	1	2	3	4	5	6	7
Internet facility on your mobile phone	1	2	3	4	5	6	7
A system allows you to control lighting, temperature, home security and other appliances over the Internet	1	2	3	4	5	6	7
Video Phone with Internet capability	1	2	3	4	5	6	7
A composite audio-video system that allows you to play and record video cassettes and DVD's	1	2	3	4	5	6	7

Q 22 Below there is a series of statements about the Internet. Please indicate your agreement or disagreement with the following statements using the scale shown.

7 = Very strongly agree
6 = Strongly agree
5 = Agree
4 = neither agree nor disagree
3 = Disagree
2 = Strongly disagree
1 = Very strongly disagree
0=I have no opinion/question is not appropriate to me

I look to the Internet as a first alternative for information	1	2	3	4	5	6	7	0
I use the Internet in more ways than most of my friends	1	2	3	4	5	6	7	0
Amongst my friends I seek out relatively less information from the Internet	1	2	3	4	5	6	7	0
Compared to my friends I use the Internet for shopping more	1	2	3	4	5	6	7	0
It is flexible to get information from the Internet	1	2	3	4	5	6	7	0
I will visit a new website, even if I have not heard of it	1	2	3	4	5	6	7	0
In general my friends ask me about new products available on the Internet	1	2	3	4	5	6	7	0
My overall attitude towards Internet shopping is positive	1	2	3	4	5	6	7	0

Please turn over .. next page last page!!

Section two

This part of the questionnaire is solely for purposes of categorizing respondents. You cannot be identified from these replies.

Q 23 Are you Male ☐ Female ☐

Q 24 What is your age? Under 19 ☐ 19 – 25 ☐ 26 – 35 ☐

36 – 45 ☐ 46 – 55 ☐ 56 – 65 ☐

66 – 75 ☐ 76 and over

Q 25 What is the highest level of education you have completed?

School leaver ☐ Vocational / Technical / Trade School ☐

University Graduate ☐ Masters Degree ☐ Doctoral Degree (PhD) ☐

Q 26 What is your nationality? _____

Q 27 With which ethnic group do you identify? _____
(e.g. European, Chinese, African or Maori)?

Q 28 Which of the following best describes the area you live in?

Urban ☐ Suburban ☐ Rural ☐

Thank you for completing the questionnaire.

Appendix C: Additional Tables

Table 1: Internet usage and Complementary Technologies

		Several Times	Once	A few times	
		in a day	a day	a week	
Voicemail	Yes	171	87	85	
	No	61	33	49	
Fax machine	yes	72	30	24	
	No	160	90	110	
Composite machine	yes	71	161	23	
	No	35	85	111	
Video Game	Yes	86	57	57	
	No	146	63	77	
Stereo System	Yes	211	102	113	
	No	21	18	20	
Computer	Yes	212	109	119	
	No	19	11	15	
Video recorder	Yes	154	85	106	
	No	77	33	28	
DVD / Home	Yes	147	66	81	
Theatre system	No	84	54	52	
Video Camera	Yes	151	79	77	
	No	81	41	56	
PDA	Yes	32	8	4	
	No	199	112	130	

