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The Factors that Influence Australian Consumers' Online

Shopping Adoption: An Empirical Analysis

A thesis

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Abstract of a thesis submitted in partial fulfilment of the requirements for the Degree

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The Factors that Influence Australian Consumers' Online Shopping Adoption:
An Empirical Analysis

By Qi Long (Nicole)

The rapid advances in the Internet technology have created a growing capability for consumers to shop online. Online shopping is a global trend and the shopping channel is becoming more evident in the Australian economy. However, to date only a few studies in various cultural settings have investigated the factors that influence consumers to shop online and none have been done on the perceptions of Australian consumers. This study seeks to close this research gap by identifying and analysing the main decision factors influencing consumers' online shopping adoption in Australia.

Primary data was collected using a self-administrated questionnaire in Sydney, Australia from 15th October to 28th October, 2015. The data was analysed using exploratory factor analysis and logit regression. The decision factors were ranked by importance based on the marginal effects results of the logit regression. Seven factors have been identified that impact on the choice of online shopping: websites, perceived risks, service quality, brand image, product variety, country-of-origin and demographics.

This research contributes to the empirical literature on online shopping behaviour from a theoretical perspective as the modelling can be used as a framework for studies

undertaken in different cultural environments. The results of the study also enable

retailers to make informed decisions on their existing or future shopping channels.

The conclusions drawn from this research also assist online marketers to formulate

effective marketing strategies to enhance consumers' online shopping experiences.

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Chapter 1 Introduction

1.1 Introduction

Australia is categorized as one of the world's developed and wealthiest countries (2016, Index of Economic Freedom), and it has the world's 12th largest economy. In 2014, Australia had the world's fifth-highest per capita income, with the second-highest human development index, and ranks highly in many international comparisons of national performance (IMF, 2014). In addition, Australia is the world's 6th largest country by total area, at 7.6 million square kilometres, and had a population of 24 million in February 2016. The majority of the population reside in Sydney (approximately 4.84 million), Melbourne (approx. 4.44 million), Brisbane (approx. 2.27 million), Perth (approx. 2.02 million) and Adelaide (approx. 1.30 million) (Australian Bureau of Statistics, 2016). Moreover, Australia is culturally diverse and has a large and diverse range of natural resources.

Australia has experienced the explosion of the Internet and World Wide Web (WWW) as a business medium. A primary use for this medium is in marketing goods and services. The Internet and WWW have become an important distribution channel for many successful global enterprises (Schlegelmilch, 2016), and Australian organizations are no exception.

Globally, the Internet has altered the nature of consumer shopping behaviour and staff-consumer shopping relationships, and has many advantages over traditional shopping delivery channels. Therefore, the Internet has become a major threat to traditional retail store outlets (Hsiao, 2009).

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Also, the Internet has rapidly evolved into a global phenomenon and is affecting workplaces and the marketplace. Only a few years ago, most people shopped in their local stores complete with parking and weather problems, long lines, and wobbly shopping carts. Even when online shopping was available, people felt uncomfortable using their credit cards and giving their personal information to cyber-shops (Pi & Sangruang, 2011). However, doing business online has changed over the last 20 years.

Katawetawaraks and Wang (2011) maintain that from a marketing perspective, the Internet is being used in two ways. Companies use the Internet to communicate with consumers. In turn, consumers use the Internet for a variety of purposes including looking for product information before making a purchase decision online. The growing interest in understanding what factors affect consumers' decisions to make purchases online has been stimulated by the rapid increase in online retail sales. (Clemes, Gan, & Zhang, 2014).

Shopping on the Internet normally takes less time than shopping in traditional retail outlets because of the many time-consuming activities associated with the latter (e.g., driving to the store, finding a parking space, waiting in line at the check-out) (Bellman et al., 1999; Rohm & Swaminathan, 2004; Punj, 2012). In addition, shopping online also enables consumers to save money. The money-saving potential of the Internet is often stated by many consumers as an important reason for shopping online (Punj, 2012).

However, Internet users' attitudes about online retail shopping are not entirely consistent. Internet users worry about sending personal or credit card information over the Internet. If the safety of the online shopping environment were improved, the number of online shoppers would increase (Horrigan, 2008). In addition, more than

half of Internet users encounter frustrations in the course of online shopping (Horrigan, 2008).

1.2 E-Commerce in Australia

In 2015, the Internet had approximately 2.8 billion users worldwide, of which 29 percent reside in the USA and Europe. (Meeker, 2015). In Australia, 93.1 percent of all households had access to the Internet in 2015, up from 83 percent in 2012-2013. In 2014-2015 for those householders with children under 15 years, 97 percent had access to the Internet (Australian Bureau of Statistics, 2015).

Australia may become a mecca for online businesses with more web stores opening up and more average online spending than anywhere else in the world. Australian shoppers also increased their spending on online shopping with sales close to AUSD142 per order in 2012 - up from AUSD118 in 2011 (News Australia, 2013). The research is supported by other recent reports, including National Australia Bank's Online Retail Index, which shows that Australians spent AUSD 12.8 billion shopping online in 2012, up by 23 percent from 2011 (Technology, 2013). The Australian Bureau of Statistics figures show that AUSD 258 billion was spent on retail purchases in 2014, with Roy Morgan estimating nine percent of that being spent online. (Roy Morgan Research, 2014). In the 12 months to September 2014, 38 percent of Australians over 14 years (7,387,000 people) bought one or more products over the Internet in an average four-week period. Almost two-thirds of them (64%, or 4,730,000 people) purchased locally (Australia), while 39 percent (2,896,000) purchased from overseas websites. (Australian Bureau of Statistics, 2014; Roy Morgan Research, 2014).

Only six out of 51 product categories were more commonly purchased from overseas websites: video games and consoles, e-books, books, jewellery and watches, TV show downloads and fashion accessories. The top-selling products purchased locally online are tickets to movies, shows, and other events (purchased by 830,000 Australians in an average four-week period), followed by travel items such as tickets and accommodation (785,000 people), and fast food/meals (569,000), all of which would usually be impractical or inappropriate to buy via international websites. E-books and books were the most popular items purchased from overseas online retailers, which is attributed to the favourable prices offered on websites like Amazon and the Book Depository, compared with those of Australian retailers (Australian Bureau of Statistics, 2014; Roy Morgan Single Source Australia, 2014).

1.3 Problem Statement

The recent adoption of electronic commerce (e-commerce), mobile commerce (m-commerce) and even Facebook-commerce (f-commerce) platforms by Australian shoppers indicates that retail solutions are adapting to changing consumer preferences. Online retail sales are accounting for a growing proportion of the Australian retail market (Euromonitor International, 2012). Researchers at Frost and Sullivan have suggested that online shopping will account for nearly 10% of all retail sales in Australia by 2017, up from 7 percent in 2013. Online retail sales in 2013 for Australia reached AUS$18.3bn and Frost and Sullivan forecast a compound annual growth rate of 13.1 percent from 2013 to 2018 (Frost & Sullivan, 2013).

However, there is a conceptual gap in the literature on how Australian consumers perceive online shopping and there is growing interest in understanding the factors

that have an impact on consumers' decision processes for online shopping. In a recent sample, the two most common reasons cited by Australians for purchasing goods and services online were convenience (67%) and it's cheaper (47%). Other reasons noted included: access to a better range of goods and services, some goods available only online, goods delivered to my door, and the ability to compare prices online (Commonwealth of Australia, 2011).

To date, published empirical research investigating Australian's online shopping behaviour is sparse. In particular, the factors influencing Australian's decisions to shop or not to shop online, have not been empirically identified.

1.4 Research Objectives

The purpose of this research is to empirically investigate the factors that influence business to consumer (B2C) online shopping adoption in Australia. The specific objectives of this research are:

- To identify the factors which influence consumer adoption of online shopping in Australia.
- To determine the order of importance of the factors that affect consumers' adoption of online shopping in Australia.
- To examine whether different demographic characteristics have an impact on the adoption of online shopping in Australia.

1.5 Research Contribution

A theoretical research model of the factors that are predicted to influence consumers' decisions to shop, or not to shop, online has been developed for this research. This framework provides an improved understanding of the consumers' decision-making processes as it relates to online and non-online shopping decisions in Australia's e-commerce industry. The information obtained from the empirical analysis will benefit future researchers who examine various aspects of consumer behaviour in e-commerce.

From a practical perspective, this findings of this current research will assist e-marketers and retailers in Australia to develop appropriate marketing strategies in order to maintain their current consumer base and attract new consumers. While online retail shopping is increasing in Australia, it is currently only 7 percent of total retail sales. This percentage if far below the percentage rates of many other developed countries (Ewing, 2014). The results of this research will aid marketing managers to better understand the nexus between e-commerce and Australian consumers' decisions to shop or not to shop online.

1.6 Structure of Thesis

The thesis structure is composed of six chapters.

Chapter 1 provides an overview of the research which consists of the background of e-commerce in Australia, the problem statement, the research objectives, and the theoretical and practical contributions.

Chapter 2 presents the literature regarding online consumer behaviour and factors that influence the adoption of online shopping in the e-commerce industry.

Chapter 3 illustrates the conceptual research model based on the review of the literature and the focus group discussions and develops 14 testable hypotheses in order to satisfy the three research objectives.

Chapter 4 specifies the research data and methodology used to test the hypotheses, and includes the data collection and the data analysis procedures.

Chapter 5 describes the results of the data analysis.

Chapter 6 presents the conclusion of this research, the theoretical implications, the managerial implications, the limitations of this research, and the direction for future research.

Chapter 2 Literature Review

2.1 Introduction

This chapter overviews the extant literature on the consumer decision process, online shopping, and online shopping behaviour. The major factors that may influence the decisions of consumers to shop, or not to shop online are also featured in the literature review. These factors are: website factors, perceived risk, service quality, brand image, convenience, price, product variety, country-of-origin, subjective norms and demographic characteristics.

2.2 The Consumer Decision-Making Process

Understanding the process of consumer decision-making and the behaviours of online consumers is crucial for practitioners to compete in the rapidly expanding virtual market place (Camillo et al., 2015). In addition, understanding the consumer decision-making process is also important as it may help companies clarify their online retail strategies for web site design, online advertising, market segmentation, sales promotion, product variety and after sale service strategies (Clemes et al., 2014).

In 1910, John Dewey introduced the five-stage decision process and it still serves as the central pillar of a popular consumer behaviour model (Dewey, 1910; Engel, Kollat & Blackwell, 1968). Dewey's decision-making paradigm viewed the consumer as an information processor, manipulating information through the various stages of the decision process, and suggested that the process, at least theoretically, applied to the full range of consumer decisions. Dewey's (1910) five stage decision-making process

for goods included: problem recognition, search, evaluation of alternatives, choice and outcome.

Engel, Kollat and Blackwell (1973) borrowed conceptually from Dewey's five stage consumer decision-making process, and used the framework to view the consumer as an information processor, manipulating information relevant to a task to achieve their goals. The authors postulated that consumer behaviour towards goods could be understood by looking at the entire sequence of variables affecting the information manipulation in the decision-making process (Bettman, 1974).

Blackwell, Miniard and Engel (2001) developed a seven-stage consumer decision process model based on Dewey's five stage process to analyse how individuals sort through facts and influences to make logically consistent decisions. This seven stage model illustrates the stages consumers normally go through when making decisions; need recognition, search for information, pre-purchase evaluation of alternatives, purchase, consumption, post-consumption evaluation and divestment (Blackwell et al., 2001).

These models provide a more thorough understanding of consumer behaviour by examining the entire sequence of variables that have an impact on the information manipulation in the decision-making process (Quester, Neal, Pettigrew, Grimmer, Davis & Hawkin, 2007). Research on decision-making has identified five phases in the decision-making process: problem recognition, search for information, evaluation of alternatives, choice, and outcome of the choice (Pope, Brennan & Voges, 2007). Dalrymple and Parsons (2000), Kotler (1997) and Quester et al. (2007) explained the process as: problem recognition, information search, evaluation of alternatives, purchase, and post-purchase behaviour. The five-stage buying decision-making

process model is widely used scholars to improve their understanding of consumers and their behaviour (Comegys, Hannula & Vaisanen, 2006).

2.2.1 The Problem Recognition Stage

Blackwell et al. (1968) explained problem recognition is the crucial first stage in the consumer decision-making process. Problem recognition is based on the interaction between two main components: the desired state and the actual state. The former refers to the way a person would like a need to be met whereas the latter has to do with the degree to which a perceived need is actually being met. Problem recognition occurs, therefore, when a significant difference develops between a person's desired state with respect to a particular want or need

Quester et al. (2007) note that there is no need for a consumer decision unless there is recognition of a problem. Problem recognition can be aroused by previous experiences stored in memory, basic motives, or cues from references groups and family (Dalrymple & Parsons, 2000).

2.2.2 Information Search

Once a consumer has recognised the existence of a problem and is ready to enter the purchase decision-making process, the consumer advances to the information search and evaluation phase. Consumers can search information from both internal and external sources such as: marketer-dominated sources which stem from advertising, sales-people, packaging, in-store signage; consumer personal sources which include friends, family and others perceived to have some expertise in the product category of interest; and neutral sources which include portions of the mass media, government

reports and publications from independent product-testing agencies (Lawson et al., 1996; Blackwell et al., 2001).

2.2.3 Evaluation of Alternative

During the search process the consumer has determined alternatives and has collected relevant information about them; in the evaluation process the consumer compares these alternatives, using available information, so the consumer is ready to make a choice. The range of alternatives available for consideration is initially limited to the consumer's awareness set (Lawson et al., 1996). Consumers use new or pre-existing evaluations stored in memory to choose products, services, brands, and stores which will most likely satisfy their needs (Blackwell et al., 2001). There is no single evaluation process used by all consumers or by one consumer in all kinds of purchases (Kotler, 1997). Blackwell et al. (2001) found that the choices consumers evaluate are influenced by both: (1) individual such as consumer resources, motivation and involvement, knowledge, attitudes and personality, values and lifestyle; and (2) environment influences such as like culture, social class, personal influences, family and situation.

2.2.4 The Purchase Decision

Purchasing processes involve not only the purchase decision, but also activities directly associated with the purchase. The purchase itself involves selecting a course of action based on the preceding evaluation process. Some elements of the purchasing-process stage, such as choosing a store, may actually be viewed as part of search-and-evaluation activities (Lawson et al., 1996). Due to increasing competition,

online retailers are working hard to build more attractive sites and to supply high service quality in order to attract more consumers (Lovelock & Patterson, 2014).

2.2.5 Post-Purchase Behaviour

Consumer decisions continue as the consumer uses the product and evaluates his or her purchase decision and experience with the item, and possibly makes related purchases (Lawson et al., 1996).

Howard and Sheth (1969) note that satisfaction is an important element in the evaluation stage. Satisfaction refers to the buyer's state of being adequately rewarded in a buying situation for the sacrifice he or she has made. Adequacy of satisfaction is a result of matching actual past purchase and consumption experiences with the expected reward from the brand in terms of its anticipated potential to satisfy the consumer's motives.

Comegys et al. (2006) note that the importance of satisfaction is as relevant in an online environment as it is in an offline environment. If consumers are not satisfied with their purchase, there will be a greater chance that consumers complain about the goods or services. Cho, Im, Hiltz, and Fjemestad's (2002) study shows that there are different impacts of post-purchase evaluation factors on the tendency to complain in online shopping environments versus offline shopping environments. The study also illustrates that consumers' repeat purchase intentions are highly related to the propensity to complain, both in the online shopping and offline environment (Clemes et al., 2014; Cho et al., 2002).

2.3 Previous Study of Online Shopping

Identifying the factors that influence consumers to adopt, or not adopt online shopping is important as the information supports the development of online transactions and may encourage more consumers to shop online (Clemes et al., 2014; Chang et al., 2005). Previous studies on consumer's online shopping behaviour have discussed different factors on which consumers focus during their purchasing decisions. For example, based on a survey of 214 online consumers, Ranganathan and Ganapathy (2002) find that website design characteristics, security, privacy, design, and information content are identified as the dominant factors that influence consumers' perceptions of online shopping in the United States. Furthermore, the authors report that security and privacy have a more important influence on consumers' intentions to shop online when compared to the design and information content of the website. Clemes et al (2014) investigate Chinese online consumers' behaviour and their results show that website factors, perceived risks, service quality, convenience, product variety, subjective norms, and consumer resources are the factors that impact on consumers' perception on online shopping.

Based on student sample of 256 drawn from a private university in Indonesia, Pratminingsih et al. (2013) identify that consumer e-satisfaction, e-trust and e-commitment directly influence consumers' loyalty toward online shopping. Similarly, based on a survey of 210 Chinese Internet users, Xu and Huang (2015) find that factors such as perceived product costs, purchase risk, organise and research products within the cart, payment intention, and comparisons with external websites influence cart abandonment in the online shopping process.

Some studies have identified psychological factors affecting consumers' online shopping behaviour. For example, Topaloğlu (2012) finds that consumers in Turkey

enjoy the exploration activity and the searching process. The study illustrates that consumers search the Internet for hedonic values such as adventure/explore, social, idea, value, authority and status. This study also shows that both utilitarian and hedonic values have important impact on purchase intention, and utilitarian value influences purchase intention strongly. In addition, Jiang and Jones (2014) profile international online shoppers on previously unidentified psychological variables that impact on online shopping: consumer confidence, consumer preference, consumer trust on foreign vendors, and perceived global propensity of hosting shopping sites.

Lambrecht and Tucker (2013) in a study on consumers in United Kingdom maintain that one of the vital premises, which encourage more consumers to be involved in e-commerce, is to better understand the dynamics of the consumers' decision process on the choice of online shopping. The following sections discuss factors that have been found to influence consumers' online shopping adoption behaviour.

2.4 Online Shopping Adopting Factors – An Overview

2.4.1 Website Factors

 The development of the Internet has opened up new opportunities for consumers to find an enormous amount of information on a wide variety of goods and services (Quester et al., 2007). Blackwell et al. (2001) state that the content of websites influences how consumers will use the medium in the consumer decision-making process. For example, as consumers receive more complete information, they will become more informed and have greater control over the information search stage of their decision-making process (Quester et al., 2007). Information is the primary raw

material with which the marketer works in an attempt to influence consumers (Bowie & Buttle, 2013).

Knowledge of the perception process involves seven areas; retail strategy, brand name and logo development, media strategy, advertising and package design, development of warning labels and posters, advertising evaluation, and regulation of advertising and packaging (Hawkin et al., 2004). However, most of these strategies cannot be achieved online, which is the reason online apparel retailers have adopted various types of image interactivity technology (IIT), such as close-up pictures or zoom-in functions, mix-and-match functions, and 3D virtual models to enhance consumers' online shopping experience (Kim, Fiore & Lee, 2007). Steuer (1992, p.78) defines interactivity as the *"extent to which users can participate in modifying the form and content of a mediated environment in real time."* Interactivity of a website may offer a wide range of benefits to consumers and marketers, including facilitated communications, customization of presented information, image manipulation, and entertainment (Fiore et al., 2005a). Moreover, the interactive nature of Websites has been credited with positively affecting consumer responses, including increasing the desire to browse and purchase online (Fiore & Jin, 2003; Fiora et al., 2005a; Gehrke & Turban, 1999).

2.4.2 Perceived Risk

One of the major factors that has an impact on purchase decision-making is risk perception (Cox & Rich, 1964; Kotler, 1997; Kotler & Lane, 2006). The popularity of the Internet does not dispel some people's doubts about online shopping due to issues of information privacy and security, as well as credit-card concerns (Hansen,

Jensenb, & Solgaard, 2004; Miyazaki & Fernandez, 2001; Swinyard & Smith, 2003).

Approximately, 80 percent Internet users are reluctant to adopt online shopping because of their inability to examine the product in person; about 50 percent cannot accept online shopping because of the uncertainty of post-purchase services, insecurity of the transaction, and privacy issues (Market Intelligence & Consulting Institute Report, 2009). Haubl and Trifts (2000) note that the Internet is used not only as a search engine, but also as a purchase device. Shopping through the Internet allows consumers to make a decision on an alternative, and complete a transaction. Quester et al. (2007) found that Internet users in Australia have concerns about giving their credit card details online. These concerns imply that online shopping is perceived as risky by consumers. Therefore, perceived risk is a critical antecedent to the hesitation of shoppers to purchase via the Internet (Doolin, Dillon, Thompson, & Corner, 2005; Kuhlmeier & Knight, 2005; Rajamma, 2006).