Table 2: Internet usage and use of new Technologies

		N	Mean	Std. Deviation	df	Sig.
Refrigerator with a computer screen to track your inventory	Several times in a day	231	3.1602	2.08209	4.17	0.001
	Once a day	118	2.9068	1.85356		
	a few times a week	134	2.7985	1.83442		
	Once a month	9	1.3333	.70711		
	Less than once a month	12	4.0833	2.31432		
	Never/almost never	7	1.0000	.00000		
	Total	511	2.9667	1.97456		
Mobile phone with ability to pay for daily essentials	Several times in a day	231	3.9394	1.97941	7.11	0.000
	Once a day	116	3.3879	1.94611		
	a few times a week	134	3.5672	1.88164		
	Once a month	9	1.0000	.00000		
	Less than once a month	12	4.4167	2.42930		
	Never/almost never	7	1.4286	1.13389		
	Total	509	3.6405	1.99073		
Internet facility on your TV	Several times in a day	231	4.1169	1.94248	3.19	0.008
	Once a day	117	4.1026	1.84009		
	a few times a week	134	3.8806	1.89199		
	Once a month	9	2.7778	1.78730		
	Less than once a month	12	3.6667	2.05971		
	Never/almost never	7	1.7143	1.25357		
	Total	510	3.9843	1.91974		
Internet facility on your mobile phone	Several times in a day	231	4.0649	1.99785	7.61	0.000
	Once a day	116	3.7845	1.90563		
	a few times a week	132	3.5152	2.00566		
	Once a month	9	1.1111	.33333		
	Less than once a month	12	3.6667	2.30940		
	Never/almost never	7	1.0000	.00000		
	Total	507	3.7535	2.02171		
A system allows you to control lighting, temperature, home security and other appliances over the internet	Several times in a day	230	3.9087	1.94586	5.97	0.000
	Once a day	116	3.3966	1.79312		
	a few times a week	134	3.3209	1.79222		
	Once a month	9	1.4444	1.01379		
	Less than once a month	12	3.5833	2.19331		
	Never/almost never	7	1.7143	.95119		
	Total	508	3.5551	1.90165		
Video phone with internet	Several times in a day	231	3.9697	1.88217	6.73	0.000

capability						
	Once a day	116	3.4741	1.99330		
	a few times a week	134	3.5149	1.92231		
	Once a month	9	1.1111	.33333		
	Less than once a month	12	3.8333	2.48022		
	Never/almost never	7	1.4286	.53452		
	Total	509	3.6483	1.96227		
A composite audio-video system that allows you to play and record video cassettes and DVDs	Several times in a day	231	4.6234	1.90450	6.50	0.000
	Once a day	117	4.2308	2.19083		
	a few times a week	134	4.6493	1.73534		
	Once a month	9	2.3333	2.00000		
	Less than once a month	12	4.3333	2.46183		
	Never/almost never	7	1.4286	.78680		
	Total	510	4.4490	1.99024		

Table 3: Attitudinal Analysis by age

		N	Mean	Std. Deviation	F ratio	Prob
I find that I can manage to solve difficult problems	19 - 25	177	5.3559	1.11950	2.46	0.062
	26 - 35	185	5.1189	1.14537		
	36 - 45	69	4.9565	1.26532		
	46 - 55	60	5.2000	1.00507		
	Total	491	5.1914	1.14286		
I know I can handle complex internet searches	19 - 25	177	5.1921	1.46060	0.90	0.440
	26 - 35	188	4.9840	1.36604		
	36 - 45	67	4.9403	1.31288		
	46 - 55	62	5.0323	1.27996		
	Total	494	5.0587	1.38325		
If I am in trouble I can usually think of a solution	19 - 25	178	5.2528	1.40946	1.01	0.380
	26 - 35	188	5.0904	1.18697		
	36 - 45	67	5.0299	1.15431		
	46 - 55	59	5.3051	1.08682		
	Total	492	5.1667	1.25743		
I avoid confrontations on the net	19 - 25	164	5.0671	1.51123	3.63	0.013
	26 - 35	153	4.8889	1.27504		
	36 - 45	56	5.2500	1.35177		
	46 - 55	51	5.6078	1.44331		
	Total	424	5.0920	1.41372		
If something is complicated I do not bother trying it	19 - 25	170	3.3471	1.57744	2.75	0.042
	26 - 35	182	3.5604	1.58869		
	36 - 45	65	4.0000	1.67705		
	46 - 55	56	3.6607	1.51690		
	Total	473	3.5560	1.59764		
I am a slow learner	19 - 25	172	2.8488	1.57478	2.00	0.110
	26 - 35	179	2.7765	1.44382		
	36 - 45	64	3.2969	1.62988		
	46 - 55	62	2.9839	1.38484		
	Total	477	2.8994	1.51545		
I avoid learning new skills, especially when they look difficult	19 - 25	172	2.4826	1.54266	5.75	0.001
	26 - 35	177	2.5141	1.30169		

	36 - 45	65	3.2923	1.71139		
	46 - 55	60	2.7667	1.15519		
	Total	474	2.6414	1.45912		
Change is more important than continuity	19 - 25	164	4.9146	1.31719	7.27	0.000
	26 - 35	175	4.2914	1.37744		
	36 - 45	63	4.2540	1.40240		
	46 - 55	60	4.5667	1.19840		
	Total	462	4.5433	1.36475		
What is old is retrograde	19 - 25	145	3.7655	1.09299	3.72	0.010
	26 - 35	164	3.3659	1.01537		
	36 - 45	61	3.4426	1.43207		
	46 - 55	58	3.3966	1.05863		
	Total	428	3.5164	1.12548		
One needs more courage for innovation	19 - 25	160	4.7125	1.16763	1.20	0.310
	26 - 35	183	4.8251	1.04409		
	36 - 45	65	5.0308	1.10353		
	46 - 55	65	4.8308	1.39832		
	Total	473	4.8161	1.14887		
He who dares succeeds	19 - 25	166	4.9518	1.28302	2.37	0.070
	26 - 35	176	4.9716	1.09246		
	36 - 45	65	4.9385	.96626		
	46 - 55	62	5.3710	1.02803		
	Total	469	5.0128	1.14534		
Technological progress bring social improvements for people	19 - 25	171	4.9883	1.37622	2.79	0.040
	26 - 35	176	4.6705	1.17810		
	36 - 45	68	4.5294	1.29834		
	46 - 55	64	4.7344	1.33621		
	Total	479	4.7724	1.29708		
Technological progress helps only a few people	19 - 25	174	3.5287	1.45323	1.49	0.210
	26 - 35	183	3.5082	1.15725		
	36 - 45	63	3.8413	1.22087		
	46 - 55	62	3.3871	1.19225		
	Total	482	3.5436	1.28609		
Cultural heritage is more important than technological improvements	19 - 25	173	4.1965	1.37528	0.91	0.440
	26 - 35	178	4.3258	1.23302		
	36 - 45	63	4.2540	1.24393		
	46 - 55	58	4.0172	1.17714		

	Total	472	4.2309	1.28178		
I am curious how the internet works	19 - 25	171	4.4912	1.62469	0.689	0.560
	26 - 35	179	4.4637	1.27754		
	36 - 45	65	4.7231	1.11113		
	46 - 55	58	4.6379	1.45937		
	Total	473	4.5307	1.41407		
I search for information on the internet for different projects	19 - 25	182	5.8132	1.13617	6.91	0.000
	26 - 35	186	5.5806	1.04827		
	36 - 45	66	5.2727	.96946		
	46 - 55	60	5.2000	1.21850		
	Total	494	5.5789	1.11273		
I am creative with computers	19 - 25	179	5.0335	1.39783	6.36	0.000
	26 - 35	184	4.5109	1.36702		
	36 - 45	66	4.3333	1.36250		
	46 - 55	60	4.6833	1.22808		
	Total	489	4.6994	1.38405		

Table 4: Attitude toward Internet by age

		N	Mean	F ratio	Prob.
The biggest problem with the internet is being able to find the information I am looking for	19 - 25	180	3.6056	4.391	0.005
	26 - 35	190	3.8947		
	36 - 45	69	3.9710		
	46 - 55	63	4.4127		
	Total	502	3.8665		
The biggest problem with the internet is not being able to find the pages I have visited earlier	19 - 25	182	3.1813	2.788	0.040
	26 - 35	191	3.2723		
	36 - 45	69	3.3333		
	46 - 55	59	3.7966		
	Total	501	3.3094		
The biggest problem with the internet is not being able to determine where I am.	19 - 25	178	2.6966	8.527	0.000
	26 - 35	187	2.9626		
	36 - 45	67	3.3582		
	46 - 55	58	3.5862		
	Total	490	2.9939		
The biggest problem with the internet is encountering links that don't work.	19 - 25	177	4.5480	0.993	0.396
	26 - 35	189	4.4815		
	36 - 45	66	4.1970		
	46 - 55	55	4.4727		
	Total	487	4.4661		
Learning to use the internet would be easy for me	19 - 25	169	5.7751	4.935	0.002
	26 - 35	174	5.4828		
	36 - 45	67	5.2388		
	46 - 55	59	5.1525		
	Total	469	5.5117		
I would find it easy to use the internet to do what I want to do	19 - 25	178	5.6910	5.213	0.001
	26 - 35	184	5.4457		
	36 - 45	68	5.1912		
	46 - 55	64	5.1719		
	Total	494	5.4636		
I can find information on the internet easily	19 - 25	183	5.6503	5.493	0.001
	26 - 35	190	5.3053		
	36 - 45	69	5.2029		