2.4.2.1 The Concept of Perceived Risk

Since Bauer (1967) introduced the concept of perceived risk in the marketing literature, the theory of "perceived risk" has received constant attention from marketing researchers to explain various issues around consumer behaviour such as: consumer attitudes toward shopping mode (Cox & Rich, 1967; Gillett, 1976), preference for payment options (Ho & Victor, 1994), perception of brand image (Farquhar, 1994), amount of information search options (Gemunden, 1985), formation of brand loyalty (Sheth & Venkatesan, 1968), selection of store (Dash et al., 1976), and evaluation of services (Mitchell & Greatorex, 1993).

The term perceived risk means the individual's subjective belief about potentially negative consequences from his/her decision. In other words, "perceived" is used as opposed to objective outcome distributions of an alternative or a product class with which a consumer is associated. In decision-making theory, risk and uncertainty are distinguished based on the knowledge of occurrence probability (Oliver, 2015). Davis and Olson (1985) defined risk as a situation where a decision-maker has prior knowledge of adverse consequences and occurrence probability. In addition, uncertainty was defined as a situation where a decision-maker knows that possible outcomes for each alternative can be identified. However, there is no knowledge of the probability attached to each.

In consumer research, risk has been conceptualised as a situation where a consumer knows neither the consequences of the alternatives nor the probability of occurrence for the outcome (Dowling, 1986). Cox and Rich (1967) proposed various issues that may influence consumers' perceived uncertainty, which include the following three items:

1) Goal uncertainty: the consumer may be uncertain as to what his/her buying goals are. This goal uncertainty can include uncertainty about:

    - the nature of goals

    - goal acceptance levels

    - relative importance of achieving the goals

    - current degree of goal attainment

2) Product uncertainty: the consumer may be uncertain as to which purchase (product, brand, model, style, and size, etc.) will best match or satisfy the acceptance levels of buying goals.

3) Adverse consequences: the consumer may perceive possible adverse consequences if the purchase is made (or is not made) and the result is a failure to satisfy the buying goals.

Alternatively, Bettman (1973) suggests "inherent risk" and "handled risk". Inherent risk is defined as the latent risk that a product class holds for a consumer. Handled risk is defined as the amount of conflict a product class causes when the purchaser chooses a brand in a usual buying situation. The latter includes the effects of information, the risk reduction processes, and the degree of risk reduction provided by familiar buying situations (Stem, Lamb & Maclachlan, 1977).

2.4.2.2 Types of Perceived Risk

Six components or types of perceived risk have been identified: financial, product performance, social, psychological, physical, and time/convenience loss (e.g., Brooker, 1984; Jacoby & Kaplan, 1972; Peter & Tarpey, 1975; Garner, 1986; Schiffman & Kanuk, 1994). This current research investigates four types of risk – financial, product performance, psychological, and time/convenience loss – that were identified as the most prevalent among Internet shoppers (Liu et al., 2013).

Financial risk is defined as a net loss of money to the consumer (Horton, 1976; Derbaix, 1983; Sweeney et al., 1999), and includes the possibility that one's credit card information may be misused. Thus, consumers' apparent sense of insecurity regarding online credit card usage stems primarily from a concern about financial risk.

Consumers' unwillingness to provide their credit card information over the Internet has been cited as a major obstacle to online purchases (Maignan & Lukas, 1997). Many consumers believe that it is too easy to have a credit card stolen online (Caswell, 2000).

Product performance risk is defined as the loss incurred when a brand or product does not perform as expected (Horton, 1976). Product performance risk may result from a poor product choice due to the shoppers' inability to accurately judge the quality of the product online. The ability to judge product/service quality online may be limited because of the barriers to touching, feeling, and trying the product or service, inaccurate product colours, and insufficient information on quality attributes relevant to the consumer, resulting in increased product performance risk (Omar, 2005). Psychological risk refers to disappointment, frustration, and shame experienced if one's personal information is disclosed. The Internet is often perceived as likely to violate users' privacy, a major concern of many Internet users (Maignan & Lukas, 1997; Jacobs, 1997; Benassi, 1999). The feeling of lack of control over access others may have to personal information, is a psychological risk that prevents many consumers from providing information to website providers in exchange for access to information offered onsite (Jacobs, 1997; Hoffmam et al., 1999).

Time/convenience risk is the loss of time and inconvenience incurred due to difficulty of navigation and/or submitting an order, finding appropriate websites, or delays in receiving the products. Two leading causes of unsatisfactory online experiences that may be thought of as a time/convenience risk include a disorganised or confusing website and pages that are too slow to download (Omarini, 2013). Additionally, potential delays or difficulties in receiving ordered merchandise are a concern for some online shoppers.

2.4.2.3 Perceived Risk in the Context of Online Shopping

Previous research suggests that perceived risk is a key component in the consumers'
Internet shopping decision-making process (Liebermann & Stashevsky, 2002). In the
research of Huang, Schran, and Dubinsky (2004), Mandrik and Bao (2005) and Tan
(1999), perceived risk is defined as a subjective assessment of the probability of
incurring a loss or injury and an unfavourable perception from self and others in the
context of online shopping. Chaudhuri (2000) further classified the components of
perceived risk into functional risk (including performance, financial, and physical risk)
and emotional risk (including psychological and social risk). As with other research,
Chang and Wu (2012) replaced physical risk with security/privacy risk (cf. Dillon &
Reif, 2004). Functional risk captures the likelihood of potential financial loss or
hidden cost (financial risk), the product's failure to meet expectations (performance
risk), and safety or privacy problems resulting from online shopping (security/privacy
risk). Emotional risk captures the likelihood of the purchase being inconsistent with
the individual's self-image (psychological risk) and of less favourable perceptions
from others (social risk) arising from the purchase (Huang, Schrank & Dubinsky,
2004; Pires, Stanton, & Eckford, 2004). Specifically, financial risk is associated with
online sellers' post-purchase service policy declared through the online interface
(Chen & Dubinsky, 2003). Without certain warranties and money-back guarantees,
shoppers may be afraid of losing money from the need to repair or replace products.
Performance risk arises from consumers' inability to examine products in person in
the context of online shopping (Bhatnagar & Ghose, 2004). Security/privacy risk
refers to the possibility of online sellers' lack of financial security, and hackers'
attacks so that shoppers' credit-card information may leak out (Chen & Dubinsky,
2003). In addition, a lack of human interaction can be a barrier to the use of online

shopping that is, social risk (Aldas-Manzano, Lassala-Navarre, Ruiz-Mafe, & Sanz-Blas, 2009).

Perceived risk involves a pre-decision choice and information search (Pires, Stanton, & Eckford, 2004). Consumers can regard perceived risk as a criterion when selecting information process modes. Specifically, if consumers perceive higher risk for a specific behaviour, they can search for more information in order to cope with their uncertainty (Chaudhuri, 2000; Smith & Bristor, 1994). Teo and Yeong (2003) further support the powerful effect of perceived risk on the consumer decision-making process.

2.4.3 Service Quality

2.4.3.1 The Definition of Service Quality

Service quality is described as a form of attitude, as it is a global judgement regarding the superiority of the service (Carman, 1990; Cronin & Taylor, 1992; Parasuraman et al., 1988). Service quality has been described as an abstract and elusive construct (Parasuraman et al., 1985). Despite a number of service quality studies, there is no consensus on the conceptualization and measurement of service quality, the dimensions of service quality, and the content of its dimensions (Brady & Cronin, 2001).

Although there is a lack of consensus on the conceptualization and measurement of service quality, marketing academics generally agree that service quality is a multidimensional, higher order construct (Brady & Cronin, 2001; Clemes et al., 2014; Clemes et al., 2013). Total perceived service quality is used to identify how well the service performance matches consumer's expectations (Santos, 2003).

If online retailers can identify and understand the factors that consumers use to assess service quality and overall satisfaction, the information will help online retailers to monitor and improve company performance (Yang, Peterson, & Cai, 2003).

2.4.3.2 Electronic Service Quality (E-SQ)

In line with the different conceptualizations of electronic services, previous efforts to measure e-service quality display different approaches and outcomes. Juran and Gryna (1970) identified four quality dimensions: capability (does the product perform as expected), availability (is the product usable when needed), reliability (is the product free from failure), and maintainability (is the product easy to repair when broken). These generic quality dimensions for traditional products and services are (at least partially) reflected in many of the following quality scales discussed below. Therefore, they may serve as helpful starting points for substantiating a quality concept for e-services (Bauer et al., 2006).

Barnes and Vidgen (2001) draw upon the Para et al SERVQUAL model in order to generate a pool of quality items and develop the WebQual Scale. Based on an analysis of the online book trade, the authors extract five key dimensions, each of which encompass two sub-dimensions: tangibles (aesthetics, navigation), reliability (reliability, competence), responsiveness (responsiveness, access), assurance (credibility, security), and empathy (communication, understanding the individual). Overall, the developed WebQual scale focuses on technical quality aspects such as ease of use and is therefore more useful for the field of interface design than for holistic quality measurement (Bauer et al., 2006).

Van Riel et al. (2001) proposed a classification of service components based on the "technical/functional quality framework" by Gronroos et al. (2000) and comprised the following aspects: core services, facilitating services, supporting services, complementary services, and user interface. In doing so, the authors' assessed the quality of e-services by measuring customer satisfaction with these components of an e-service.

Based on online and offline focus groups, a sorting task, and an online survey, Wolfinbarger and Gilly (2003) examined the dimensionality of service quality in Internet retailing. Four quality dimensions emerge from exploratory factor analysis (EFA) and confirmatory factor analysis (CFA): fulfillment/reliability, website design, customer service, and security/privacy. The extracted factors are represented by 14 items and explain 70% of the variance of a global e-tail quality (eTailQ) judgment. Despite the high reliability and validity of the developed eTailQ scale, the elimination of quality items referring to hedonic aspects of online shopping has been criticized (Bauer et al., 2006).

2.4.4 Brand Image

Brand is an impression, an inner recognition arising at the time of contact with the product or service. In the Internet shopping environment, if this recognition is negative, the user will not visit that e-store again. From the consumers' perspective, the virtual nature of the Internet disagrees with the sensual recognition with which purchasers are familiar, and aggravates their sense of insecurity. A strong brand can help consumers differentiate the quality of a product to offset this sense of insecurity (Batra et al., 2000). Furthermore, brand equity can assist consumers in interpreting,

storing, and processing the product- or brand-related messages, facilitating differentiation from competitors and providing consumers with more confidence to make purchase decisions due to reduced perceived risks, which can then create customer satisfaction (ELSamen, 2015).

Product brand image impacts consumers' perceptions of product attributes (Chattopadhyay & Basu, 1990; Kwon & Lennon, 2009), and the evaluation of a product's attributes can be influenced by consumers' impressions of the brand's image (Beckwith et al., 1978). As a result, a strong and favourable brand image can positively bias consumers' impressions of product attributes. Online store image may have a similar effect, also biasing consumers' perceptions of product attributes. Hence, a consumer's image of the online store may influence his/her product evaluations when he/she cannot examine the product directly. Given the potential for product brand image to influence perceptions of fashion apparel products, enhancing product brand image may be critical to increasing purchase intentions among online apparel consumers (Simonian et al., 2012).

2.4.5 Convenience

2.4.5.1 Definition of Convenience

In the marketing literature, the concept of convenience was introduced by Copeland (1923), who referred to convenience goods as those that the consumer purchases frequently and immediately at easily accessible stores. Copeland (1923) and other researchers (Bucklin, 1963) have used the convenience construct within the domain of the "convenience" classification of products, which relates to low risk or low involvement in purchasing (Brown, 1989).

Shopping convenience has been one of the principal motivations underlying consumer inclinations to adopt online purchasing (Beauchamp & Ponder, 2010). As consumers allocate less time to shopping and more to other endeavours, their desire for convenience has mounted and their attention has been frequently diverted to virtual shopping as an alternative medium. A crucial point of departure for online retailers who wish to take steps designed to maximise the speed and ease of shopping is to develop an understanding of the salient dimensions of online shopping convenience and the specific domain within each dimension (Jiang et al., 2013).

2.4.5.2 Online Shopping Convenience

Online shopping convenience is one of the major factors that prompt consumers to access online retailers' websites (Ahmad, 2002; Jayawardhena et al., 2007). Much of the prior research on e-commerce has treated the convenience construct as one of the predictor variables (such as customer service and trust), that affects outcome variables (such as customer satisfaction and behavioural intentions) (Colwell et al., 2008; Seiders et al., 2007), or as one of the facets of online service quality (such as accuracy and responsiveness) (Hu et al., 2009).

In traditional retailing service, convenience mainly refers to the speed and ease of shopping. Yale and Venkatesh (1986) developed six classes of convenience: time utilization, accessibility, portability, appropriateness, handiness, and avoidance of unpleasantness. Similarly, Brown (1990) generated five dimensions of convenience: time, place, acquisition, use, and execution convenience.

However, the context of traditional offline shopping does not embrace the unique facets of online shopping convenience, since online retailers utilise the internet as a

shopping platform. The prior literature on online service quality has identified several service convenience features unique to virtual shopping, while indicating some of the ingredients constituting online service quality, such as ease of use, interactivities, information search, the depth and richness of information, and security (Jun et al., 2004; Jiang et al., 2013; Atorough, 2013).

2.4.5.3 Unique Online Shopping Convenience Dimensions

In the empirical research of Jiang et al (2013), five convenience dimensions were proposed and ranked using EFA:

1. Access convenience – this dimension has turned out to be the foremost driver of overall online shopping convenience. Online consumers have the advantage of shopping at any time and are able to make multiple economies of time. They can also purchase products from such locations as home and office, rather than at physical stores. These two types of flexibility – time and place – in turn provide psychological benefits by avoiding crowds, reducing waiting time, and expending less effort in travelling to physical stores.

2. Search convenience – theoretically, online consumers can research products and compare costs without physically visiting multiple locations to find their desired products. All the potential issues associated with product search over the internet can be grouped into four major categories:

    (1) download speed;

    (2) website design;

    (3) search function; and

    (4) product classification.

3. Evaluation convenience – evaluation convenience is associated with the availability of detailed yet easy-to-understand product descriptions by employing various presentation features, such as text, graphics, and video, on the website. In recent years, the overwhelming selection of products and the detailed level of information that is accessible at just one click of the mouse, tends to make online shoppers more sensitive than ever before to "evaluation convenience". In addition, many shopping sites have already established a consumer review system, allowing new visitors to read before ordering other consumer' comments/reviews about their product experience. Such a peer evaluation system has proven to be very effective in saving new consumers evaluation time and effort.

4. Transaction convenience – although there is no queue in online shopping, the online check-out process is, by no means, simple and easy to follow. Simple and convenient online payment methods are essential. Complicated payment methods often prevent online shoppers from completing their purchasing process at the last minute.

5. Possession/post-purchase convenience – this dimension is concerned with consumers' perceptions of time and effort expenditure to possess what they wish and to experience the benefits thereof. Shopping online releases shoppers from the burden of travelling to and from physical stores and thus consumers prefer to purchase online heavy goods and food staples in large quantities to avoid dealing with the actual physical burden.

2.4.6 Price

Price which is an important component of the marketing mix, is a factor used to stimulate the consumer to purchase. Price is also a communicator for negotiations and is a competitive weapon. The consumer can use price as a means to compare products, judge the relative value for the cost, and judge the quality of the products. Price is postulated to have a considerable influence on the consumer during his/her online shopping (Brassington & Pettitt, 2000).

Reibstein (2002) suggested that there were three reasons to explain why prices are lower in online retail stores than in traditional retail stores. Firstly, online shops have lower direct costs associated with supplying the product (i.e., no rent, lower or centralized inventory). Secondly, there is more price competition online – more competitors with more focus on price. Thirdly, the removal of the physical monopoly or the advantage any one retailer might have over another because of his/her proximity to the consumer; that is, the consumer has to incur an additional travel and time cost to go to another retail outlet. The visibility of prices as a comparison variable across e-tailers (the primary focus of most electronic agents), puts added price pressure on each of the e-tailers.

Price has been regarded as either a monetary sacrifice for obtaining a product or a quality signal of a product (Lichtenstein et al., 1993; Zeithaml 1988). Most leading product categories in the context of Internet shopping (tickets, books, music CDs) involve 'low touch' products and 'no touch' services (EIAA, 2006; Lynch et al., 2001). When products are of a low touch nature (search products), product quality remains constant across vendors (Flanagin et al., 2014; Kim, Xu & Gupta, 2012), allowing consumers to focus primarily on price minimisation (Garbarino & Maxwell 2010). The efforts of consumers to seek out the vendors offering the best prices are

facilitated in part by Internet shopbots or comparison websites (BizRate.com). Electronic markets thus allow consumers to easily compare prices across vendors and find the cheapest possible alternative (Kim, Xu & Gupta, 2012).

2.4.7 Product Variety

Product variety generally refers to the depth or breadth of product assortment (Simonson, 1999) – with depth defined as "the number of variants in a product line" and breadth as "the number of product categories offered by a retailer" (Hart & Rafiq, 2006) – and drives shopping satisfaction (Hoch, Bradlow & Wansink, 1999).

Sin and Tse (2002) conclude that there are three reasons why online shoppers value product variety. Firstly, superior assortments can increase the probability that online consumers' needs are satisfied, especially when the product is likely to be sourced from traditional retail channels. Secondly, consumers are able to buy better quality products with a satisfactory price from a wider variety of outlets using a sophisticated search engine. Thirdly, the wider the product choice available online, the more product information people will demand. This may result in more reasonable buying decisions and a higher level of satisfaction.

Prior research has clearly documented the influence of product assortment or variety on consumer behaviour (Hoch, Bradlow, & Wansink, 1999). For example, repeat patronage of a store depends on perceived product variety, which ranks behind only location and price in importance (Arnold, Oum, & Tigert, 1983). Online marketing research also shows that consumers shop online to receive the benefits of the product variety available and that a wide product selection contributes significantly to greater

website satisfaction, better attitudes towards online shopping, and greater store loyalty (Bansal et al., 2004; Koo, 2006; Lim & Dubinsky, 2004).

Product variety also influences product preferences and choices, though the direction of its influence remains in dispute. A larger assortment could be associated with greater satisfaction because it increases the probability of a perfect match between the consumer's preference and available alternatives (Lancaster, 1990). Such an assortment also provides consumers with decision freedom, choice flexibility, and choice optimization (Kahn et al., 2014). In this sense, a bigger product assortment may lead to an increase in online sales (Borle, Boatwright, Kadane, Nunes, & Shmueli, 2005).

2.4.8 Country-of-Origin

Another important consideration in evaluating alternatives products is country-of-origin (COO). Two meta-analytical studies have shown that COO has an effect on buying behaviour (Peterson & Jolibert, 1995; Verlegh & Steenkamp, 1999), which is subject to country-specific and product-specific variations. Country image is defined as "*the overall perception consumers form of products from a particular country, based on their prior perceptions of the country's production and marketing strengths and weaknesses*" (Roth & Romeo, 1992, p. 480). The COO "made in" label, a legal requirement in some instances, remains a marketing tool to leverage strong COO images for products.

Past studies have treated COO as just another extrinsic feature of a product. However, COO may be more than an extrinsic cue or another "feature" if the categorisation theory is applied (Yamauchi & Markman, 2000). Firstly, as Yamauchi and Markman

(2000) observed, the "label" and "feature" are linked to category members through different relationships. A category "label" is connected to each category member by a class-inclusion relationship. Category "features" are connected by partonomic relationships. Secondly, the scope of the property can be quite different. Category "labels" indicate the whole object, whereas category "features" indicate parts of an object (Miller & Johnson-Laird, 1976; Tversky & Hemenway, 1984).

To incorporate the idea of typicality into COO research, some clarification of two possible dimensions of typicality derived from the category-based subject of this research is necessary. These two dimensions are as follows:

(1) Ethnic typicality: the typicality of a country's product in the global market of its product category.

(2) Country typicality: the representativeness of a product category of a whole country's products. (Tseng & Balabanis, 2011).

Pappu et al. (2007) also report that the consumer-based equity of a brand is significantly associated with both the macro and micro images of the COO of the brand. The relationships between these two sets of constructs were found to be positive as well as product category specific. Furthermore, each dimension of consumer-based brand equity contributed differently to the relationships according to the product category, while the contribution of both country-image dimensions (macro and micro) was also product category specific.

However, some researchers argue that COO is a salient cue in consumer decision making. Diamantopoulos et al. (2011) proposed that purchase intentions for a particular brand would not be expected to be influenced – either directly or indirectly – by COO considerations. Specifically, neither consumers' overall image of products

from a particular country (Narayana, 1981) nor their perceived image of products in a specific category from that country (Jaffe & Nebenzahl, 2006) should impact brand image and/or consumers' intentions to buy the brand. Instead, purchase intentions should primarily be driven by the focal brand's image but the latter would not be related to either the country image (CI) or the product category image (PCATI) associated with that country. In this context, "*country image is the overall perception consumers form of products from a particular country, based on their prior perceptions of the country's production and marketing strengths and weaknesses*" (Roth and Romeo, 1992, p. 480) whereas PCATI captures the image of that country's products in a particular category. Brand image, on the other hand, captures "consumers' perceptions".

2.4.9 Subjective Norms

A subjective norm is defined as "*a person's perception of the social pressures put on him to perform or not perform the behaviour in questions*" (Ajzen & Fishbein, 1980, p. 6). The Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980) has successfully been used to explain human behaviour. The theory proposes that human behaviour is preceded by intentions, which are formed based on consumers' attitudes towards the behaviour and on perceived subjective norms. Attitude reflects the individual's favourable or unfavourable feelings towards performing a behaviour. Subjective norms capture the consumers' perceptions of the influence of significant others (family, peers, authority figures, media). Subjective norms are related to intention because people often act based on their perception of what others think they should be doing. Subjective norms tend to be more influential during early stages of innovation implementation when users have limited direct experience from which to develop

attitudes (Taylor & Todd, 1995). It is during this stage of attitudinal development that online retailers can influence shoppers' propensity regarding purchasing behaviour (Yu & Wu, 2007).

2.5 Demographics

Demographics can have a major impact on the way marketers identify, target and communicate with their target audiences. Demographic characteristics are regularly studied when researchers are trying to determine why consumers make purchases online (Foucault & Scheufele, 2002). Empirical research shows that determining which market segments to target allows evaluative dimensions in terms of the geographic demographic, and behavioural factors (Samuel, 1997). Changes in population size, age structure, workforce participation, education, and income levels are important considerations for marketers when developing new efficient marketing strategies (Hawkins et al., 2004).

Chapter 3 Theoretical Research Model and Hypotheses Development

3.1 Introduction

This chapter discusses the conceptual gaps identified in the literature review presented in Chapter Two. This is followed by a review of the three research objectives identified in Chapter One. The 14 hypotheses are proposed in the following sections, and a theoretical research model is developed.

3.2 Conceptual Gaps in the Literature

The following conceptual gaps have been identified based on a review of the literature on consumers' online shopping behaviour. The following gaps have been identified in an Australian context:

- There is a lack of empirical research on Australian consumers' purchasing behaviour in e-commerce industries.
- There is limited published research on the factors influencing consumers' online shopping adoption in Australia.
- There is a lack of empirical research on the demographic characteristics of Australian online shoppers.
  consumer

3.3 Research Objectives

Online shopping is a popular shopping method for consumers' worldwide, and Australian consumers are no exception. However, the factors influencing Australian's decisions to shop or not to shop online, have not been empirically identified. Understanding the factors which affect Australian consumers buying behavior is an

important information for companies, as the companies can develop better marketing strategies to convert potential online consumers into active ones.

The purpose of this research is to identify the key factors influencing Australian consumers' online shopping behavior. The specific objectives of this research are:

- To identify the factors which influence consumer adoption of online shopping in Australia.

- To determine, in order of importance, the factors which affect consumers' adoption of online shopping in Australia.

- To examine whether different demographic characteristics have an impact on the adoption of online shopping in Australia.

3.4 Hypotheses Development

Based on the conceptual gaps identified in Section 3.2, 14 testable hypotheses have been developed to satisfy the three research objectives. Hypothesis One to Hypothesis Nine address Research Objectives One and Two, and Hypothesis 10 to Hypothesis 14 address Research Objective Three.

3.4.1 Website Factors

Online retailing is a dynamic, complex and competitive sector in which firms provide a variety of products and services to buyers via the Internet (Kilic & Senol, 2010). As discussed by Heinemann and Schwarzl (2010), the advantages of using online retailing include: "*an increased base of potential customers, wider market coverage,*

cost-effectiveness, a diffusion of risks, flexibility, customer loyalty, as well as improved image and brand revitalisation" (p. 215).

In addition, Internet technology enables retailers not only to sell their products and services online, but also to customise online store atmosphere for specific consumers (Vrechopoulos, 2010). Conventionally, the term atmospherics is used to describe a store's space and design, while it is now also used in e-commerce environments to describe the layout and design of the Internet store site (Abbott et al., 2000). Karimov et al. (2011) presents a general classification scheme for website design: visual design, such as layout and colour that gives consumers their first impressions; content design, such as information provided on the website; and social cue design, which is embedded in the web interface and allows people to communicate using different media. Several researchers confirm that using marketing elements in Internet design is quite effective with regard to gaining a competitive advantage (Baloglu & Pekcan, 2006; Caballero-Luque et al., 2010; Gazzar & Mourad, 2012).

Accordingly, the design elements of online virtual store have important effects on consumers' beliefs and attitudes (Keisidou et al., 2011). Poorly-designed websites irritate their users and impede navigation of the site, make finding products difficult, and interfere with purchase behaviour (Gao & Koufairs, 2006). When a consumer encounters an unpleasant situation and feels irritated by a poorly-designed website, the consumer abandons the shopping cart and leaves the store without making a purchase. In addition to abandoning the current purchase, these types of annoying experiences can have a lingering and adverse effect on consumers' beliefs about online retailers' trust, benevolence, competence, dependability, and integrity (Gao & Wu, 2010; Thota, 2012). Given the easiness and speed with which consumers can leave a commercial website and defect to a competitor's site, the issue of website

design becomes even more relevant, as well as poor design being and detrimental to online shopping (O'Brien & Toms, 2008; Wu et al., 2014). Therefore, H1:

H1: High perceptions of website visual design will have a positive effect on online shopping adoption.

3.4.2 Perceived Risk

Perceived risk is a critical antecedent to the hesitation of shoppers to purchase via the Internet (Doolin, Dillon, Thompson, & Corner, 2005; Kuhlmeier & Knight, 2005; Rajamma, 2006). Individual behaviour is influenced by the degree of uncertainty and the source of uncertainty when facing uncertain situations (Fontana & Gerrard, 2004). Hansen, Jensenb, & Solgaard (2004) suggest that online shopping is regarded as a riskier transaction than offline shopping in that shoppers cannot concretely experience or touch the goods they wish to purchase Hence, risk reduction is seen as a key to increasing consumer participation in e-commerce (Das, 2016).

Previous research indicates that the influence of perceived risk on online purchase intentions is mediated through the role of consumer attitudes, which directly affect purchase intentions (Putro & Haryanto, 2015). Specifically, lower levels of perceived risk are associated with higher levels of consumer attitude (Chang & Wu, 2012). Online shoppers tend to experience lower levels of perceived risk toward online shopping than non-shoppers (Dai, Forsythe, & Kwon, 2014). Thus, perceived risk influences online shoppers' purchasing intentions. Consumers who are more confident in making online purchasing decisions are more likely to engage in purchasing (Kim et al., 2008). Lu, Hsu and Hsu (2005) posit that the importance of perceived risk in forming online purchase intentions lays in the opportunity cost, which is defined as

the possibility that the best alternative was not chosen. When online shoppers believe that online purchasing decisions carry a higher opportunity cost, they may hold back and hesitate from engaging in online purchasing. Therefore, H2:

H2: Consumers with higher levels of perceived risk will produce negative attitudes towards online shopping adoption.

3.4.3 Service Quality

Ojasalo (2010) describes the true function of e-services as providing consumers with a superior experience with respect to the interactive flow of information. In order to encourage consumers to repeatedly purchase and to build consumer loyalty, online companies need to shift their e-business focus from e-commerce (the transactions) to e-service (all cues and encounters that occur before, during, and after the online transactions) (Tsao & Tseng, 2011). High quality services can garner positive word-of-mouth opinions and publicity which are the most common forms of external brand awareness and image association (Berry, 2000; Tsao & Tseng, 2011).

The service quality dimensions identified in this research are based on the literature review and represent consumers' overall impressions of service derived from shopping online. In the context of online shopping, the service quality construct have consistently identified at least three primary dimensions of service quality: interaction quality, physical environment quality, and outcome quality (Clemes et al., 2013).

Service quality is considered to be one of the most important determinants of online retailers' success. Firstly, consumers' satisfaction and intention to shop online is affected by service quality provided by online retailers. Secondly, good service

quality offered by online retailers may attract potential consumers to shop online (Cai & Jun, 2003). Therefore, H3:

H3: Poor e-service quality (e-SQ) has a significant negative effect on online shopping adoption.

3.4.4 Brand Image

The inability to physically examine apparel products when shopping online increases risk perception associated with online shopping as consumers cannot touch, feel, or try on products before purchase. Consumers often use the product brand name (Dawar & Parker, 1994; Greatorex & Mitchell, 1994) and store name (Bolton & Drew, 1991, Teas & Agarwal, 2000) as a surrogate for product quality to reduce their risks and simplify their purchase decisions, especially when shopping online where many product attributes cannot be examined directly (Aghekyan-Simonian et al., 2012).

Product brand image is often defined as "*perceptions about a brand as reflected by the brand associations held in consumer memory*" (Keller, 1993, p.3). The favourability of brand associations produces relevant attitudes that transfer to the product. Thus, the more favourable the brand image, the more positive the attitude toward the branded product and its attributes. Furthermore, a favourable product brand image has a positive effect on purchase intentions, and consumers are more likely to shop online for products with well-established brand names (Keller, 1993; Del Rio et al., 2001; Lee & Tan, 2003).

Additional studies focusing on multi-channel retailers show a significant positive relationship between online store image and consumer purchase intention (Kwon & Lennon, 2009; Verhagen & van Dolen, 2009). Chen et al. (2010) show a positive

relationship between online store attributes and purchase intentions for computers, consumer electronics, and communication products/services, concluding that online store attributes such as technology (usability and security) and shopping factors (trust and convenience) influence consumers' online purchase intentions. Thus, H4:

H4: A strong and favourable brand image has a positive influence on online shopping adoption.

3.4.5 Convenience

Shopping convenience is one of the most prominent motivators of non-store shopping, according to Haas and Kenning (2014). Berry et al. (2002) note that the greater the time costs associated with a service, the lower the degree of consumers' perceived service convenience. They further point out that consumers' perceptions of convenience are negatively influenced by their perceptions of the cognitive, physical, and emotional effort associated with the shopping effort.

In the same vein, Seiders et al. (2000) argue that the emphasis consumers place on convenience has prompted retailers to extend one-stop shopping, to redesign store operating systems, and to emphasize service sales. They also suggest some ways to offer consumers convenient shopping, including strategies to enhance the speed and ease with which consumers can reach a retailer, to identify, select, and to obtain products, and amend transactions. Thus, as consumers obtain utilitarian value from efficient and timely transactions, both time and effort savings positively influence consumers' online purchase intentions (Childers, Carr, Peck, & Carson, 2001). Thus H5:

H5: Consumers' perceived level of online shopping convenience has a significant and positive effect on the online shopping adoption.

3.4.6 Price

Product price has long been considered a key predictor of online shopping consumer choice. Many consumers look for price information when they choose to shop online. Vijayasarathy and Jones (2000) identify that savings in transaction costs that lead to better deals on price can positively influence consumers' attitudes on their intentions to shop online. However, because of the physical and temporal distance between buyer and seller in the electronic marketplace, Internet shopping incurs uncertainty and embodies risk, which arises from the time lapse between the purchase and the delivery of the products (Kim, et al., 2012). In particular, when consumers do not have enough product quality information, they may select high price options by interpreting price as a quality signal (Lichtenstein et al., 1993).

Overall, price is considered to be a monetary sacrifice, which implies that an increase in price offered by the current vendor in comparison with the price offered by other vendors lowers the acquisition utility when the equivalent value of the product remains constant (Reibstein, 2002). In addition, perceived price may also have a direct effect on purchase intentions. For the same product, a high perceived price creates a monetary loss for consumers, which may deter consumers from wanting to purchase the product online (Dodds et al., 1991). Therefore, H6:

H6: A perceived lower price has a positive effect on online shopping adoption.

3.4.7 Product Variety

Arnold, Oum and Tigert (1983) found that repeat patronage of a store depended on perceived product variety, which ranks behind only location and price in importance. A greater perceived product variety leads to greater ease of navigation for consumers with low choice-uncertainty. A wide selection of products leads to better comparison shopping and eventually better purchases (Keeney, 1999). Sin and Tse (2002) also report that when compared to non-online shoppers, online shoppers exhibit a more positive evaluation of the product variety available from Hong Kong online retailers. In addition, Fiore et al. (2005) propose that online shopping provides a hedonic experience, and stimulating website features can enhance pleasure. People have an internal drive to experience an optimal level of stimulation (McAlister & Pessemier, 1982), and product variety provides hedonic stimulation, which leads to shopping pleasure (Menon & Kahn, 1995). Thus H7:

H7: A large product variety range has a positive effect on online shopping adoption.

3.4.8 Country-of-Origin

COO design/manufacture has been identified as giving rise to COO associations in consumers' minds (Aaker, 1991; Keller, 1993). COO associations may refer to the economic stage of the country (macro) or products produced in the country (micro). Country-of-image is a set of COO associations organised into groups in a meaningful way (Keller, 1993). Consumers' country images can affect the equity they associate with a brand from that country. That is, for a selected product category (milk powder), in a given market (China), consumers' image of a COO (Australia) and image of the products from that country, can affect the consumer-based equity of a brand

(Bellamy's) from that country. Country image can influence the key dimensions of country equity such as country associations, perceived quality, and consumers' loyalty to a country. In particular, country equity is believed to be derived from the association of the product with a country (Saydan, 2013).

Thakor and Katsanis (1993) suggest that country equity might be product category specific. Since countries generate intangible assets in consumers' minds, and since countries possess equity, a country's image could influence (positively and negatively) the equity of brands originating from that country, in a selected product category. Considering the features of online shopping, consumers rely on the country image in order to avoid perceived risks from making purchases. Thus, consumer satisfaction could affect the image of the country and hence consumers' online shopping decisions from that country. Therefore, H8:

H8: Country-of-origin is positively associated with consumer online shopping adoption.

3.4.9 Subjective Norms

In general, people see themselves as being the cause of their actions. However, people often underestimate the influence of others on their beliefs and actions and one's social environment which does exert an influence on one's behaviour (Srite, 2000). Since using the online medium to shop is a relatively new phenomenon, an individual's intentions to engage in this behaviour can be expected to be influenced by the opinions held by people who are important to the individual, such as friends and family (Vijayasarathy, 2004). In addition, Chan et al. (2011) propose that an appropriate promotion strategy would change a consumer's perceptions and hence

stimulate his/her purchase inclinations. The idea is that if the consumer is still not satisfied with the conceded price offered by the shop, the presence of a promotion action may increase his/her perceived value on the product and hence accept the shop's offer. Thus H9:

H9: Stimulation from family members, peers, friends, media, advertising and promotion affect consumers' decisions to adopt online shopping.

3.5 Hypotheses Related to Research Objective Three

The research findings on Internet shoppers' characteristics still remain mixed and inconclusive, only recently has research empirically addressed the moderating role of consumer's demographics in the online environment. In the context of e-commerce, consumers' demographic characteristics, such as age, education and income have been widely used to distinguish between online shoppers and non-online shoppers (Clemes et al., 2014).

For example, Hansen (2005) finds that perceived order accessibility has a significant positive effect on future online buying intentions for well-educated consumers, but not for less well-educated consumers. Donthu and Garcia (1999) found that Internet shoppers are older and earn a higher income compared to Internet non-shoppers. Moreover, Li, Kuo and Russell (1999) revealed that education, convenience orientation, experience orientation, channel knowledge, perceived distribution utility, and perceived accessibility are strong predictors of online buying status; that is, whether the consumer is a frequent online buyer, an occasional online buyer, or a non-online buyer.

Based on the literature, online consumers tend to be younger, possess greater wealth, and be better educated with higher positions and incomes (Clemes et al., 2014; Brashear et al., 2009; Swinyard & Smith). Therefore, H11-H14:

H10: The younger generation is more willing to spend money online.

H11: There is a positive relationship between higher education levels and the adoption of online shopping.

H12. Occupation has an impact on the adoption of online shopping.

H13. There is a positive relationship between higher incomes and the adoption of online shopping.

H14. There are different perceptions of amongst demographic groups about the factors involved with the adoption of online shopping.

3.6 Theoretical Research Model

The theoretical research model is based on the review of the literature (Figure 3.1). The research model proposes that consumers' decisions to shop via the Internet are based on nine factors: (1) website factors; (2) perceived risks; (3) service quality; (4) brand image; (5) convenience; (6) price; (7) product variety; (8) country of origin; and (9) subjective norms, and demographic characteristics, such as age, education, occupation and income.

Figure 3.1 Theoretical Research Model:

Website Factors (+)

Perceived Risk (-)

Service Quality (-)

Brand Image (+)

Convenience (+)

Price (+)

Product Variety (+)

Country of Origin (+)

Subjective Norms (+/-)

Demographics (+/-)

a. Age
b. Education
c. Occupation
d. Income

CONSUMER ONLINE
SHOPPING ADOPTION

Binary Variable

1= Do online shopping

0= Do not do online shopping
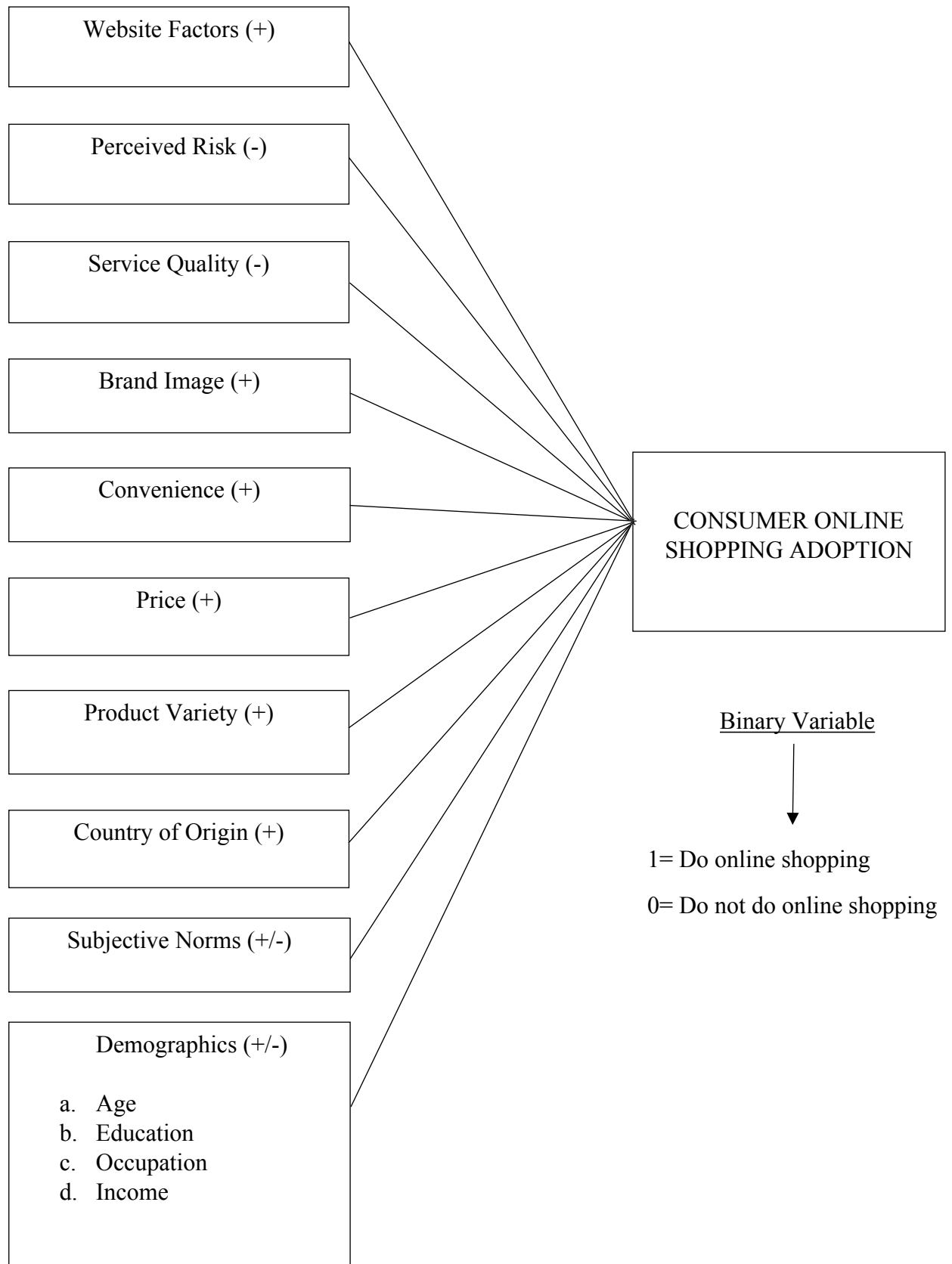
Independent Variables

Chapter 4 Research Methodology

4.1 Introduction

This chapter outlines the research method used to examine the theoretical research model and to test the fourteen hypotheses (stated in Chapter Two) and to answer the three research objectives, discussed in Chapters One and Three.