	46 - 55	63	5.1270		
	Total	505	5.3941		
It would be easy for me to become skilful at using the internet	19 - 25	177	5.7288	8.046	0.000
	26 - 35	185	5.2703		
	36 - 45	66	5.2576		
	46 - 55	62	4.9677		
	Total	490	5.3959		
I am an experienced internet user	19 - 25	181	5.4530	3.528	0.015
	26 - 35	188	5.3404		
	36 - 45	69	4.9420		
	46 - 55	63	4.9841		
	Total	501	5.2814		
I know quite well how the internet works	19 - 25	179	5.2402	2.035	0.108
	26 - 35	184	4.9457		
	36 - 45	67	4.8657		
	46 - 55	63	5.0476		
	Total	493	5.0548		
The internet is as essential in my life as any other thing	19 - 25	180	4.5778	1.429	0.233
	26 - 35	187	4.2406		
	36 - 45	66	4.3939		
	46 - 55	59	4.5763		
	Total	492	4.4248		
The internet has saved me lots of time	19 - 25	180	5.2889	4.422	0.004
	26 - 35	186	5.1989		
	36 - 45	69	4.6812		
	46 - 55	64	4.7500		
	Total	499	5.1022		
It would be difficult to imagine life without the internet	19 - 25	182	4.7308	1.540	0.203
	26 - 35	187	4.6791		
	36 - 45	68	4.3529		
	46 - 55	63	4.2857		
	Total	500	4.6040		
It is easier to get information from the internet	19 - 25	181	5.5580	3.111	0.026
	26 - 35	187	5.5080		
	36 - 45	68	5.1912		
	46 - 55	62	5.1290		
	Total	498	5.4357		

Table 5: Problems with Internet experienced by Sample respondents

Item	Cluster	N	Mean	Std. Deviation	F-ratio
The biggest problem with the internet is being able to find the information I am looking for	Moderate users	104	4.01	1.49	5.58***
	Competent users	148	3.50	1.73	
	Traditional users	35	3.37	1.53	
	Information searchers	82	4.43	1.65	
	Ambiguous users	115	3.89	1.43	
	Total	484	3.85	1.61	
The biggest problem with the internet is not being able to find the pages I have visited earlier	Moderate users	104	3.86	1.52	7.81***
	Competent users	148	2.93	1.43	
	Traditional users	35	2.71	1.38	
	Information searchers	82	3.12	1.45	
	Ambiguous users	115	3.37	1.47	
	Total	484	3.25	1.50	
The biggest problem with the internet is not being able to determine where I am.	Moderate users	104	3.34	1.41	5.43***
	Competent users	148	2.53	1.50	
	Traditional users	35	2.57	1.55	
	Information searchers	82	2.83	1.43	
	Ambiguous users	115	2.98	1.27	
	Total	484	2.86	1.45	
The biggest problem with the internet is encountering links that don't work.	Moderate users	104	4.46	1.52	3.02*
	Competent users	148	4.40	1.48	
	Traditional users	35	4.77	1.84	
	Information searchers	82	3.80	1.71	
	Ambiguous	115	4.26	1.78	

	users				
	Total	484	4.31	1.65	
Learning to use the internet would be easy for me	Moderate users	104	4.58	1.62	10.31***
	Competent users	148	5.88	1.88	
	Traditional users	35	5.28	2.10	
	Information searchers	82	4.94	2.08	
	Ambiguous users	114	4.65	1.83	
	Total	483	5.11	1.94	
I would find it easy to use the internet to do what I want to do	Moderate users	104	4.63	1.52	14.14***
	Competent users	148	5.87	1.42	
	Traditional users	35	5.86	0.87	
	Information searchers	82	5.28	1.50	
	Ambiguous users	115	5.15	1.23	
	Total	484	5.33	1.46	
I can find information on the internet easily	Moderate users	104	4.75	1.06	25.91***
	Competent users	148	6.02	1.03	
	Traditional users	35	5.88	0.83	
	Information searchers	82	5.00	1.21	
	Ambiguous	115	5.24	1.18	
	Total	484	5.38	1.20	
It would be easy for me to become skilful at using the internet	Moderate users	104	4.57	1.38	12.41***
	Competent users	147	5.81	1.64	
	Traditional users	34	5.76	1.28	
	Information searchers	82	4.98	1.63	
	Ambiguous users	115	5.07	1.33	
	Total	482	5.22	1.56	
I am an experienced internet user	Moderate users	104	4.42	1.39	31.76***
	Competent users	148	6.13	1.07	
	Traditional	34	5.67	1.34	

	users				
	Information searchers	82	4.82	1.58	
	Ambiguous users	115	5.01	1.22	
	Total	483	5.24	1.45	
I know quite well how the internet works	Moderate users	104	4.25	1.42	23.74***
	Competent users	147	5.79	1.11	
	Traditional users	34	5.32	1.38	
	Information searchers	82	4.46	1.827	
	Ambiguous users	115	4.66	1.41	
	Total	482	4.93	1.54	
The internet is as essential in my life as any other thing	Moderate users	104	3.63	1.56	13.24***
	Competent users	147	5.06	1.69	
	Traditional users	34	4.79	1.82	
	Information searchers	82	3.84	2.02	
	Ambiguous users	115	4.29	1.59	
	Total	482	4.34	1.80	
The internet has saved me lots of time	Moderate users	104	4.33	1.41	19.47***
	Competent users	148	5.79	1.38	
	Traditional users	34	5.62	1.90	
	Information searchers	82	4.46	1.68	
	Ambiguous users	115	4.99	1.43	
	Total	483	5.05	1.61	
It would be difficult to imagine life without the internet	Moderate users	104	3.76	1.56	16.60***
	Competent users	148	5.32	1.61	
	Traditional users	34	5.29	1.83	
	Information searchers	82	4.00	2.02	
	Ambiguous users	115	4.67	1.73	
	Total	483	4.60	1.83	
It is easier to get information from	Moderate users	104	4.57	1.44	23.45***

the internet					
	Competent users	148	6.04	0.96	
	Traditional users	34	5.91	1.44	
	Information searchers	82	4.95	1.53	
	Ambiguous users	114	5.38	1.27	
	Total	482	5.37	1.41	

Table 6: Visitor numbers by origin

Top 10 Markets	YE Sep 98	YE Sep 99	YE Sep 00	YE Sep 01	YE Sep 02	YE Sep 03	YE Sep 04	YE Sep 05	YE Sep 06
Total (Autobase)	1,322,972	1,413,957	1,547,856	1,710,783	1,723,587	1,870,462	2,118,290	2,204,084	2,173,808
% Change	-	+6.9%	+9.5%	+10.5%	+0.7%	+8.5%	+13.2%	+4.1%	-1.4%
Australia	427,872	457,163	485,214	539,207	518,569	607,833	746,759	797,848	800,315
% Change	-	+6.8%	+6.1%	+11.1%	-3.8%	+17.2%	+22.9%	+6.8%	+0.3%
UK	144,677	153,662	174,506	192,824	213,542	236,467	264,067	281,477	264,466
% Change	-	+6.2%	+13.6%	+10.5%	+10.7%	+10.7%	+11.7%	+6.6%	-6.0%
United States Of America	144,250	156,572	181,466	182,943	171,804	190,049	199,014	194,368	198,604
% Change	-	+8.5%	+15.9%	+0.8%	-6.1%	+10.6%	+4.7%	-2.3%	+2.2%
Japan	148,665	142,435	147,908	158,687	147,106	152,906	160,106	150,796	132,023
% Change	-	-4.2%	+3.8%	+7.3%	-7.3%	+3.9%	+4.7%	-5.8%	-12.4%
Korea, Republic Of	25,940	22,446	42,806	69,059	84,961	97,789	101,120	98,465	92,809
% Change	-	-13.5%	+90.7%	+61.3%	+23.0%	+15.1%	+3.4%	-2.6%	-5.7%
China, People's Republic Of	14,353	12,791	26,876	38,234	59,580	61,446	80,099	82,847	93,807
% Change	-	-10.9%	+110.1%	+42.3%	+55.8%	+3.1%	+30.4%	+3.4%	+13.2%
Germany	39,579	40,892	45,213	50,994	47,163	52,035	55,517	52,779	55,312
% Change	-	+3.3%	+10.6%	+12.8%	-7.5%	+10.3%	+6.7%	-4.9%	+4.8%
Canada	28,813	31,744	32,737	35,954	36,183	36,829	39,051	40,286	40,128
% Change	-	+10.2%	+3.1%	+9.8%	+0.6%	+1.8%	+6.0%	+3.2%	-0.4%
Taiwan	42,792	46,830	45,490	32,617	37,223	26,556	24,942	26,110	25,350
% Change	-	+9.4%	-2.9%	-28.3%	+14.1%	-28.7%	-6.1%	+4.7%	-2.9%
Singapore	24,380	28,734	35,355	32,679	28,110	27,970	28,239	27,837	24,356
% Change	-	+17.9%	+23.0%	-7.6%	-14.0%	-0.5%	+1.0%	-1.4%	-12.5%
Other	281,652	320,688	330,285	377,586	379,345	380,582	419,376	451,271	446,638
% Change	-	+13.9%	+3.0%	+14.3%	+0.5%	+0.3%	+10.2%	+7.6%	-1.0%