The chapter starts with a discussion of the sampling method and the estimation of the sample size. A discussion of how the questionnaire was developed follows. Finally, factor analysis, logistic regression analysis, and the additional statistical analysis used in this study are discussed.

4.2 Sampling Method

The sample was drawn from the population of Sydney, the state capital of New South Wales and the most populous city in Australia and Oceania. The population of Sydney at the time of the 2011 census was 4.39 million, with 1.5 million of these people born overseas, representing many different nationalities and thus making Sydney one of the most multicultural cities in the world (Australian Bureau of Statistics, 2011). There are more than 250 different languages spoken in Sydney and about one-third of residents speak a language other than English at home. However, Sydney has a disproportionately large concentration of many of Australia's migrant communities. (Encyclopædia Britannica, 2015).

Convenience sampling was used and the primary data was collected using a self-administered questionnaire on a face to face basis. A self-administered questionnaire is an economical and efficient method for data collection as numerous questionnaires

can be simultaneously distributed to many respondents in several places during a similar time period. Self-administered questionnaires can reduce respondent error and save on costs (Zikmund et al., 2012). Respondents who were younger than 18 years old were excluded from the survey as they may have encountered difficulties in interpreting the survey questions.

An intercept personal interview approach was used to collect data for this research, as it enables the researcher to reduce surprise and uncertainty when attracting a respondent. The approach also creates a more cooperative atmosphere among respondents (Cooper & Shcindler, 2006; Malhotra, 2010). The survey was conducted in different public shopping centres from 17th October to 28th October 2015. The questionnaires were collected immediately after the participants completed them. The researcher clearly stressed the voluntary participation criteria before giving the questionnaire to each participant to complete. (Lincoln University HEC, 2014).

4.3 Sample Size

Sample size is the number of subjects chosen to represent a population in a research study (Sekaran & Bougie, 2010). The sample size is a critical factor required for precise generalization with confidence about the constructs under investigation. Therefore, it requires a reliable estimation with a minimal error, as well as closely reflecting important parameters (Ruane, 2005; Sekaran & Bougie, 2010).

In addition, sample size has an impact on the reliability of factors that emerge from a factor analysis (Hair et al., 2010). If k is the number of predictor variables in a factor analysis, Harris (1975) recommends that the sample size be at least $50 + k$. Alternatively, Tabachnick and Fidell (1989) suggest that the sample size should be at

least 5k while Nunnally (1978) recommends a sample size of at least 100 for $k \leq 3$ and a sample size of 300 to 400 for k as large as 9 or 10. Adding further confusion, Green (1991) consider that the sample size should be at least $50 + 8k$. Finally, Combs (2010) notes that a "one-size fits all" formula of having a sample of at least 100 subjects is still a widespread assumption in the applied sciences, irrespective of the value of k. Moreover, Hair et al. (2010) and Hunter and Tan (2008) suggest that the minimum sample size should be at least five times as many observations as the number of independent variables to be analysed. Since there are 36 variables to be analysed in this research, at least 180 usable questionnaires are therefore required.

For regression analysis, the sample size should be at least equal to the number of independent variables plus 104 for testing regression coefficients, and at least eight times the number of independent variables plus 50 for testing the R-square respectively (Garson, 2006). Therefore, the nine independent variables in this research require at least 122 completed questionnaires in order to test the regression coefficients and the R-square.

Crounch and Housden (2003, p.166) also points out that "*minimum sample size for quantitative consumer surveys are of the order of 300-500 respondents*". Thus, 300 usable questionnaires therefore need to be obtained.

4.4 Questionnaire Development

This research used the questionnaire method to collect primary data to test the hypotheses and answer the three research objectives. The constructs and the pool of questionnaire items were generated in two steps: an extensive literature review, and then focus group discussions.

4.4.1 Focus Group Procedures

The extensive literature review conducted by this study identified potential factors that can influence Australian consumers' choices for online shopping adoption, focus group interviews conducted by this research were also used to gain in-depth knowledge of the research topic, to narrow the concepts and issues, and to discover new constructs (Churchill, 1979). In addition, focus groups are frequently used in questionnaire design to assist in generating the correct questions (Clemes et al., 2014).

According to the number of participants, focus groups can be classified into two types, full group and mini-group. Full groups contain eight to ten participants, whereas mini-groups are limited to four or six. Some researchers prefer to use mini-groups instead of full groups because they believe that they can gain more in-depth information from a smaller group (Greenbaum, 1998). In addition, Hair et al. (2000) recommend that the participants in a focus group should be as homogenous as possible in order to ensure that participants feel comfortable. Therefore, two mini-focus groups were conducted in Sydney, Australia, after approval was obtained from the Lincoln University Human Ethics Committee (HEC). Each focus group was composed of six participants who were voluntarily recruited from universities and shopping centres in Sydney. The focus group sessions were conducted by the moderator who allowed approximately two hours for each focus group. The groups were provided with information derived from the literature review and the participants were encouraged to list all of the factors that influence their online shopping decisions and to provide comments on any factors mentioned by other participants.

The focus group interviews provided valuable information that helped to generate the final research model and to identify specific decision factors amongst consumes in Australia. As a result of focus groups discussion, the consumer resources factor was

deleted as the increasing rate of computer and Internet popularity in Australia is too high to be concerned as a relevant variable. Therefore, there were nine factors derived from the literature review and the focus group discussions.

4.4.2 Questionnaire Design

The draft questionnaire was developed based on the literature review and feedback gathered from the focus group interviews. The questionnaire was divided into four sections (see Appendix 2). The first section was designed to classify consumers: online shoppers or non-online shoppers. The second and third sections consist of statements that were designed based on the literature review and derived from the focus group interviews. Section two pertains to consumers who shop online and section three pertains to consumers who do not shop online. The last section of the questionnaire relates to participants' demographic characteristics and contains five items.

Multiple measures such as nominal scales, Likert scales, and interval scales were used in the questionnaire. In Sections two and three, a 7-point Likert scale, ranging from Strongly Agree (1) to Strongly Disagree (7), was used to measure the statements. The 7-point Likert scale is a useful instrument for the classification of respondents' attitudes (Back, 2005; Han et al., 2008). Furthermore, using the 7-point Likert scale can increase the variation and reliability of the responses (Nunnally, 1978).

4.4.3 Pre-testing Procedures

The objective of conducting the pre-test is to evaluate the face validity, content validity, reliability, clarity of the scale, and the length of time required to complete the

survey (Malhotra, 2010). Thus, this research employed two steps to pre-test the questionnaire.

Firstly, the questionnaire was examined by an expert panel consisting of two consumer behaviour analysis experts, who were invited to review and freely comment on the questionnaire. The purpose of this process is to obtain the panel's opinion in order to improve the questionnaire's content validity (Carmines & Zeller, 1979; Kline, 2011; Malhotra, 2010).

Secondly, the pre-test was conducted on a random sample of 20 Australian consumers who were aged 18 years or over and who were located in the Ashfield shopping centre, Sydney. The respondents were encouraged to make comments and suggestions on any questions or statements they felt were difficult or ambiguous to answer. Based on the suggestions from the pre-testing process minor modifications were made. A final version of the questionnaire is presented in Appendix 2.

4.5 Data Analysis Technique

The data analysis was conducted through the Statistical Package for the Social Sciences version 21 (SPSS). In order to satisfy Objective One, this research used EFA to identify the factors which influence consumers' decisions regarding online shopping adoption. In addition, logit regression analysis was used to identify the significant factors that influence consumers' decisions to shop online. Sensitivity analysis was used to satisfy Objective Two. This research also used the marginal effect method to rank the influential factors regarding consumers' choice of online shopping adoption versus non-online shopping, from the most important to the least important. Lastly, T-tests and ANOVA were used to satisfy Objective Three.

4.5.1 Factor Analysis

Factor analysis is a multivariate technique for determining the underlying structure and dimensionality of a set of variables. By analysing inter-correlations among the variables, factor analysis shows which variables cluster together to form unidimensional constructs. However, it involves a higher degree of subjective interpretation than is common with most other statistical methods. Following are three functions of factor analysis summarised from research conducted by Garson (2013):

 1) To select a subset of variables from a larger set, based on which original variables have the highest correlations with the principal component factors.

 2) To create a set of factors to be treated as uncorrelated variables as one approach to handling multicollinearity in such procedures as multiple regression.

 3) To validate a scale or index by demonstrating that its constituent items load on the same factor, and to drop proposed scale items which cross-load on more than one factor.

In the following sections, different types of factor analysis, the assumptions of factor analysis, factor rotation, and interpretation of the resulting factors, will be discussed.

4.5.1.1 Modes of Factor Analysis

Two modes of factor analysis are very common: the R-technique whereby the relationships among the variables are examined; and the Q-technique whereby the relationships among the individuals or observations are examined.

Choosing between the R-mode and Q-mode methods depends primarily on whether the researcher is interested in the relationships among the variables or the individuals.

In Q-mode analysis, the number of variables/attributes must be sufficient to provide stability in the similarity or dissimilarities used. In R-mode analysis there must be sufficient objects to bring about stability in the variances and covariances or the derived correlations. Gorsuch (1974) suggests that appropriate use of Q-factor analysis is the converse of R-factor analysis. When the number of variables are more than the number of observations, then Q-factor analysis will result in a more stable factor solution than R-factor analysis, due to the reason that standard error of a correlation is a function of the sample size. Further, statistical independence of correlation coefficients in an R-mode analysis can be obtained only when the number of individuals is greater than the number of variables. Thus for such circumstances, Q-mode can be applied (Stewart, 1981).

Factors obtained from either mode are interpreted by the same, as dimensions. The factors obtained from R-mode are analysis dimensions along which variables may differ, and the factors obtained from Q-mode analysis are dimensions along which individuals may differ. Aside from the first factor the unrotated factors Q-mode and R-mode/techniques should be identical. Thus the choice of which mode to use is a tactical decision dictated by the relationships of attributes to individuals (Pandy et al., 2015).

The first objective of this research is to identify the factors which influence consumer online shopping adoption in Australia, collected from a number of individual participants. Thus, R factor analysis is the most appropriate mode to use in order to identify latent dimensions (Garson, 2013).

4.5.1.2 Types of Factor Analysis

Two general types of factor analysis can be identified because of the intended purpose of the analysis: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). In EFA, the data are described and summarized by grouping together related variables. The variables may or may not be selected with a particular purpose in mind. EFA is commonly used in the early stages of research, where it provides a method for consolidating variables and generating hypotheses about underlying processes that affect the clustering of the variables. CFA is used in the later stages of research for theory testing related to latent processes, or to examine hypothesized differences in latent processes among groups of subjects. Confirmatory factor analysis is typically conducted with structural equation modelling, in which an investigator has complete control of designing the latent constructs and the relationship between latent constructs (Fitzpatrick & Wallace, 2011). As the underlying structure for this exploratory research is uncertain, EFA was employed for this research.

EFA has two methods for driving the factor analysis, the principle component factor analysis and the common factor analysis. The selection of the appropriate model is based on two criteria: the objectives of the factor analysis and the amount of prior knowledge about the variance in the variables (Hair et al., 2010). Common factor analysis is used when the researchers do not know the nature of the factor to be extracted and the common error variance. Common factor analysis is also called principal factor analysis and is used in confirmatory research. However, principle component factor analysis method is used when the researcher needs to drive the minimum number of factors and to explain the maximum portion of variance in the original variable; and is used in exploratory research (Salkind, 2010). Thus,

component factor analysis was adopted for the data analysis completed in this research.

4.5.1.3 Testing Assumptions for Factor Analysis

There are several assumptions which justify the use of factor analysis:

(1) Linearity

Factor analysis is a linear procedure. The smaller the sample size, the more important it is to screen the data for linearity (Garson, 2010a). Therefore, careful examination of any departures from linearity is necessary (Hair et al., 2010).

(2) Normality

Screening continuous variables for normality is an important early step in almost every multivariate analysis. This assumption measures whether differences between the obtained and predicted dependent variable scores are normally distributed (Stewart, 1981). If the variation from the normal distribution is sufficiently large, all statistical tests are invalid (Hair et al., 2010).

(3) Homoscedasticity

Homoscedasticity is assumed when factors are linear functions of the measured variables (Garson, 2010a). Factor analysis assumes homoscedasticity to the extent that observed correlations are diminished (Hair et al., 2010).

(4) Adequate Sample Size

Regarding the sample size question, a researcher generally would not factor analyse a sample of fewer than 50 observations, and preferably the sample size

should be 100 or larger. As a general rule, the minimum is to have at least five

times as many observations as the number of variables to be analysed, and the

more acceptable sample size would have a 10:1 ratio. The highest cases-per-

variable ratio should always be obtained in order to minimize the chances of over

fitting the data (Hair et al., 2010).

However, the statistical assumption of linearity, normality, and homoscedasticity do

not have to be met if the data matrix has sufficient correlation to justify the

application of factor analysis (Hair et al., 2010). The methods for verifying sufficient

correlations for factor analysis are discussed in the following section.

4.5.1.4 Appropriateness of Factor Analysis

Reliability of factor analysis depends on the appropriateness of data. Checking the

appropriateness of the data is a difficult task for the statistician as well as for the

practitioners of factor analysis. The factors obtained through analysis of appropriate

data are often readily interpretable and intuitively appealing.

Examination of the Correlation Matrix. The simplest procedure for determining the

appropriateness of data is the examination of the correlation matrix, the plotting of the

latent roots obtained from matrix decomposition, and the examination of the

communalities estimates. Small values of correlation coefficient indicate the

inappropriateness of factor analysis. Factor analysis is concerned with the

homogeneity of items. A pattern of low correlation indicates a heterogeneous set of

data (Pandy et al., 2015). The researcher should look for corrections which are greater

than 0.3, if several values in the correlation matrix are greater than 0.3; it indicates

that using factor analysis is appropriate (Hair et al., 2010).

Inspection of the Anti-Image Correlation Matrix. Another procedure for determining

the appropriateness of a correlation matrix for factoring is an inspection of the off-

diagonal elements of the anti-image correlation matrix. The anti-image of a variable is

that part which is unique, that is, cannot be predicted from the other variables. Only

variables with sampling adequacy greater than the minimum acceptable significant

level of 0.5 should be included in the analysis (Coakes, Steed, & Price, 2001).

O'Rourke and Hatcher (2013) suggest that for appropriateness of data, the matrix of

correlation of the unique parts of the variables should approach to the diagonal. If the

anti-image matrix has many non-zero off-diagonal entries, the correlation matrix is

not suitable for factoring (Stewart, 1981; Balen et al., 2010).

Bartlett's Test of Sphericity. Bartlett's test of sphericity (1950) is also a statistical test

of data appropriateness. The test offers the statistical probability that the correlation

matrix has significant correlations among the variables (Hair et al., 2010).

Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA). Additional test for

appropriateness of data for factor analysis is a Kaiser-Meyer-Olkin measure of

sampling adequacy (MSA) (Kaiser, 1970).

$$MSA = \frac{\sum_{j \neq k} \sum r_{jk}^2}{\sum_{j \neq k} \sum r_{jk}^2 + \sum_{j \neq k} \sum q_{jk}^2}$$

where q_{jk}^2 is the square of the off-diagonal elements of the anti-image correlation

matrix and r_{jk}^2 is the square of the off-diagonal elements of the original correlation.

The MSA provides a measure of the extent to which the variables belong together and

are thus appropriate for factor analysis. Kaiser and Rice (1974) gave the following

calibration of the MSA; that is reported in the following table (Table 4.1). It is true

that without proper checking of the appropriateness of the data, the factor analysis is misleading and inappropriate.

Table 4.1 Interpretations of KMO Measure

KMO	Interpretation
0.90 and + ve	*marvelous*
0.80 and + ve	*meritorious*
0.70 and + ve	*middling*
0.60 and + ve	*mediocre*
0.50 and + ve	*miserable*
below 0.50	*unacceptable*

4.5.1.5 Criteria for the Number of Factor to Extract in Principle Component Analysis

In factor analysis generation, a large set of variables is factored until the smallest number of factors of the variance is explained (Lawrence et al., 2013). There are two common criteria that can be utilized in order to determine the number of factors to extract.

Latent Root Criterion

This criterion is based on the value of eigenvalues. In general, the choice of eigenvalue is one. That is, the factors which have a value higher or equal to one will be extracted through analysis. The rationale for the eigenvalue criterion is that any individual factor should account for at least the variance of a single variable, if it is to be retained for interpretation. This approach is well-performed, if the number of variables under study is more than 20 and less than 50. It is most frequently applied in analysis (Pandey et al., 2015).

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Scree Test Criterion

The Scree test is based on the plot between latent roots obtained from decomposition of the correlation and covariance matrix, against the number of factors in their order of extraction. A large break in the plot is an indication to stop the procedure. The point at which the curve first begins to straighten out is considered to indicate the maximum number of factors to be extracted. This can be very helpful in EFA (Pandey et al., 2015).

In practice, it is very common to apply more than one criterion to reach a decision for the extraction of factors. Most authorities in this field recommend a combination of approaches for determining the number of factors to extract. The use of Latent root criterion and the Scree test appears to provide an effective means for determining the number of factors (Stewart, 1981).

4.5.1.6 Factor Rotation

The rotation of factors indicates specifically that the reference axes of the factors are turned about the original until some other position has been reached. It may be orthogonal (in which case axes are maintained at the 90º angle between each other) or oblique (in which case axes are not retained at the 90º angle). If the unrotated factor solutions provide information that offers the most adequate interpretation of the variables under study, then there is no need of rotation. The purpose for the factor rotation strategies is to drive a clear pattern of loadings (Garson, 2010a). Each time the factors are rotated, the interpretation of the factors changes while the pattern of loadings changes (Aaker et al., 2005).

Orthogonal Factor Rotation

1) VARIMAX: is most commonly the orthogonal rotation method which simplifies the columns (the factors) of the factor matrix. It minimises the number of variables that have high loadings on each factor (maximization of the sum of variances of the required loadings of the factor matrix). Logically, the interpretation of the variance rotated solutions is easy due to the fact that these are some high loadings and some low loadings in each column of the matrix. VARIMAX rotation has the capability to differentiate the original variables by use of the extracted factor. When the variable factor is close to +1 or -1, it can be interpreted as a clear positive or negative association (Hair et al., 2010). In addition, VARIMAX shows a lack of association when the correlation is close to zero. The VARIMAX rotation was employed in this research.

2) QUARTIMAX: simplifies the rows (the observed variables) of a factor matrix, which minimizes the number of factors needed to explain each variable. It focuses on rotating the initial factors so that a variable loads high on one factor and as low as possible on all other factors. Creation of a large general factor is the limitation of this method (Pandey et al., 2015).

3) EQUIMAX: is a compromise between VARIMAX and QUARTIMAX. Rather than simplify the rows or columns, it tries to accomplish some of each. The number of variables that load highly on a factor and the number of factors needed to explain a variable are minimised (Pandey et al., 2015).

Oblique Factor Rotation

Oblique factor rotation plays an important role in developing consumer behaviour theories. An oblique rotation allows the factors to be correlated, and so a factor correlation matrix is generated when an oblique is requested (Garson, 2010a). PROMAX is a straightforward oblique method, while OBLIMIN is a standard method when research seeks a non-orthogonal solution.

1) PROMAX: It is based on an attempt to find the best least-squares fit between the oblique factor-pattern or factors-structure matrix and a target matrix (based on orthogonal approximation to the simple structure), which is thought to represent a simple structure solution. In PROMAX factors extracted are correlate and it is advisable to apply this method to a large database (Pandey et al., 2015).

2) OBLIMIN: is a general form for obtaining oblique rotations, used to transform vectors associated with principal component analysis or factor analysis, to the simple structure. OBLIMIN will result in higher eigenvalues but diminished interpretability of the factors (Garson, 2010).

In exploratory research, both an oblique rotation and an orthogonal rotation can be performed (Stewart, 1981). In practice, very few factors are uncorrelated (Hair et al., 2010). Therefore, both the VARIMAX orthogonal rotation and OBLIMIN oblique rotation were employed in this research.

4.5.1.7 Interpretation of Factors

Factor Loadings

Factor loading explains the correlation between variables and factors. The
significance of factor loadings can be determined by sample size (Field, 2009). The
larger the sample size, the smaller the loading is considered to be strategically
meaningful (Table 4.2).

**Table 4.2 Guidelines for Identifying Significant Factor Loadings Based on
Sample Size**

Factor Loading	Sample Size Needed for Significance *
.30	350
.35	250
.40	200
.45	150
.50	120
.55	100
.60	85
.65	70
.70	60
.75	50

* Significance is based on a 0.05 significance level (α), a power level of 80 percent, and standard errors
assumed to be twice those of conventional correlation coefficients.
Source: Computations made with SOLO Power Analysis, BMDP Statistical Software, Inc., 1993. (Hair
et al., 2010).

Hair et al. (2010) provide three guidelines for assessing the significance of factor
loadings:

(1) Factor loadings in the range of ± .30 to ± .40 are considered to meet the
minimal level for interpretation of structure.

(2) Loadings ± .50 or greater are considered practically significant.

(3) Loadings exceeding .70 are considered indicative of well-defined structure and are the goal of any factor analysis.

Naming of Extracted Factors

There is no scientific method for naming extracted factors; naming is generally based on the subjective view of the analyst. Different analysts can assign different names to the same factor. A logical name, which considers the role of factors according to their factor loading with their respective sign, is appropriate. Most of the specialists in factor analysis are of the view that the name should be assigned by the subject specialist (Pandey et al., 2015).

4.5.2 Summated Scale

The Summated scale minimise the measurement error as it represents the multiple aspects of a concept in a single measure. In constructing a summated scale, dimensionality, reliability, and content validity must be evaluated (Hair et al., 2010).

4.5.2.1 Dimensionality

A scale's dimensionality, or factor structure, refers to the number and nature of the variables reflected in its items. A scale's items might be unidimensional with all reflecting a single common variable, or they might be multidimensional, reflecting two or more variables (Furr, 2011). The researchers can assess undimensionality with either an EFA or CFA (Hair et al., 2010).

4.5.2.2 Reliability

Reliability is the degree to which an assessment tool produces stable and consistent results (Phelan & Wren, 2005). The objective of a reliability test is to assess the stability of measurement over time by repeating the measurement with the same instrument and the same respondents (Aaker et al., 2005). There are four types of reliability: test-retest reliability, parallel forms reliability, inter-rater reliability, and internal consistency reliability. Cronbach's alpha is the most popular measurement of internal consistency for testing scale reliability (Churchill, 1979). A commonly accepted rule of thumb for describing internal consistency is as follows (Salkind, 2010):

Table 4.3 Internal Consistency

Cronbach's Alpha (α)	Internal Consistency
≥ 0.9	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
< 0.5	Unacceptable

The reliability score, as measured by Cronbach's alpha, should exceed a threshold of 0.70; 0.60 level can be used in exploratory research. Thus, 0.60 was applied in this research as the minimum value for testing the reliability of the measures.

4.5.2.3 Content Validity

Content validity, also known as face validity, is the assessment of the correspondence between the individual items and the concept. The objective is to ensure that the selection of scale items extends past just the empirical issue, to also include theoretical and practical considerations (Hair et al., 2010).

4.5.3 Logistic Regression

Logistic regression, also called a logit model, examines the influence of various factors on a dichotomous outcome by estimating the probability of the event's occurrence. The logistic regression model does this by examining the relationships between one or more independent variables and the log-odds of the dichotomous outcome, by calculating changes in the log-odds of the dependent as opposed to the dependent variable itself. The log-odds ratio is the ratio of two-odds and it is a summary measure of the relationship between two variables. The use of the log odds ratio in logistic regression provides a more simplistic description of the probabilistic relationships of the variables, and the outcome in comparison to a linear regression by which linear relationships as well as more rich information can be drawn.

There are two models of logistic regression: binomial/binary logistic regression; and multinomial logistic regression. Binary logistic regression is typically used when the dependent variable is dichotomous and the independent variables are either continuous or categorical variables; logistic regression is best used in this circumstance. When the dependent variable is not dichotomous and is comprised of more than two cases, a multinomial logistic regression can be employed. Also referred

to as logit regression, multinomial logistic regression has very similar results to binary logistic regression (Anderson, 2016).

In presenting the assessment of logistic regression results, researchers should include the following sufficient information: (1) an overall evaluation of the logistic model; (2) statistical tests of individual predictors; (3) goodness-of-fit statistics; and (4) an assessment of the predicated probabilities (Peng et al., 2002, p9). Based on the previous analysis, logistic regression is used to establish associations between the dichotomous dependent variables (consumers adopt/do not adopt online shopping) and independent variables (website factors, perceived risks, service quality, brand image, convenience, price, product variety, country of origin, subjective norms, demographics) identified from the literature review and focus groups discussions.

The mean value of the dependent variable is the key quantity which gives the values of the independent variable in logit regression analysis. A simple functional form is:

$$E(Y \mid x) = \beta_0 + \beta_1 x \tag{4.1}$$

Where Y is called the dependent variable, x is called the independent variable, and β_0 and β_1 are unknown, and are called regression coefficients. β_0 is also called intercept (value of EY when X = 0); β_1 is called slope indicating the change of Y on average when X increases one unit. Distribution functions have been proposed in the analysis of a dichotomous dependent variable. The model of logistic distribution is:

$$\pi(x) = \frac{e^{\beta_0 + \beta_1 x}}{1 + e^{\beta_0 + \beta_1 x}} \tag{4.2}$$

In order to simplify the notation, $\pi(x) = E(Y \mid x)$. The transformation of the $\pi(x)$ logistic function is known as the logit transformation:

$$g(x) = In\left[\frac{\pi(x)}{1 - \pi(x)}\right] = \beta_0 + \beta_1 x \qquad (4.3)$$

In logistic regression, the dependent variable is binary or dichotomous, that is, it only contains data coded as 1 (TRUE, success, pregnant) or 0 (FALSE, failure, non-pregnant). In addition, the binomial, not normal, distribution upon which the analysis is based. The remaining features of a regression analysis are the principles that guide an analysis using linear regression, and which also apply for a logistic analysis.

The goal of logistic regression is to find the best fitting (yet biologically reasonable) model to describe the relationship between the dichotomous characteristic of interest (dependent variable = response or outcome variable) and a set of independent (predictor or explanatory) variables. Logistic regression generates the coefficients (and its standard errors and significance levels) of a formula to predict a logit transformation of the probability of the presence of the characteristic of interest.

If Y is coded as 0 or 1, the expression $\pi(x)$ given in equation (4.2) provides the conditional probability that Y=1, given x, denoted as P(Y=1|x). It follows that the quantity 1- $\pi(x)$ offers conditional probability that Y=0, given x, P(Y=0|x). For the observed data (x_i, y_i) where y_i=0, the contribution to the likelihood function is 1-$\pi(x_i)$, where the quantity $\pi(x_i)$ denotes the values of $\pi(x)$ computed at x_i (Hosmer and Lemeshow, 1989). For the observed data (x_i, y_i), the likelihood function is:

$$P(y_i) = \pi(x_i)^{y_i}[1 - \pi(x_i)]^{1 - y_i} \qquad (4.4)$$

Noted that, $\beta = (\beta_0, \beta_1)$, the likelihood function is:

$$L(\beta) = \Pi P(y_i) = \prod_{i=1}^{n} \pi(x_i)^{y_i} [1 - \pi(x_i)]^{1-y_i} \tag{4.5}$$

The log likelihood expression is:

$$L(\beta) = In[I(\beta)] = \Sigma\{y_i In[\pi(x_i)] + (1 - y_i)In[1 - \pi(x_i)]\} \tag{4.6}$$

Maximizing equation (4.6) with respect to β and setting the resulting expressions equal to 0 will produce the following values of β:

$$\Sigma_{i=1}^{n} [y_i - \pi(x_i)] = 0 \tag{4.7}$$

$$\Sigma_{i=1}^{n} [y_i - \pi(x_i)]x_i = 0 \tag{4.8}$$

The above expressions are called likelihood equations. The consequence of equation (4.7) is:

$$\sum_{i=1}^{n} y_i = \sum_{i=1}^{n} \overline{\pi}(x_i)$$

The sum pf, the observed values of y are equal to the sum of the expected values. After estimating the coefficients, the significance of the variables in the model is assessed; that is, the observed values obtained from the model with and without the variables in the equation. In logistic regression, the comparison is based on the log likelihood function defined in equation (4.6). The likelihood ratio is:

$$D = -2\Sigma_{i=1}^{n} \left\{ y_i In\left(\frac{\overline{\pi}_i}{y_i}\right) + (1 - y_i)In\left(\frac{1-\overline{\pi}_i}{1-y_i}\right) \right\} \tag{4.9}$$

Where $\overline{\pi}_i = \overline{\pi}_i(x_i)$.

The dependent variable in this study, online shopping adoption, is dichotomous. Thus, the logit model is:

$$P(online\ shopping) = \pi(x) = \frac{e^{g(x)}}{1 + e^{g(x)}}$$ (4.10)

And the non-online shopping logit model is:

$$P(non - online\ shopping) = 1 - \pi(x) = \frac{1}{1 + e^{g(x)}}$$ (4.11)

Where g(x) represents the independent variables: website factors, perceived risk, service quality, brand image, convenience, price, product variety, country of origin, subjective norms, and demographics characteristics.

As the online shopping adoption status is a binary variable, the logit model is employed to this research. The model is estimated by the maximum likelihood method used in Stata Version 14.

The hypothesised factors which influence consumers' online shopping adoption are represented in functional form as follows:

ESHOPPING = f(WS, PR, SQ, BI, CV, PI, PV, COO, SN, DC, ε) (4.12)

ESHOPPING is the discrete dependent variable which measures whether an individual uses the Internet as a shopping medium. The dependent variable is based on the question asked in the survey, "Have you shopped online before?"

ESHOPPING	=	1 if the respondent is an online shopper; 0 otherwise;
WS	=	Website Factors;
PR	=	Perceived Risk;
SQ	=	Service Quality;
BI	=	Brand Image;
CV	=	Convenience;
PI	=	Price;

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PV	=	Product Variety;
COO	=	Country of Origin;
SN	=	Subjective Norms;
DC	=	Demographic Characteristics;
E	=	Error Term.

Demographic Characteristics:

GEN (+/-) = Gender; 1 if respondent is a male; 0 if a female

AGE (+/-) = Dummy variables for age group

Age group 1; 1 if respondent's age is from 18 to 35 years old; 0 otherwise

Age group 2; 1 if respondent's age is from 36 to 55 years old; 0 otherwise

Age group 3; 1 if respondent's age is above 56 years old; 0 otherwise

EDU = Dummy variables for educational qualifications

Educational qualification 1; 1 if respondent completed lower-level education (up to middle school level); 0 otherwise

Educational qualification 2; 1 if respondent completed middle-level education (high school and diploma/certificate); 0 otherwise

Educational qualification 3; 1 if respondent completed high-level education (bachelor degree or above); 0 otherwise

OCC = Dummy variable for occupational status

Occupational status 1; 1 if respondent is professional; 0 otherwise

Occupational status 2; 1 if respondent is manger or company employee; 0 otherwise

Occupational status 3; 1 if respondent is civil servant (government officer);
0 otherwise

Occupational status 4; 1 if respondent is student or in service/sales;
0 otherwise

Occupation status 5; 1 if respondent is self-employed, unemployed, retired
or others; 0 otherwise

INC = Dummy variables for monthly income levels

Income level 1; 1 if respondent monthly income level is in lower level
(under AUS$1000); 0 otherwise

Income level 2; 1 if respondent monthly income level is in middle level
(AUS$1001-3000); 0 otherwise

Income level 3; 1 if respondent monthly income level is in high level (above
AUS$3001); 0 otherwise

$\varepsilon =$ *Error term*

4.5.4 Sensitivity Analysis

The sensitivity analysis is conducted in this research to satisfy Research Objective
Two. According to Studenmund's (2001) research, the logit model can be estimated
by using Maximum Likelihood Estimates (MLE), as it assumes the large sample
properties of consistency, efficiency, normality of parameter estimates, and validity of
the t-test significance. In addition, the logit model avoids the major problem
associated with Ordinary Least Square (OLS) estimation of the standard linear
probability model (Judge et al., 1982; Hair et al., 2010). The MLE coefficient

estimates from the logit analysis have no direct interpretation with respect to the probability of the dependent variable (Y=1) other than indicating a direction of influence of probability (Hair et al., 2010; Judge et al., 1982).

The magnitude of the marginal effect can be indicated by calculating the changes in probabilities. This represents the partial derivatives of the non-linear probability function evaluation at each variable's sample mean (Maddala, 2001; Liao, 1994; Pindyck & Rubinfeld, 1991). The marginal effect also represents the marginal change in the dependent variable, given a unit change in a selected independent variable, while holding other variables constant (Liao, 1994). Therefore, in order to rank the important factors that influence consumers' decisions on whether to adopt online shopping, the marginal effect for each of the estimated coefficients was calculated.

4.5.5 T-test and Analysis of Variance (ANOVA)

The T-test and the Analysis of Variance are the two most common univariate procedures for assessing group means. The T-test is used to compare a dependent variable across two groups. When the means of more than two groups or populations are to be compared, ANOVA is the appropriate statistical tool (Zimuk & Babin, 2010).

4.5.5.1 T-test

Most *t* tests involve the comparison of two populations with respect to the means of randomly drawn samples from the respective populations. The two populations could be different groups or experimental conditions, or they could be "within" persons or units, such as a "before" and "after" design. If the obtained scores within a sample are

reasonably homogeneous (have low variability), and the variances of the two groups are roughly equal, then a "difference of means" test is an appropriate way to test hypotheses about the differences between the two populations (USC Research Facility, 2016). Therefore, the t-statistic is a ratio of the differences between the two sample means and the standard error. In the case of the means for two independent samples, the hypotheses can be written in the following forms:

$$H_0: \mu_1 = \mu_2$$

$$H_1: \mu_1 \neq \mu_2 \qquad (4.13)$$

The formula for calculating the t-statistic value is:

$$T\ statistic = \frac{\mu_1 - \mu_2}{SE\mu_1\mu_2} \qquad (4.14)$$

Where: μ_1　　　　=　　　　*Mean of Group 1*

　　　　μ_2　　　　=　　　　*Mean of Group 2*

　　　　$SE\mu_1\mu_2$　　=　　　　*Standard error of the difference in group means.*

In this research, the results of the t-tests will demonstrate whether or not the mean scores of two groups, such as male and female, are significantly different with respect to the online shopping adoption choice.

4.5.5.2 Analysis of Variance (ANOVA)

Analysis of variance (ANOVA) is a statistical technique to analyse variation in a response variable (continuous random variable) measured under conditions defined by discrete factors (classification variables, often with nominal levels) (Martin & Larson,

2008). In this research, ANOVA is conducted to test the demographic hypothesis for consumers' perceptual differences of online shopping adoption (such as age, education levels, occupation, and income). The logic of an ANOVA test is to compare two independent estimates of the dependent variable, which is the general variability of respondents within the groups and the differences between groups (Hair et al., 2010):

1. MS_W: *Mean square within groups*

2. MS_B: *Mean square between groups* (4.15)

Given that the null hypothesis of no group differences is not rejected, MSW and MSB represent the independent estimates of the population variance. Therefore, the ratio of MSB to MSW measures how much variance is attributable to different treatments versus the variance expected from random sampling, and is calculated as follows (Hair et al., 2010):

$$F \ statistic = \frac{MS_B}{MS_W}$$

(4.16)

The F-tests of one-way ANOVA evaluate the null hypothesis of equal means between groups. However, the results of the F-tests cannot indicate where the significant differences lie if there are more than two groups. In order to identify the significant differences among groups, five common post hoc procedures have been proposed by Hair et al. (2010) to test each combination of groups to identify the significant differences among the groups: the Scheffe test, the Turkey's honestly significant difference (HSD) test; the Turkey's extension of the Fisher least significant difference (LSD) approach; the Duncan's multiple-range test, and the Newman-Kules test. From the five post hoc test procedures, the most conservative method with respect to a Type

I error is the Scheffe test (Hair et al., 2010). The Scheffe test was applied in this

research to test for significant differences among some demographic characteristics

that include three or more groups (age, occupation and income).

Chapter 5 Results and Discussion

5.1 Introduction

This chapter reports the results and findings of this research. The data set was examined to ensure its appropriateness for factor analysis and logistic regression analysis. The results of the factor analysis, logistic regression analysis, T-tests, and ANOVA are presented, and the 14 hypotheses tested. The results are discussed in terms of their relationships to each of the relevant research objectives. The data set was analysed by SPSS Version 21.0 and Stata Version 14.

5.2 Sample and Response Rate

5.2.1 Response Rate

A total of 494 questionnaires were returned from 500 questionnaires distributed using the convenience sampling method. Thirty-one of the questionnaires were randomly filled out, or were unsuitable for use in this research. This resulted in a total of 463 usable questionnaires, or a 92.6 percent useable response rate. The number of usable questionnaires was above the minimum sample size of 180, which was discussed in Chapter Four, Section 4.3. Therefore, the sample size was appropriate for factor analysis.

5.2.2 Missing Data

Missing data, or item non-response, implies that valid values on some variables are not available for analysis (Hair et al., 2010; Vriens & Sinharay, 2006). In this research,

items V16, V17, V18, V19, V24, V31, V32, and V33 had missing values. However, the frequencies of all the missing items were less than one percent of the useable responses (Table 5.1), therefore, the mean of each item was substituted for the missing value, as recommended by Hair et al. (2010).

5.3 Descriptive Statistics

The descriptive statistics for the participants who shopped online and those who did not shop online as shown in Table 5.2 were obtained from the frequency analysis by using SPSS (version 21.0). Of the 463 useable questionnaires, 305 (65.9%) of participants were online shoppers, while 158 (34.1%) were non-online shoppers. Analysis of the demographic characteristics is as follows. The survey respondents were comprised of 48.8 percent males and 51.2 percent females. The dominant age groups were between 18-25 years (30.2%) and 26-35 years (33.5%). The participants who held a bachelor degree or a postgraduate degree made-up the major education group, accounting for 41.3 percent and 22.5 percent of the participants respectively. The dominant occupational groups were professional (31.5%) and manager (11.7%). In the income category, the majority of participants' monthly income were between AUS$3001-5000 (28.9%), and above AUS$5001 (25.1%).