Source: Tourism New Zealand, International Visitor Survey Statistics

Table 7: Number of years experience using the Internet (sample respondents)

No. of Years using the Internet		Frequency	Percent
	.00	12	2.32
	1.00	5	1.00
	2.00	17	3.37
	3.00	10	1.98
	4.00	57	11.29
	5.00	70	13.86
	6.00	86	17.03
	7.00	70	13.86
	8.00	72	14.26
	9.00	50	9.90
	10.00	19	3.76
	11.00	10	1.98
	12.00	8	1.58
	13.00	5	1.0
	14.00	7	1.39
	16.00	1	.2
	18.00	2	.4
	21.00	2	.4
	22.00	2	.4
	Total	505	97.7
	Missing System	12	2.3
Total		517	100.0

Table 8: Comparison of Mean scores between places of data Collection

	Place of data collection	N	Mean	Std. Deviation	Prob
I find that I can manage to solve difficult problems	Auckland Viaduct	166	4.9759	1.56070	0.97
	Christchurch Airport	349	4.9713	1.52537	
I know I can handle complex Internet searches	Auckland Viaduct	167	4.8503	1.69560	0.88
	Christchurch Airport	349	4.8739	1.66303	
If I am in trouble I can usually think of a solution	Auckland Viaduct	166	5.0663	1.40620	0.28
	Christchurch Airport	349	4.9026	1.68384	
I avoid confrontations on the net	Auckland Viaduct	166	4.0361	2.45417	0.23
	Christchurch Airport	349	4.2980	2.24825	
If something is complicated I do not bother trying it	Auckland Viaduct	166	3.0602	1.75706	0.06
	Christchurch Airport	349	3.3840	1.82145	
I am a slow learner	Auckland Viaduct	167	2.4970	1.65331	0.06
	Christchurch Airport	349	2.7851	1.62672	
I avoid learning new skills, especially when they look difficult	Auckland Viaduct	167	2.1377	1.54419	0.03
	Christchurch Airport	349	2.5788	1.56385	
Change is more important than continuity	Auckland Viaduct	167	3.9760	2.01187	0.37
	Christchurch Airport	348	4.1379	1.81998	
What is old is retrograde	Auckland Viaduct	165	2.9636	1.67802	0.95
	Christchurch Airport	346	2.9538	1.65000	
One needs more courage for innovation	Auckland Viaduct	165	4.6000	1.55312	0.19
	Christchurch Airport	348	4.3937	1.73211	
He who dares succeeds	Auckland Viaduct	165	4.6485	1.70654	0.70
	Christchurch Airport	348	4.5833	1.78900	
Technological progress bring social improvements for people	Auckland Viaduct	166	4.4398	1.76652	0.82
	Christchurch Airport	348	4.4770	1.69149	
Technological progress helps only a few people	Auckland Viaduct	167	3.1916	1.38813	0.16
	Christchurch Airport	349	3.3897	1.56378	
Cultural heritage is more important than technological improvements	Auckland Viaduct	163	4.0675	1.74317	0.15
	Christchurch Airport	349	3.8424	1.61382	
I am curious how the Internet works	Auckland Viaduct	167	4.1497	1.90316	0.81
	Christchurch Airport	349	4.1920	1.80049	
I search for information on the Internet for different projects	Auckland Viaduct	167	5.1377	1.65710	0.02
	Christchurch Airport	349	5.4756	1.46123	
I am creative with computers	Auckland Viaduct	167	4.4671	1.73478	0.98
	Christchurch Airport	349	4.4699	1.66172	