When differentiating respondents based on their online and non-online shopping behaviour, the characteristics of 305 participants who had online shopping experience and the 158 participants who had no online shopping experience were similar in income and education. However, the gender, age, and occupation characteristics for online shoppers and non-online shoppers were different. Females were more willing to shop online than males. In addition, the non-online shoppers were older than online

shoppers. The percentage of online shoppers who were above 46 years of age was 8.5 percent, while 41 percent of non-online shoppers were above 46 years of age. Although the majority of respondents who were online and non-online shoppers were professionals, the percentage of labourers, farmers and retired respondents who shopped online was much lower than the percentages for non-online shoppers (Table 5.2).

5.4 Assessment for Factor Analysis

After the data was collected and tabulated, a series of statistical assumptions were met to ensure the appropriateness of the data for factor analysis and logistic regression analysis.

5.4.1 Statistical Assumptions for Factor Analysis

The statistical assumptions of normality, homoscedasticity and linearity for factor analysis are normally tested in order to avoid the observed correlations between variables being diminished. If the data matrix has sufficient correlations, the potential influence of violations of these assumptions is minimised, and the use of factor analysis is justified (Hair et al., 2010). With reference to the discussion in Section 4.5.1.4, it was noted that an examination of the correlation matrix, inspection of the anti-image correlation matrix, Barlett's Test of Sphercity, and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy are normally used to test the data matrix.

5.4.1.1 Examination of the Correlation Matrix

A visual examination of the correlation matrix (Table 5.3) revealed that there were a substantial number of correlations above 0.30. Therefore, factor analysis was deemed to be appropriate (Hair et al., 2010; Janssens et al., 2008).

5.4.1.2 Inspection of the Anti-image Correlation Matrix

A visual inspection of the off-diagonal elements of the anti-image correlation matrix (Table 5.4) showed the majority of these values were close to zero (absolute vale less than 0.01). This result indicates that the data set was appropriate for factor analysis (Hair et al., 2010).

5.4.1.3 Bartlett's Test of Sphercity

Bartlett's Test of Sphercity was performed in order to assess whether the correlation matrix came from a population of variables that were independent. The test value (Table 5.5) was high (9624.777) and the level of significance was low (0.000). Therefore, the null hypothesis was rejected, indicating that the data was appropriate for factor analysis (Stewart, 1981; Balen et al., 2010).

5.4.1.4 The Kaiser-Meyer-Olkin Measure of Sampling Adequacy

The Kaiser-Meyer-Olkin Index measures values from 0 to 1.0, reaching 1.0 when each variable is perfectly predicted without error by the other variables (Hair et al., 2010). In this research, the test result (Table 5.5) was 0.877, is "meritorious"

according to Kaiser and Rice's definition (1974). Thus, the data set was deemed appropriate for factor analysis.

5.4.2 Factor Analysis Results

The results of the statistical assumption tests indicated that the data set was appropriate for factor analysis. Therefore, principle component factor analysis was conducted on all of the items that were identified from the literature review and focus group interviews. The results are summarized in the following sections.

5.4.2.1 The Latent Roots Criterion

The results of the latent root criterion (Table 5.6) showed that the 36 variables submitted for factor analysis could be extracted to form nine dimensions. These nine dimensions explain 69.739 percent of the variation in the data.

5.4.2.2 The Scree Test

Figure 5.1 illustrates that by laying a straight edge across the bottom portion of the roots, there are nine factors before the curve becomes approximately a straight line. Thus, this result indicates that the extraction of nine factors is appropriate for this analysis.

Figure 5.1 Scree Plot
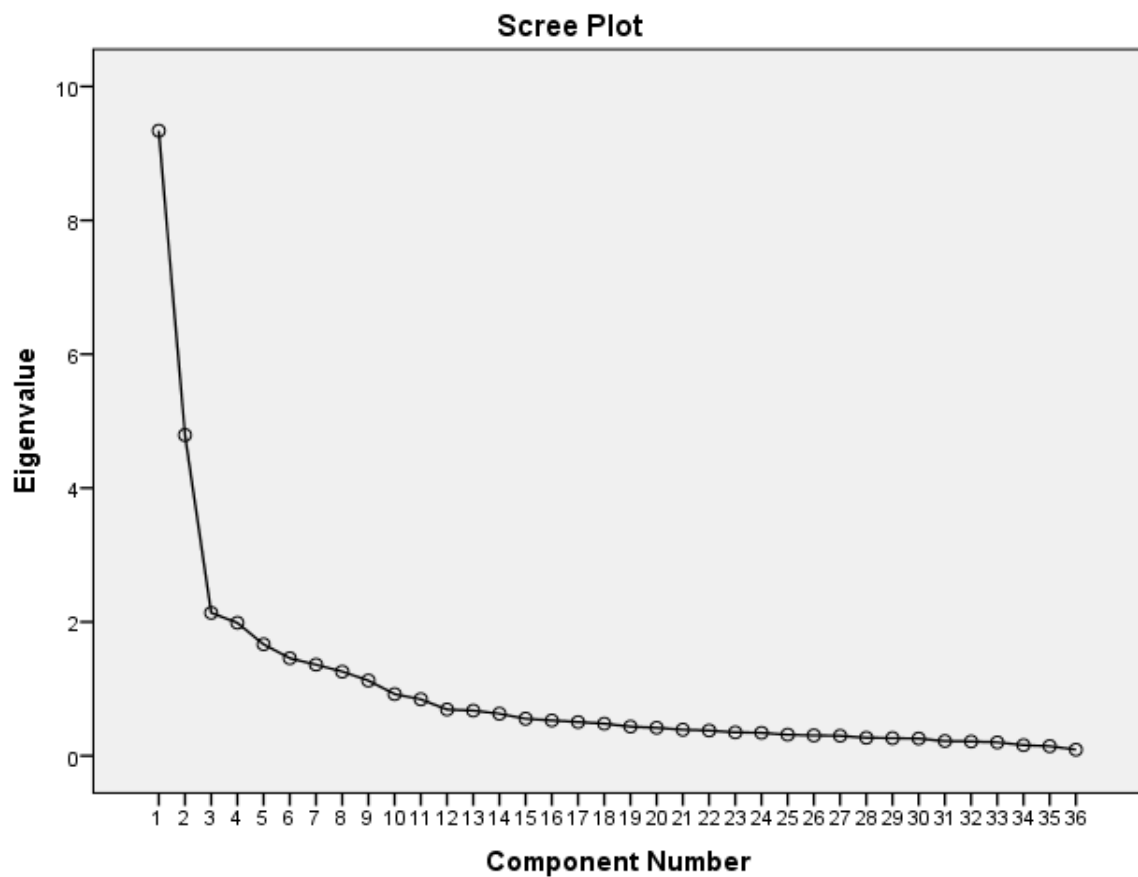
5.4.2.3 Rotation Results

Factor Rotation simplifies the rows and columns of the factor matrix and maximise a variable's loading on a single factor in order to facilitate interpretation (Hair et al., 2010). An orthogonal rotation (VARIMAX) and an oblique rotation (OBLIMIN) are normally used to explain the computed factor matrix. In this research, both the VARIMAX and OBLIMIN displayed a similar structure of factor loadings (Table 5.7 and 5.8). However, a VARIMAX rotation was adopted as it produced a clearer structure in terms of content validity of the factors.

5.4.2.4 Factor Interpretation

According to Hair et al. (2010), a sample size of 350 and factor loadings greater than ±0.30 are significant. However, the authors also maintain that values greater than ±0.50 are generally necessary for practical significance. Thus, ±0.50 was used as a cut-off point as factor loadings of ±0.05 produced a better factor structure and helped in the formulating of the factor rotation. In this research, the results (Table 5.7 and Table 5.8) show that all of the factors have significant loadings above ±0.50 using the VARIMAX method. However, one variable (V24) was excluded from the factor structure as V24 did not load on any of the nine identified factors. The rest of the 35 variables were sorted into nine factors (Table 5.6): (1) service quality, (2) perceived risk, (3) website factors, (4) country of origin, (5) price, (6) convenience, (7) product variety, (8) subjective norms, and (9) brand image.

5.4.3 Assessment of Summated Scales

The dimensionality, reliability, and content validity of measurement scales were assessed before summation of the items.

5.4.3.1 Dimensionality

None of the variables cross-loaded on any of the other factors (Table 5.7).

5.4.3.2 Reliability

All the variables except V24 were subjected to reliability tests. The Cronbach's Alpha was employed to test the reliability of each factor. In this research, all of the factors have a Cronbach's Coefficient Alpha value of greater than 0.60. The results of the reliability tests for the construct measures are shown in Table 5.9.

5.4.3.3 Content Validity

Content validity subjectively assesses the correspondence between the individual items and the concept (Hair et al., 2010). Inspection of all the variables demonstrates that the selection of scale items is adequate and includes theoretical and practical considerations. When applying the VARIMAX technique, all variables loaded on the nine sub-dimensions that were originally proposed in the research model. Thus, it was concluded that the items exhibit adequate content validity.

5.4.4 Statistical Assumptions for Logistic Regression Models

Numerous statistical tests were conducted to determine if the assumptions of the logistic regression analysis were satisfied.

5.4.4.1 Outliers

Outliers are defined by Hair et al. (2010) as the observations that are substantially different from the other observations. The outliers were identified and removed from the analysis to reduce the effects of their influence on the regression analysis.

5.4.4.2 Multicollinearity

The Pearson Correlation Matrix was used to inspect the correlations between the independent variables. The result (Table 5.10) shows that no correlations exceed 0.80. Therefore, no multicollinearity problems exist in the regression models used in this research (Hair et al., 2010).

5.4.4.3 Data Level

Due to the dichotomous nature of the dependent variable (adopt or non-adopt), binary logistic regression was applied in this research (Garson, 2013). All of the demographic items which are categorical characteristics are coded as dummy variables in the analysis.

5.5 Results Relating to Research Objective One (Hypotheses 1 to 9)

Research Objective One was designed to identify the factors which influence consumers' online shopping adoption in Australia. Logistic regression analysis was applied to satisfy Research Objective One and test Hypotheses 1 to 9. Table 5.11 illustrates the logistic regression results. In general, the model fits the data very well, as Chi-Square = 437.23, P value = 0.0000 and Degrees of Freedom = 16. The model explains 73.56 percent (Pseudo R-squared) of the variance in the choice of online shopping. The results for the significant factors are summarized in Table 5.12, and the summary results of Hypothesis One to Hypothesis Nine are shown in Table 5.13.

Table 5.12 Logistic Regression Results for Influencing Factors

Factors	B	S.E.	Sig.
Website Factors	1.458	.303	.000***
Perceived Risk	-1.708	.258	.000***
Service Quality	-1.783	.388	.000***
Brand Image	.989	.223	.000***
Product Variety	.797	.207	.000***
Country of Origin	.529	.212	.004***
Young Age	1.125	.516	.028**
High Education	1.324	.581	.031**
Professional	1.570	.656	.004***
Student & Sales/ Service	1.438	.727	.042**

Note: *** denote statistically significant at the 0.01 level of significance
     ** denote statistically significant at the 0.05 level of significance

Table 5.13 Hypotheses 1 to 9 Test Results

Hypotheses	Supported	Non Supported
H1: High perceptions of website visual design will have a positive effect on online shopping adoption.	✓	
H2: Consumers with higher levels of perceived risk will produce negative attitudes towards online shopping adoption.	✓	
H3: Poor e-service quality (e-SQ) has a significant negative effect on online shopping adoption.	✓	
H4: A strong and favourable brand image has a positive influence on online shopping adoption.	✓	
H5: Consumers' perceived level of online shopping convenience has a significant and positive effect on the online shopping adoption.		✓
H6: A perceived lower price has a positive effect on online shopping adoption.		✓
H7: A large product variety range has a positive effect on online shopping adoption.	✓	
H8: Country-of-origin is positively associated with consumer online shopping adoption.	✓	
H9: Stimulation from family members, peers, friends, media, advertising and promotion affect consumers' decisions to adopt online shopping.		✓

The results presented in Table 5.11 show that the coefficient value for all factors: Website Factors, Perceived Risk, Service Quality, Brand Image, Product Variety and Country-of-Origin, are significant at the 0.01 level of significance. In addition, Table 5.12 shows that the well-designed Website (factors) positively influences Australian consumers' choice of online shopping. Thus, Hypothesis One is supported. In addition, Perceived Risk and poor e-SQ have negative effects in influencing Australian consumers' online shopping adoption. Thus, Hypotheses Two and Three are supported. Moreover, favourable Brand Image and strong Country-of-Origin products have positive effects on the Australian consumers' online shopping adoption. Therefore, Hypotheses Four and Eight are supported. Similarly, the moderately large Product Variety factor has a positive effect on online shopping adoption, providing support for Hypothesis Seven.

However, Table 5.11 also shows that there are no significant relationships between Convenience, Price and Subjective Norms, in Australian consumers' choice of online shopping. Hence, Hypotheses Five, Six, Nine are rejected.

5.6 Results Relating to Research Objective Two

Research Objective Two was designed to determine, in order of importance, the factor which affect consumers' adoption of online shopping in Australia. Marginal effect analysis was used to satisfy Research Objective Two (see Table 5.14). Table 5.14 presents the rankings of the decision factors and the demographic factors which influence Australian consumers' decisions about online shopping adoption.

Table 5.14 Marginal Effects of Rankings of Decisions and Demographic Factors which Influence Consumers' Choice of Online Shopping

Factors	Marginal Effect	Ranking
Perceived Risk	-.1701362	1
Service Quality	-.1653826	2
Professional	.156643	3
High-level Education	.1358317	4
Young Age	.1257546	5
Website Factors	.1232401	6
Student & Sales/ Service	.1151705	7
Brand Image	.1017359	8
Product Variety	.0760357	9
Country-of-Origin	.0563173	10

Table 5.14a shows that the six decision factors, which were derived from the literature review, factor analysis, and the logistic regression model, have been separated from the demographic factors, and are re-ranked based on the relative importance within the groups (see Table 5.13a)

Table 5.14a Marginal Effect of the Decision Factors

Factors	Marginal Effect	Ranking
Perceived Risk	-.1701362	1
Service Quality	-.1653826	2
Website Factors	.1232401	3
Brand Image	.1017359	4
Product Variety	.0760357	5
Country-of-Origin	.0563173	6

Based on the results of the marginal effect analysis in Table 5.14a, Perceived Risk ranked as the first influential factor on Australian consumers' adoption of online shopping. A unit increase in the Perceived Risk factor results in an estimated 17.01 percent fall in the probability of consumers choosing online shopping. The second most influential factor in consumer online shopping adoption is Service Quality. Table 5.14a shows that the probability of consumers' online shopping adoption decreases by 16.53 percent if retailers offer poor e-SQ. The third important decision factor in consumers' online shopping adoption is Website Factors. A unit increase in Website Factors results in a 12.32 percent increase in the probability of a consumer adopting online shopping. Similarly, the marginal effect of Brand Image indicates that the probability of consumers' online shopping adoption increases by 10.17 percent if the Brand Image is strong and favourable. According to the marginal effects results, the last two important influential decision factors are Product Variety (7.6%) and Country-of-Origin (5.63%). The marginal effect results indicate that a unit increase in Product Variety and Country-of-Origin, results in a percent 7.6 and a percent 5.63 probability increase in a consumer adopting online shopping, respectively.

Table 5.14b Marginal Effects of the Demographic Characteristics

Factors	Marginal Effect	Ranking
Professional	.156643	1
High-level Education	.1358317	2
Young Age	.1257546	3
Students & Sales/Service	.1151705	4

Table 5.14b is derived from Table 5.14 which shows the marginal effects of the respondents based on consumers' different demographic characteristics. The marginal effect results show that if consumers are in the professional group and have a high level of education (bachelor degree or above), the probability of choosing online shopping increases by 15.67 percent and 13.58 percent, respectively. The third influential demographic characteristic is Young Age group. The result shows that a unit increase in the Young Age group factor results in a 12.58 percent probability of a consumer adopting online shopping. In addition, Students and Sales/Service and Manager and Company Employee, groups are the fourth and fifth most important demographic factors, respectively that influence consumers' decisions to shop online. For example, if consumers are Students or doing Sales/Service, then it results in an 11.51 percent increase in the probability of Internet shopping.

5.7 Research Relating to Research Objective Three (Hypotheses 10 to 14)

Research Objective Three was designed to examine whether different demographic characteristics have an impact on the adoption of online shopping in Australia. Hypotheses 10 to 13 were tested using logistic regression in order to answer Research

Objective Three. The hypotheses test results are summarized in Table 5.15 (see results in Table 5.12). In addition, ANOVA and T-test were used to test Hypothesis 14, in order to determine whether there are different perceptions of online shopping decision-factors within the demographic groups.

According to the results shown in Table 5.12, the coefficient values for Young Age is significant at the 0.05 level of significance and show a positive relationship with online shopping adoption. Thus, Hypothesis 10 is supported. In addition, the logistic results show that consumers with a high level of Education are more likely to adopt online shopping. Therefore, Hypothesis 11 is supported. Moreover, the logistic results also show Professional, Student and Sales/Service factors have a positive relationship with online shopping adoption. Thus, Hypothesis 12 is supported. However, the coefficient value for both Middle Income and High Income do not show any statistical significance with online shopping adoption. Therefore, Hypothesis 13 is rejected.

Table 5.15 Hypotheses 10 to 13 Test Results

Hypotheses	Supported	Non Supported
H10: The younger generation is more willing to spend money online.	✓	
H11: There is a positive relationship between higher education levels and the adoption of online shopping.	✓	
H12. Occupation has an impact on the adoption of online shopping.	✓	
H13. There is a positive relationship between higher incomes and the adoption of online shopping.		✓

The results in Table 5.16 indicate that with regard to Perceived Risk and Subjective Norms, males and females respondents perceive online shopping adoption differently,

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although there are no perceptual differences between male and female respondents regarding Website Factors, Service Quality, Brand Image, Product Variety, Country-of-Origin, Convenience, and Price. In addition, consumers in different Age groups, with different Education levels, and with different Occupations, attribute different amounts of importance to the factors which influence online shopping adoption: Perceived Risk, Service Quality, Website Factors, Brand Image, Convenience, Price, Product Variety and Country of Origin (Tables 5.17 to 5.19).

5.7.1 Age Relating to Online Shopping Adoption

The results in Table 5.20 indicate that Perceived Risk is considered to be an important factor for different consumer Age groups. Brand Image, Product Variety and Country-of-Origin are perceived to be more important factors by consumers in the Young Age Group than consumers in the Older Age Groups. In contrast, the Older Age Group consumers perceive Subjective Norms to be more important than the Young and Middle Age Groups. In addition, the Young and Middle Age Groups are more concerned with Website Factors compared to the Older Age Group.

5.7.2 Education Relating to Online Shopping Adoption

Table 5.21 shows that Website Factors, Product Variety and Country-of-Origin are perceived as more important factors by the Middle Education Group, than the High Education and Low Education Groups, in adopting online shopping. Perceived Risk is considered to be a more important factor by the High Education Group than the other groups with Low and Middle Education Levels.

5.7.3 Occupation Relating to Online Shopping Adoption

Table 5.22 illustrates that Perceived Risk is considered to be more important by consumers in the Self-Employed, Labourer, Farmer, Unemployed, Retired, and Other, group categories, than other occupational groups. Moreover, the Self-Employed, Labourer, Farmer, Unemployed, Retired, and Other, groups and the Students and Service/Sales group, categories perceive Service Quality to be more important compared to other occupational groups when considering online shopping adoption. In addition, Manager, Company Employee and Student and Service/Sales Groups, perceive Country-of-Origin as a more important factor than the other groups.

Chapter 6 Conclusions and Implications

6.1 Introduction

This chapter reviews the research findings and conclusions based on the results of the statistical analyses and the discussion presented in Chapter Five. The theoretical and managerial contributions, limitations, and directions for future study are also discussed.

In this research, 14 hypotheses were tested to address the three Research Objectives. Hypotheses One to Nine relate to Objective One. The ranking of the important factors that influence Australian Consumers' choices as to whether to adopt online shopping were identified in order to satisfy Research Objective Two. Research Objective Three was satisfied by examining Hypotheses 10 to 14.

6.2 Conclusions Pertaining to Research Objective One

Research Objective One: To identify the factors which influence consumer adoption of online shopping in Australia.

Research Objective One was satisfied by testing Hypotheses One to Nine. Hypotheses One to Nine propose that: Website Factors, Perceived Risk, Service Quality, Brand Image, Convenience, Price, Product Variety, Country-of-Origin, and Subjective Norms, impact on consumers' decisions as to whether to adopt or not adopt online shopping.

In the logistic regression results, Website Factors, Brand Image, Product Variety, and Country-of-Origin have a positive influence on consumers' decisions as whether to

adopt online shopping. Thus, Hypotheses One, Four, Seven and Eight were accepted. These findings are supported by the findings of Liang and Lai (2002), Gao and Wu (2010), Del Rio et al. (2001), Keller (1993), Lee and Tan (2003), Menon and Kahn, (1995), Keeney, (1999), For example, Liang and Lai (2002) and Gao and Wu (2010) propose that the design elements of online virtual store have important effects on consumers' beliefs and attitudes. The more that a consumer encounters an unpleasant situation over the poorly-designed website, the more likely he/she is to abandon the shopping cart and leave the store without making a purchase.

In addition, Del Rio et al. (2001), Keller (1993), and Lee and Tan (2003), also found that the more favourable the Brand Image, the more positive is the attitude toward the branded product and its attributes. A favourable product brand image has a positive effect on purchase intentions and consumers are more likely to shop online for products with well-established brand names. Moreover, product variety provides hedonic stimulation which leads to shopping pleasure. Also, a wide selection of products leads to better comparison shopping and eventually better purchases (Keeney, 1999; Menon & Kahn, 1995). Furthermore, Keller (1993) revealed that country image can influence the key dimensions of country equity; such as country associations, perceived quality, and consumers' loyalty to a country. In particular, country equity is believed to be derived from the association of the product with the country.

The logistic regression results also show that there is a negative relationship between the decision factors, Perceived Risk and Service Quality, and consumers' adoption of online shopping. Therefore, Hypotheses Two and Three are supported. This result is supported by the findings of Doolin et al. (2005), Pires, Stanton, and Eckford (2004), Van der Heijden, Verhagen and Creemers (2003) and Cai and Jun (2003). In these studies, Doolin et al. (2005) proposed that perceived risk is a critical antecedent to the

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hesitation of shoppers to purchase via the Internet. In addition, service quality is considered to be one of the most important determinants of online retailers' success. Poor e-SQ appears to have a negative impact on consumers' online shopping adoption (Cai & Jun, 2003).

Hypotheses Five, Six and Nine were rejected as the logistic regression results are contrary to the findings of Darian (1987), Gillett (1976), Vijayasarathy and Jones (2000), Vijayasarathy (2004), and Chan et al. (2011). For example, shopping convenience is one of the most prominent motivators of non-store shopping, and an overview of in-home shoppers' pinpointed convenience as the primary motivating factor in consumer decisions to buy at home and the major strength of modem in-home retailing. (Gillett, 1976; Darian, 1987). In addition, Vijayasarathy and Jones (2000) found product price has long been considered a key predictor of online shopping consumer choice. Moreover, both Vijayasarathy (2004) and Chan et al. (2011) point out that an individual's intention to engage in this behaviour can be expected to be influenced by people who are important to the individual. Furthermore, an appropriate promotion strategy changes a consumer's perceptions of purchasing online.

6.3 Conclusions Relating to Research Objective Two

Research Objective Two: To determine the order of importance of the factors that affect consumers' adoption of online shopping in Australia.

The results of the marginal effects test conducted in this research are that there are six decision factors influencing consumers' choosing of online shopping versus non-

online shopping. Among the six factors, Perceived Risk was the most important factor impacting consumers' decisions to adopt online shopping. The second influential factor was Service Quality. Website Factors ranks as the third most important decision factor. The fourth and fifth most important factors are Brand Image and Product Variety respectively. Country-of-Origin ranks as the sixth most important factor according to the marginal-effects results (see Table 5.14a in Chapter Five).

With regard to the demographic characteristics, consumers who work as Professionals have the highest probability of shopping online. In addition, consumers with a High Education level are more likely to shop online, followed by the Young Age group. Moreover, the marginal-effects results also indicate that the Students and Sales/Service group is the fourth most likely group to adopt online shopping (see Table 5.14b in Chapter Five).

6.4 Conclusions Relating to Research Objective Three

Research Objective Three: To examine whether different demographic characteristics have an impact on the adoption of online shopping in Australia.

Hypotheses 10 to 13 proposed that consumers' demographic characteristics such as Young Age group and Higher Education level are positively related to consumers' online shopping behaviour. The logistic regression results show that Younger group, Higher Education, and Occupation groups, all have a different probability associated with the adoption of online shopping. Thus, Hypotheses 10, 11, 12 and 13 are supported. In addition, the ANOVA (F-tests) results demonstrate that consumers have different perceptions regarding the adoption of the online shopping-decision factors,

based on their demographic characteristics: age, education levels and occupation. Therefore, Hypothesis 14 is supported. These results are consistent with Hansen (2005), Donthu and Garcia (1999), and Li, Kuo and Russell (1999).

However, the results from the logistic regression analysis and ANOVA show there are no statistically significant relationships between consumers' incomes and online shopping adoption. Thus, Hypothesis 13 is rejected, although contrary to the results in Brashear et al.'s (2009) study showing that online consumers tend to possess greater wealth and have high incomes.

6.5 Theoretical Implications

Firstly, this study adds to the limited empirical research available on consumers' online shopping adoption in Australia. In addition, the application of the theoretical model of consumer purchasing behaviour in Australian e-commerce industries developed in this study provides useful information for the future researchers.

Secondly, although some previous empirical studies have identified the factors that influence consumers online shopping adoption in different cultural settings, this research offers a further investigation of these factors in an Australian setting. Thirdly, this research used logistic regression analysis to examine the factors influencing consumers' online shopping adoption. The results of this research adds further support for using logistic regression analysis as an appropriate method for empirically examining the influential factors impacting on consumers choosing to shop or not shop online.

Fourthly, this research confirms that a certain number of the decision factors that influence consumers' adoption of online shopping identified in previous studies in

other countries, can also be applied to the Australian online shopping market; such as Website Factors, Perceived Risk, Service Quality, Brand Image, Product Variety and Country-of-Origin.

6.6 Managerial Implications

The empirical results of this study identify six important decision factors: Perceived Risk, Service Quality, Website Factors, Brand Image, Product Variety and Country-of-Origin, that influence Australian consumers' decisions to adopt online shopping. Online retailers and their marketing staff should have a thorough understanding of these factors and their impact on online shopping decisions. This research reveals some valuable insights into the link between e-shopping and consumers' decisions to shop or not to shop online. The results can help online retailers and marketers to develop appropriate marketing strategies and to make the correct marketing decisions in order to retain current consumers and attract potential consumers. In addition, in order to increase their competitive advantage, online marketers and retailers need to thoroughly understand their consumers. Thus, they need to effectively and continuously improve their online offerings (Liu et al., 2008).

Perceived Risk

In this research, perceived risk ranked as the number one influential factor on the decision of consumers to adopt online shopping. Previous researchers indicate that perceived risk is a critical antecedent to the hesitation of shoppers to purchase via the Internet (Doolin, Dillon, Thompson, & Corner, 2005; Kuhlmeier & Knight, 2005; Rajamma, 2006). In addition, risk reduction is seen as a key to increasing consumer participation in e-commerce (Swaminathan et al., 1999). Thus, in order to minimize

consumers' perceived risk associated with online shopping, online marketers and retailers need to design risk-reducing strategies to increase online shopping adoption as described in the following paragraphs.

In this research, privacy and security of personal information, security of online transactions, and product risk, are the main factors involved in Australian consumers' risk perception. Therefore, in risk-reducing strategies, online marketers and retailers should emphasise the view that the e-shopping mode is safe and that the idea that e-shopping is safe has been proved in different countries. In dealing with consumers' personal information, companies must be responsible for protecting consumers' personal details.

In the consideration of privacy and security risks, online marketers and retailers need to improve the formal privacy policies of their online security systems on their websites; and cooperate with encryption technology companies to inform consumers about their security measures, as uncertainty over technology is more dangerous than knowing and being informed about technology (Jessica et al., 2013). In addition, in order to mitigate the risk of incorrect product choice, online retailers should offer excellent product warranty policies, money back guarantees, and the right to exchange the product without additional shipping charges (Heiman et al., 2015). Moreover, regarding the inability to physically inspect the product prior to an online shopping transaction, online retailers should provide detailed and complete product information on their official website page (Hasan, 2016).

Service Quality

Based on the empirical findings of this research, service quality plays the second significant role in influencing consumers' decisions regarding online shopping adoption. This result is consistent with previous research regarding high quality service which can garner positive word-of-mouth endorsement and publicity which can increase consumers' adoption of online shopping. The service quality dimensions applied in this research, and which were identified as reliability, maintainability, responsiveness and empathy, provide useful information that online marketers and retailers should focus on to effectively improve their e-service quality.

An additional concern consumers have regarding service quality in the online shopping context, is where retailers fail to answer consumers' concerns and enquiries, and delayed delivery times and unguaranteed products. Thus, online marketers and retailers need to increase the efficiency of delivery and provide quick responses to consumers concerns and inquiries. In order to gain positive word-of-mouth endorsements, online marketers and retailers need to promptly and efficiently deal with consumers' complaints, in order to close the consumers' complaint circle. For example, in addition to use communication channels such as e-mail, online marketers and retailers can also offer 24-7 live customer services, such as live customer service representatives and technology support staff. Moreover, in order to increase customers' satisfaction of logistic transportation, the best solution for online retailers is to own an organised physical distribution channel. If an online retailer lacks resources to build his/her own communication channel, a specialised third party in logistics management can help the online retailer to optimise the transportation route and ensure timely and accurate product delivering.

Another consideration in service quality is the personalized online shopping environment. Zhou et al. (2007) claim that consumer loyalty and the online

experience can be improved by a personalised online shopping environment. Thus, online marketers and retailers need to develop online marketing strategies to personalise the shopping environment in order to meet different consumers' needs and preferences. For example, the online community, interactivity, or habitual purchasing behaviour, recommendations can help online retailers to retain and attract potential consumers.

Website Factors

The results of this research confirm that website factors have the third strongest influence on consumers' decisions to shop online. A good general classification scheme for website design includes: visual design, such as layout and colour that gives consumers their first impressions; content design, such as information provided on the website; and social cue design, which is embedded in the web interface and allows people to communicate using different media; and is important for retaining consumers. The results of this research confirm that consumers' decisions to purchase online can be affected by website factors, such as page loading time, website navigation, and access to product information. This result is consistent with previous research results that show that the design elements of the online virtual store have important effects on consumers' beliefs and attitudes (Liang & Lai, 2002). In addition, the information provided on online retailers' web pages needs to be succinct and understandable. If consumers encounter unclear or difficult terms and conditions, or poor product information, then they could be unwilling to make further purchases online.

Moreover, to attract more potential consumers, online marketers and retailers have adopted various types of image interactivity technology (IIT). For example, online

retailers and marketers can use close-up pictures or zoom-in functions, mix-and-match functions, and 3D virtual models to enhance consumers' online shopping experience (Kim, Fiore & Lee, 2007). In addition, in order to attract more non-online shoppers, the design of the purchasing process should be secure and simplified.

Brand Image

The results of this research reveal brand image as the fourth strongest ranked influential factor in consumers' decisions regarding online shopping adoption, and is consistent with Beldona and Wysong's (2007) finding: a strong brand can help consumers differentiate the quality of a product to offset this sense of insecurity. From the perspective of the consumer, the virtual nature of the Internet disagrees with the sensual recognition that purchasers are used to, and aggravates their sense of insecurity. Especially in specialised online shops such as fashion apparel, reducing product risk is more important than reducing financial risk. Hence, strong brand image products emerge as the most valuable asset for online retailers. Moreover, online marketers and retailers need to enhance their brand equity in order to positively influence consumers' impressions of product attributes.

Product Variety

In the acceptance of the Internet as a shopping medium, product variety is also pertinent and crucial and is ranked 5th by the marginal analysis. The results of this research are consistent with the findings of Arnold et al. (1983), Keeney (1999), Sin and Tse (2002) and Menon and Kahn (1995). The findings reveal that repeat patronage of a store depends on perceived product variety. In addition, a greater perceived product variety leads to greater ease of navigation for consumers with low-choice uncertainty. A wide selection of products leads to better comparison shopping

and eventually better purchases. Therefore, innovative online retailers should increase the number of product types and brands available online in order to provide hedonic stimulation which leads to online shopping pleasure.

Country-of-Origin

Country-of-Origin is ranked as the 6th most important factor that influences consumers' online shopping decision. The result confirms that country image can influence the key dimensions of country equity, such as country associations, perceived quality, and consumers' loyalty to a country. In particular, country equity is believed to be derived from the association of the product with a country. Evaluations by consumers about the COO image affects the ability to brand-recall: that is, the brand value, brand awareness, perceived quality, and brand loyalty directly, and the buying decisions of consumers through the brand equity. The COO factor is a critically important factor in terms of the market performance of the brand or product in the online markets (Saydan, 2013). As the country image of Australia is reliable and trusted, especially in selected categories such as organic food, dairy, and medicine, Australian online marketers and retailers need to design their marketing strategies to promote Australia as a powerful country, in order to attract both domestic and international consumers to purchase Australian products online.

Demographic Characteristics

Previous research findings also show that consumers with different demographic characteristic have different views regarding online shopping adoption. Thus, online marketers and retailers need to identify their target market and target consumers. When designing for marketing strategies and activities, consumers' ages, education levels, and occupations, need to be considered for market segmentation. In the

marginal effect results of this research, Young Age group consumers are more willing to accept online shopping, compared to Middle and Older Age groups. Thus, online marketers and retailers need to target young consumers, for example, by setting up different price strategies and promotion strategies that will attract young consumers as they have lower disposable incomes.

In addition, the results of this research indicate that different income levels do not influence online shopping decisions. Australian consumers with higher income levels have higher negative attitudes regarding online shopping adoption. The main causative reason is that these consumers demand higher standards in product quality, service quality and brand. Thus, they prefer to purchase from up-market retail stores where they believe they can physically examine the products and receive good supporting services. In order to attract higher income level consumers, online marketers and retailers need to provide advanced image interactivity technology (IIT) in order to minimize consumers' concerns regarding their inability to physically examine products online (Shergill & Chen, 2005). In addition, online retailers and marketers need to provide personalised service to attract higher level consumers in order to better understand their needs and discover their potential purchasing requirements.

Moreover, the marginal effect results also find that older consumers are less likely to shop online. Doolin et al. (2005) found that older consumers may be discouraged from using the Internet as a shopping medium due to low Internet experience and risk concerns. Thus, targeting the advantages of Internet use to older consumers can help them to accept online shopping.

6.7 Limitations and Avenues for Future Research

This research provides contributions from both theoretical and practical perspectives to the understanding of consumers' online shopping adoption; however, there are several limitations associated with this research.

Firstly, based on the factor analysis results, six decision factors have been analysed in this research. However, there may be other factors that can influence consumers' online shopping adoption decisions. Future research should therefore consider other factors that can influence consumers' decisions. Factors such as Discrete Purchases, Advanced Logistics and Geographic Extension have most recently been discussed as possible influences on shopping online.

Secondly, this research was conducted in Sydney which is the capital of New South Wales, and the most popular Oceania city. The likelihood of shopping online and the profile of consumers may be found to vary, and survey expanded to other states of Australia, such as Western Australia, Northern Territory or Tasmania may find further factors. In addition, the sample respondents were limited to consumers in the mall who were willing to take part in the survey and who had a good understanding of research. Therefore, future studies could collect data from less developed areas in Australia using different data collection methods to get more generalised results and the resultant managerial implications.

Thirdly, older-age consumers were underrepresented in this research as well as labourers, farmers and retired groups, as the data was collected in the city centre and shopping centres. However, older-age group, labourers, farmers and retired groups may have different considerations regarding online purchasing, such as consumer

resources. Future studies may want to target such groups to fill the gap in the

information regarding the online shopping market.

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Table 5.1 Summary Statistics of Missing Data for Original Sample (N=463)

	N	Mean	Std. Deviation	Missing	
				Count	Percent
V1	463	5.153	1.3356	0	.0
V2	463	4.803	1.3102	0	.0
V3	463	4.564	1.3207	0	.0
V4	463	4.827	1.2827	0	.0
V5	463	5.071	1.3425	0	.0
V6	463	4.436	1.7432	0	.0
V7	463	4.704	1.6133	0	.0
V8	463	4.432	1.7405	0	.0
V9	463	4.367	1.6694	0	.0
V10	463	4.633	1.2652	0	.0
V11	463	4.754	1.2741	0	.0
V12	463	4.877	1.2536	0	.0
V13	463	4.538	1.3636	0	.0
V14	463	4.384	1.6485	0	.0
V15	463	4.240	1.5489	0	.0
V16	462	4.660	1.4277	1	.2
V17	462	5.121	1.4425	1	.2
V18	462	5.041	1.4507	1	.2
V19	462	4.918	1.3870	1	.2
V20	463	4.918	1.4072	0	.0
V21	463	4.758	1.5168	0	.0
V22	463	5.076	1.4252	0	.0
V23	463	4.965	1.4396	0	.0
V24	460	4.593	1.6108	3	.6
V25	463	4.842	1.3544	0	.0
V26	463	4.797	1.3683	0	.0
V27	463	4.851	1.3978	0	.0
V28	463	5.104	1.5480	0	.0
V29	463	4.499	1.5720	0	.0
V30	463	5.065	1.5968	0	.0
V31	460	4.465	1.4940	3	.6
V32	460	4.420	1.4642	3	.6
V33	460	4.565	1.5075	3	.6
V34	463	4.564	1.4444	0	.0
V35	463	4.337	1.5468	0	.0
V36	463	4.592	1.6196	0	.0

Table 5.2 Descriptive Statistic of Demographic Characteristics

Variables	N		Total Respondents		Online shoppers		Non-online shoppers	
			Frequency (NO. of respondents per option)	Percent	Frequency (NO. of respondents per option)	Percent	Frequency (NO. of respondents per option)	Percent
Gender	Valid	Male	237	48.8	148	48.5	89	56.3
		Female	226	51.2	157	51.5	69	43.7
		Total	463	100.0	305	100.0	158	100.0
Age	Valid	18-25	140	30.2	114	37.4	26	16.5
		26-35	155	33.5	123	40.3	32	20.3
		36-45	77	16.6	42	13.8	35	22.2
		46-55	45	9.7	18	5.9	27	17.0
		56-65	23	5.0	4	1.3	19	12.0
		66+	23	5.0	4	1.3	19	12.0
		Total	463	100.0	305	100.0	158	100.0
Education	Valid	Primary Education or lower	1	0.2	1	0.3	0	0
		Middle School	6	1.3	1	0.3	5	3.2
		High School	96	20.7	55	18.1	41	26.0
		Diploma /Certification	65	14.0	26	8.5	39	24.6
		Bachelor Degree	191	41.3	148	48.5	43	27.2
		Postgraduate Degree	104	22.5	74	24.3	30	19.0
		Total	463	100.0	305	100.0	158	100.0
Occupation	Valid	Professional	146	31.5	105	34.4	41	26.0
		Manager	54	11.7	45	14.8	9	5.7
		Government Officer	17	3.7	12	4.0	5	3.2
		Company Employee	53	11.4	33	10.8	20	12.6
		Self-employee	43	9.3	23	7.5	20	12.6
		Labourer	23	5.0	8	2.6	15	9.5
		Farmer	9	1.9	1	0.3	8	5.1
		Student	46	9.9	34	11.1	12	7.6
		Sales/Service	51	11.0	42	13.8	9	5.7
		Unemployed	1	0.2	0	0	1	0.6
		Retired	20	4.3	2	0.7	18	11.4
		Total	463	100.0	305	100.0	158	100.0
Income	Valid	500 AUS$ or Under	34	7.3	18	6.0	16	10.1
		500-1000 AUS$	25	5.4	20	6.6	5	3.2
		1001-1500 AUS$	31	6.7	26	8.5	5	3.2
		1501-2000 AUS$	43	9.3	26	8.5	17	10.8