Table 9: Group Statistics

	Place of data collection	N	Mean	Std. Deviation	Prob
Business	Auckland Viaduct	162	4.6543	2.15061	0.08
	Christchurch Airport	347	4.2882	2.23554	
Education	Auckland Viaduct	164	4.3537	1.83271	0.85
	Christchurch Airport	347	4.3862	1.76695	
Shopping	Auckland Viaduct	165	3.2061	1.60600	0.38
	Christchurch Airport	348	3.0718	1.63641	
Entertainment	Auckland Viaduct	165	3.8424	1.77706	0.46
	Christchurch Airport	347	3.9769	2.00708	
Communication with others by email	Auckland Viaduct	165	5.6424	1.55372	0.03
	Christchurch Airport	349	5.9628	1.51289	
Communication with others through chat rooms	Auckland Viaduct	162	2.2469	1.67577	0.67
	Christchurch Airport	346	2.1792	1.73864	
Gathering information for personal needs	Auckland Viaduct	165	4.6485	1.55707	0.63
	Christchurch Airport	349	4.7192	1.57064	
Gathering vacation related information	Auckland Viaduct	163	3.9387	1.66182	0.20
	Christchurch Airport	347	4.3055	1.64968	
Playing games on the Internet	Auckland Viaduct	163	1.9387	1.38195	0.11
	Christchurch Airport	346	2.1850	1.70605	
Making travel bookings	Auckland Viaduct	165	3.6303	1.60876	0.19
	Christchurch Airport	346	3.8237	1.55875	
In which year did you start using the Internet?	Auckland Viaduct	160	1996.9750	2.51023	0.27
	Christchurch Airport	345	1997.2812	3.06505	
The biggest problem with the Internet is being able to find the information I am looking for	Auckland Viaduct	166	3.8554	1.55803	0.47
	Christchurch Airport	350	3.7429	1.70526	
The biggest problem with the Internet is not being able to find the pages I have visited earlier	Auckland Viaduct	166	3.4458	1.47096	0.03
	Christchurch Airport	350	3.1286	1.53583	
The biggest problem with the Internet is not being able to determine where I am.	Auckland Viaduct	166	3.1325	1.53165	0.01
	Christchurch Airport	350	2.7286	1.42150	
The biggest problem with the Internet is encountering links that don't work.	Auckland Viaduct	165	4.5152	1.59880	0.02

	Christchurch Airport	350	4.1200	1.72871	
Learning to use the Internet would be easy for me	Auckland Viaduct	165	5.1273	1.85500	0.54
	Christchurch Airport	349	5.0143	2.02352	
I would find it easy to use the Internet to do what I want to do	Auckland Viaduct	166	5.2711	1.44977	0.87
	Christchurch Airport	350	5.2486	1.57830	
I can find information on the Internet easily	Auckland Viaduct	166	5.3133	1.24489	0.84
	Christchurch Airport	350	5.2886	1.36247	
It would be easy for me to become skillful at using the Internet	Auckland Viaduct	164	5.2683	1.38837	0.27
	Christchurch Airport	350	5.0971	1.74827	
I am an experienced Internet user	Auckland Viaduct	165	5.2303	1.59505	0.39
	Christchurch Airport	350	5.1029	1.58277	
I know quite well how the Internet works	Auckland Viaduct	164	4.9024	1.75569	0.65
	Christchurch Airport	350	4.8314	1.57256	
The Internet is as essential in my life as any other thing	Auckland Viaduct	165	4.1455	1.86840	0.43
	Christchurch Airport	349	4.2837	1.85612	
The Internet has saved me lots of time	Auckland Viaduct	165	4.9394	1.68457	0.93
	Christchurch Airport	350	4.9543	1.69042	
It would be difficult to imagine life without the Internet	Auckland Viaduct	165	4.3273	1.92912	0.20
	Christchurch Airport	350	4.5571	1.90487	
It is easier to get information from the Internet	Auckland Viaduct	165	5.2121	1.51331	0.49
	Christchurch Airport	349	5.3095	1.50342	
Internet advertisements	Auckland Viaduct	165	1.5515	1.03833	0.90
	Christchurch Airport	348	1.5632	1.00662	
Direct emails from marketers of products	Auckland Viaduct	165	1.6909	1.07419	0.96
	Christchurch Airport	347	1.6859	1.10799	
Internet search engines (like Yahoo, Google, Alta Vista)	Auckland Viaduct	165	5.3394	1.69827	0.46
	Christchurch Airport	347	5.4582	1.72381	
Hyperlinks on pages you visit	Auckland Viaduct	165	4.0970	1.91026	0.01
	Christchurch Airport	348	3.5575	1.92050	
Using Internet helps me plan better vacations	Auckland Viaduct	165	4.4970	1.90194	0.13

	Christchurch Airport	350	4.7629	1.80044	
I like the idea of online shopping	Auckland Viaduct	165	4.1273	1.82183	0.67
	Christchurch Airport	349	4.2034	1.93913	
Defining search on the Internet is complicated	Auckland Viaduct	165	3.4424	1.48715	0.98
	Christchurch Airport	350	3.4400	1.68104	
Internet searches are time consuming	Auckland Viaduct	164	4.0122	1.69441	0.80
	Christchurch Airport	350	3.9714	1.72103	
I search for vacation destinations on the Internet	Auckland Viaduct	164	4.1707	1.95849	0.98
	Christchurch Airport	349	4.1662	2.03303	
I find buying over the internet is more fun than buying in a store	Auckland Viaduct	145	2.2966	1.71239	0.01
	Christchurch Airport	349	2.7106	1.68647	
I enjoy buying over the Internet	Auckland Viaduct	145	3.5379	1.74013	0.16
	Christchurch Airport	348	3.2759	1.96476	
to what extent did you use the Internet to gather travel related information?	Auckland Viaduct	158	4.2658	2.03916	0.05
	Christchurch Airport	347	4.6282	1.89999	
how much of travel planning did you do through the Internet?	Auckland Viaduct	159	3.5157	1.14104	0.14
	Christchurch Airport	348	3.2443	1.15915	
Have you had any negative experiences with a purchase over the Internet?	Auckland Viaduct	167	1.83	.448	0.01
	Christchurch Airport	349	1.93	.294	
In general, how concerned are you about the security on the Internet?	Auckland Viaduct	164	5.2927	1.62411	0.03
	Christchurch Airport	350	4.9400	1.66864	
How concerned are you about security in relation to making a purchase over the Internet?	Auckland Viaduct	165	5.3636	1.58534	0.01
	Christchurch Airport	350	4.9200	1.81348	
How concerned are you that your personal information will be kept confidential?	Auckland Viaduct	165	5.2364	1.96584	0.19
	Christchurch Airport	350	5.0029	1.85197	
How concerned are you that your credit card details will be secure?	Auckland Viaduct	165	5.4727	1.87266	0.16

	Christchurch Airport	350	5.2143	2.00639	
How concerned are you that the products / services will be as good as they appear on the Internet?	Auckland Viaduct	165	4.9758	1.90938	0.14
	Christchurch Airport	350	4.7029	1.95735	
It is risky to buy over the Internet	Auckland Viaduct	164	4.1707	1.48865	0.14
	Christchurch Airport	349	3.9456	1.63648	
I sometimes shop in stores for goods and then buy them over the Internet	Auckland Viaduct	164	2.4329	1.98501	0.04
	Christchurch Airport	349	2.7994	1.87080	
I use on-line banking regularly	Auckland Viaduct	164	4.7744	2.18564	0.06
	Christchurch Airport	349	4.3524	2.42571	
On line shopping is not safe	Auckland Viaduct	163	3.5399	1.65643	0.04
	Christchurch Airport	349	3.2120	1.65598	