		2001-3000 AUS$	80	17.3	52	17.0	28	17.7
		3001-5000 AUS$	134	28.9	90	29.5	44	27.8
		5001 AUS$ +	116	25.1	73	23.9	43	27.2
		Total	463	100.0	305	100.0	158	100.0

Table 5.3 The Correlation Matrix for Online Shopping Adoption

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36
V1	1.00	0.59	0.42	0.53	0.52	0.01	0.06	-0.01	0.06	0.30	0.23	0.26	0.24	0.12	0.15	0.23	0.29	0.39	0.29	0.21	0.21	0.23	0.32	0.28	0.30	0.33	0.16	0.46	0.35	0.39	0.34	0.34	0.31	0.21	0.13	0.19
V2	0.59	1.00	0.52	0.54	0.50	0.19	0.17	0.17	0.14	0.29	0.23	0.31	0.22	0.23	0.23	0.24	0.16	0.28	0.26	0.25	0.17	0.14	0.29	0.24	0.22	0.27	0.19	0.26	0.17	0.15	0.16	0.21	0.19	0.19	0.23	0.24
V3	0.42	0.52	1.00	0.53	0.36	0.36	0.30	0.29	0.33	0.38	0.29	0.34	0.33	0.35	0.32	0.41	0.15	0.14	0.19	0.15	0.13	0.10	0.18	0.10	0.17	0.23	0.16	0.10	0.21	0.02	0.16	0.18	0.17	0.20	0.26	0.26
V4	0.53	0.54	0.53	1.00	0.60	0.33	0.33	0.24	0.27	0.42	0.30	0.38	0.31	0.31	0.30	0.36	0.23	0.29	0.30	0.32	0.27	0.20	0.26	0.14	0.29	0.29	0.27	0.25	0.25	0.18	0.20	0.21	0.21	0.28	0.25	0.25
V5	0.52	0.50	0.36	0.60	1.00	0.26	0.23	0.21	0.22	0.24	0.19	0.30	0.33	0.25	0.22	0.29	0.25	0.39	0.27	0.25	0.25	0.22	0.30	0.24	0.21	0.28	0.23	0.34	0.25	0.23	0.21	0.22	0.21	0.12	0.18	0.26
V6	0.01	0.19	0.36	0.33	0.26	1.00	0.75	0.81	0.71	0.41	0.25	0.26	0.29	0.47	0.40	0.40	-0.12	0.05	0.13	0.16	0.15	0.07	0.04	-0.02	0.08	0.10	0.28	-0.19	0.05	-0.21	-0.12	-0.05	-0.11	0.05	0.43	0.33
V7	0.06	0.17	0.30	0.33	0.23	0.75	1.00	0.81	0.74	0.42	0.31	0.24	0.31	0.43	0.37	0.34	-0.08	0.16	0.16	0.19	0.20	0.11	0.07	0.07	0.12	0.14	0.28	-0.10	0.02	-0.14	-0.12	-0.09	-0.10	0.03	0.30	0.29
V8	-0.01	0.17	0.29	0.24	0.21	0.81	0.81	1.00	0.78	0.40	0.27	0.21	0.26	0.45	0.36	0.36	-0.11	0.09	0.10	0.17	0.18	0.07	0.01	-0.01	0.06	0.09	0.28	-0.16	0.00	-0.23	-0.19	-0.10	-0.13	0.05	0.42	0.32
V9	0.06	0.14	0.33	0.27	0.22	0.71	0.74	0.78	1.00	0.48	0.34	0.27	0.31	0.49	0.39	0.43	-0.09	0.05	0.20	0.19	0.19	0.13	0.08	-0.03	0.12	0.14	0.29	-0.08	0.14	-0.14	-0.05	-0.01	-0.08	0.10	0.40	0.32
V10	0.30	0.29	0.38	0.42	0.24	0.41	0.42	0.40	0.48	1.00	0.54	0.47	0.50	0.46	0.47	0.50	0.12	0.23	0.29	0.23	0.24	0.19	0.25	0.19	0.34	0.27	0.21	0.16	0.23	0.05	0.18	0.17	0.18	0.21	0.28	0.25
V11	0.23	0.23	0.29	0.30	0.19	0.25	0.31	0.27	0.34	0.54	1.00	0.62	0.47	0.36	0.41	0.43	0.08	0.18	0.29	0.23	0.20	0.15	0.30	0.14	0.34	0.29	0.29	0.12	0.19	0.05	0.20	0.17	0.19	0.18	0.20	0.17
V12	0.26	0.31	0.34	0.38	0.30	0.26	0.24	0.21	0.27	0.47	0.62	1.00	0.54	0.39	0.36	0.42	0.16	0.25	0.24	0.22	0.20	0.18	0.30	0.10	0.28	0.29	0.30	0.13	0.14	0.10	0.17	0.19	0.20	0.16	0.18	0.18
V13	0.24	0.22	0.33	0.31	0.33	0.29	0.31	0.26	0.31	0.50	0.47	0.54	1.00	0.62	0.53	0.51	0.14	0.27	0.22	0.17	0.18	0.25	0.29	0.25	0.33	0.32	0.28	0.17	0.16	0.12	0.25	0.24	0.22	0.10	0.21	0.19
V14	0.12	0.23	0.35	0.31	0.25	0.47	0.43	0.45	0.49	0.46	0.36	0.39	0.62	1.00	0.60	0.58	0.00	0.14	0.21	0.18	0.20	0.13	0.14	0.14	0.26	0.22	0.30	0.01	0.10	-0.09	0.17	0.20	0.13	0.11	0.38	0.30
V15	0.15	0.23	0.32	0.30	0.22	0.40	0.37	0.36	0.39	0.47	0.41	0.36	0.53	0.60	1.00	0.57	0.12	0.23	0.21	0.20	0.18	0.20	0.17	0.19	0.26	0.25	0.32	0.14	0.18	0.01	0.24	0.26	0.12	0.19	0.35	0.34
V16	0.23	0.24	0.41	0.36	0.29	0.40	0.34	0.36	0.43	0.50	0.43	0.42	0.51	0.58	0.57	1.00	0.10	0.16	0.22	0.20	0.18	0.18	0.17	0.09	0.29	0.28	0.32	0.09	0.23	-0.01	0.21	0.20	0.17	0.18	0.32	0.27
V17	0.29	0.16	0.15	0.23	0.25	-0.12	-0.08	-0.11	-0.09	0.12	0.08	0.16	0.14	0.00	0.12	0.10	1.00	0.66	0.18	0.16	0.11	0.15	0.19	0.20	0.11	0.11	-0.01	0.29	0.24	0.29	0.35	0.34	0.33	0.14	0.04	0.20
V18	0.39	0.28	0.14	0.29	0.39	0.05	0.16	0.09	0.05	0.23	0.18	0.25	0.27	0.14	0.23	0.16	0.66	1.00	0.23	0.24	0.24	0.26	0.28	0.43	0.22	0.29	0.14	0.37	0.20	0.31	0.32	0.32	0.34	0.14	0.14	0.33
V19	0.29	0.26	0.19	0.30	0.27	0.13	0.16	0.10	0.20	0.29	0.29	0.24	0.22	0.21	0.21	0.22	0.18	0.23	1.00	0.58	0.52	0.38	0.27	0.15	0.28	0.20	0.22	0.26	0.30	0.20	0.25	0.19	0.24	0.13	0.17	0.14
V20	0.21	0.25	0.15	0.32	0.25	0.16	0.19	0.17	0.19	0.23	0.23	0.22	0.17	0.18	0.20	0.20	0.16	0.24	0.58	1.00	0.69	0.35	0.21	0.05	0.24	0.14	0.21	0.18	0.18	0.17	0.08	0.05	0.09	0.16	0.16	0.15
V21	0.21	0.17	0.13	0.27	0.25	0.15	0.20	0.18	0.19	0.24	0.20	0.20	0.18	0.20	0.18	0.18	0.11	0.24	0.52	0.69	1.00	0.46	0.29	0.10	0.24	0.18	0.19	0.21	0.21	0.19	0.12	0.08	0.02	0.11	0.14	0.11
V22	0.23	0.14	0.10	0.20	0.22	0.07	0.11	0.07	0.13	0.19	0.15	0.18	0.25	0.13	0.20	0.18	0.15	0.26	0.38	0.35	0.46	1.00	0.35	0.29	0.24	0.23	0.19	0.28	0.27	0.22	0.21	0.23	0.12	0.13	0.11	0.09
V23	0.32	0.29	0.18	0.26	0.30	0.04	0.07	0.01	0.08	0.25	0.30	0.30	0.29	0.14	0.17	0.17	0.19	0.28	0.27	0.21	0.29	0.35	1.00	0.28	0.49	0.51	0.34	0.35	0.24	0.30	0.26	0.26	0.23	0.14	-0.03	0.05
V24	0.28	0.24	0.10	0.14	0.24	-0.02	0.07	-0.01	-0.03	0.19	0.14	0.10	0.25	0.14	0.19	0.09	0.20	0.43	0.15	0.05	0.10	0.29	0.28	1.00	0.27	0.33	0.13	0.28	0.12	0.18	0.35	0.39	0.37	0.06	0.04	0.12
V25	0.30	0.22	0.17	0.29	0.21	0.08	0.12	0.06	0.12	0.34	0.34	0.28	0.33	0.26	0.26	0.29	0.11	0.22	0.28	0.24	0.24	0.24	0.49	0.27	1.00	0.63	0.53	0.28	0.22	0.16	0.26	0.25	0.25	0.16	0.11	0.12
V26	0.33	0.27	0.23	0.29	0.28	0.10	0.14	0.09	0.14	0.27	0.29	0.29	0.32	0.22	0.25	0.28	0.11	0.29	0.20	0.14	0.18	0.23	0.51	0.33	0.63	1.00	0.59	0.28	0.24	0.20	0.22	0.22	0.21	0.11	0.13	0.15
V27	0.16	0.19	0.16	0.27	0.23	0.28	0.28	0.28	0.29	0.21	0.29	0.30	0.28	0.30	0.32	0.32	-0.01	0.14	0.22	0.21	0.19	0.19	0.34	0.13	0.53	0.59	1.00	0.11	0.17	0.01	0.05	0.07	0.04	0.13	0.19	0.20
V28	0.46	0.26	0.10	0.25	0.34	-0.19	-0.10	-0.16	-0.08	0.16	0.12	0.13	0.17	0.01	0.14	0.09	0.29	0.37	0.26	0.18	0.21	0.28	0.35	0.28	0.28	0.28	0.11	1.00	0.53	0.60	0.41	0.37	0.31	0.21	-0.02	0.11

The Correlation Matrix for Online Shopping Adoption (Continued)

V29	0.35	0.17	0.21	0.25	0.25	0.05	0.02	0.00	0.14	0.23	0.19	0.14	0.16	0.10	0.18	0.23	0.24	0.20	0.30	0.18	0.21	0.27	0.24	0.12	0.22	0.24	0.17	0.53	1.00	0.63	0.38	0.35	0.26	0.25	0.18	0.22
V30	0.39	0.15	0.02	0.18	0.23	-0.21	-0.14	-0.23	-0.14	0.05	0.05	0.10	0.12	-0.09	0.01	-0.01	0.29	0.31	0.20	0.17	0.19	0.22	0.30	0.18	0.16	0.20	0.01	0.60	0.63	1.00	0.36	0.32	0.26	0.17	-0.09	0.03
V31	0.34	0.16	0.16	0.20	0.21	-0.12	-0.12	-0.19	-0.05	0.18	0.20	0.17	0.25	0.17	0.24	0.21	0.35	0.32	0.25	0.08	0.12	0.21	0.26	0.35	0.26	0.22	0.05	0.41	0.38	0.36	1.00	0.88	0.68	0.18	0.06	0.11
V32	0.34	0.21	0.18	0.21	0.22	-0.05	-0.09	-0.10	-0.01	0.17	0.17	0.19	0.24	0.20	0.26	0.20	0.34	0.32	0.19	0.05	0.08	0.23	0.26	0.39	0.25	0.22	0.07	0.37	0.35	0.32	0.88	1.00	0.68	0.17	0.09	0.15
V33	0.31	0.19	0.17	0.21	0.21	-0.11	-0.10	-0.13	-0.08	0.18	0.19	0.20	0.22	0.13	0.12	0.17	0.33	0.34	0.24	0.09	0.02	0.12	0.23	0.37	0.25	0.21	0.04	0.31	0.26	0.26	0.68	0.68	1.00	0.22	0.04	0.14
V34	0.21	0.19	0.20	0.28	0.12	0.05	0.03	0.05	0.10	0.21	0.18	0.16	0.10	0.11	0.19	0.18	0.14	0.14	0.13	0.16	0.11	0.13	0.14	0.06	0.16	0.11	0.13	0.21	0.25	0.17	0.18	0.17	0.22	1.00	0.38	0.40
V35	0.13	0.23	0.26	0.25	0.18	0.43	0.30	0.42	0.40	0.28	0.20	0.18	0.21	0.38	0.35	0.32	0.04	0.14	0.17	0.16	0.14	0.11	-0.03	0.04	0.11	0.13	0.19	-0.02	0.18	-0.09	0.06	0.09	0.04	0.38	1.00	0.72
V36	0.19	0.24	0.26	0.25	0.26	0.33	0.29	0.32	0.32	0.25	0.17	0.18	0.19	0.30	0.34	0.27	0.20	0.33	0.14	0.15	0.11	0.09	0.05	0.12	0.12	0.15	0.20	0.11	0.22	0.03	0.11	0.15	0.14	0.40	0.72	1.00

Table 5.4 Anti-image Correlation

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23	V24	V25	V26	V27	V28	V29	V30	V31	V32	V33	V34	V35	V36
V1	0.93	-0.31	-0.15	-0.14	-0.15	0.08	-0.02	0.06	-0.04	-0.08	-0.05	0.06	0.00	0.06	0.09	-0.06	0.02	-0.09	-0.03	0.05	-0.02	-0.02	0.03	-0.01	-0.05	-0.04	0.02	-0.10	0.01	-0.14	0.01	-0.06	0.02	0.01	-0.04	0.02
V2	-0.31	0.89	-0.28	-0.12	-0.14	0.04	0.04	-0.09	0.09	-0.01	0.02	-0.10	0.10	-0.04	-0.04	0.04	0.08	-0.03	-0.08	-0.11	0.10	0.07	-0.12	-0.10	0.02	0.01	0.00	-0.03	0.07	0.01	0.06	-0.06	0.04	0.01	-0.07	0.00
V3	-0.15	-0.28	0.90	-0.20	0.06	-0.11	0.01	0.01	-0.05	0.00	0.01	-0.03	-0.08	-0.01	-0.02	-0.09	-0.13	0.14	0.02	0.05	-0.03	0.02	0.01	0.01	0.06	-0.11	0.11	0.05	-0.11	0.12	-0.02	0.03	-0.05	-0.03	0.06	-0.06
V4	-0.14	-0.12	-0.20	0.90	-0.37	-0.09	-0.19	0.12	0.08	-0.15	0.02	-0.07	0.09	-0.05	0.01	0.00	-0.08	0.03	0.03	-0.08	-0.01	-0.02	0.06	0.11	-0.05	-0.01	-0.06	0.01	0.02	-0.03	0.02	-0.03	-0.02	-0.16	-0.06	0.11
V5	-0.15	-0.14	0.06	-0.37	0.90	-0.11	0.09	-0.05	-0.06	0.15	0.06	-0.03	-0.14	0.02	0.07	-0.06	0.00	-0.08	-0.01	0.02	-0.05	0.02	-0.07	-0.08	0.08	0.01	-0.03	-0.14	0.00	0.03	-0.03	0.05	-0.02	0.10	0.07	-0.12
V6	0.08	0.04	-0.11	-0.09	-0.11	0.91	-0.25	-0.37	-0.04	-0.05	0.12	-0.09	0.04	-0.03	-0.08	-0.03	0.07	0.02	-0.03	-0.02	0.07	0.02	-0.08	0.01	0.00	0.06	-0.03	0.16	-0.09	0.02	-0.02	-0.03	0.07	0.07	-0.11	0.00
V7	-0.02	0.04	0.01	-0.19	0.09	-0.25	0.88	-0.37	-0.29	0.02	-0.07	0.06	-0.06	0.01	-0.03	0.06	0.09	-0.12	-0.04	0.01	0.00	-0.01	0.05	-0.12	-0.01	-0.02	0.01	0.01	0.09	-0.06	-0.09	0.14	0.03	0.03	0.19	-0.11
V8	0.06	-0.09	0.01	0.12	-0.05	-0.37	-0.37	0.86	-0.32	-0.06	-0.07	0.10	0.01	-0.02	0.03	-0.02	-0.01	-0.08	0.11	0.00	-0.11	0.03	0.03	0.04	0.06	0.03	-0.10	-0.04	0.03	0.03	0.23	-0.13	-0.10	0.01	-0.14	0.08
V9	-0.04	0.09	-0.05	0.08	-0.06	-0.04	-0.29	-0.32	0.92	-0.16	-0.02	-0.03	0.06	-0.12	0.04	-0.05	0.00	0.09	-0.07	-0.02	0.06	-0.06	-0.05	0.10	0.03	-0.02	-0.01	0.02	-0.12	0.05	-0.03	-0.05	0.10	-0.01	-0.04	-0.02
V10	-0.08	-0.01	0.00	-0.15	0.15	-0.05	0.02	-0.06	-0.16	0.94	-0.18	-0.08	-0.13	0.01	-0.10	-0.10	0.00	-0.02	-0.04	0.03	-0.04	0.03	-0.01	-0.08	-0.13	-0.02	0.19	-0.05	-0.07	0.08	-0.02	0.07	-0.04	-0.04	0.04	-0.01
V11	-0.05	0.02	0.01	0.02	0.06	0.12	-0.07	-0.07	-0.02	-0.18	0.89	-0.43	-0.06	0.08	-0.10	-0.05	0.05	0.01	-0.08	-0.04	0.03	0.08	-0.09	-0.04	-0.06	0.02	-0.01	0.05	-0.09	0.08	-0.11	0.08	0.00	-0.05	-0.01	0.03
V12	0.06	-0.10	-0.03	-0.07	-0.03	-0.09	0.06	0.10	-0.03	-0.08	-0.43	0.89	-0.24	-0.01	0.06	-0.05	-0.02	-0.07	0.01	0.02	-0.03	-0.03	-0.02	0.12	0.07	-0.02	-0.09	0.02	0.09	-0.08	0.12	-0.10	-0.05	0.00	0.03	-0.01
V13	0.00	0.10	-0.08	0.09	-0.14	0.04	-0.06	0.01	0.06	-0.13	-0.06	-0.24	0.91	-0.37	-0.13	-0.07	-0.01	-0.01	0.02	0.01	0.07	-0.11	-0.05	-0.05	-0.05	-0.01	0.01	0.00	0.10	-0.14	-0.05	0.06	-0.02	0.05	-0.04	0.07
V14	0.06	-0.04	-0.01	-0.05	0.02	-0.03	0.01	-0.02	-0.12	0.01	0.08	-0.01	-0.37	0.92	-0.23	-0.19	0.07	0.01	-0.03	0.04	-0.10	0.11	0.02	-0.04	-0.05	0.05	-0.02	0.02	0.01	0.06	0.01	-0.05	-0.04	0.05	-0.09	-0.01
V15	0.09	-0.04	-0.02	0.01	0.07	-0.08	-0.03	0.03	0.04	-0.10	-0.10	0.06	-0.13	-0.23	0.93	-0.23	-0.03	-0.04	0.02	-0.06	0.05	-0.04	0.03	-0.04	0.05	0.02	-0.11	-0.11	0.03	0.01	-0.04	-0.09	0.17	-0.03	-0.01	-0.08
V16	-0.06	0.04	-0.09	0.00	-0.06	-0.03	0.06	-0.02	-0.05	-0.10	-0.05	-0.05	-0.07	-0.19	-0.23	0.95	-0.05	0.04	0.03	-0.02	0.01	-0.04	0.06	0.08	-0.02	-0.05	-0.04	0.04	-0.10	0.08	-0.05	0.05	-0.05	-0.02	0.00	0.02
V17	0.02	0.08	-0.13	-0.08	0.00	0.07	0.09	-0.01	0.00	0.00	0.05	-0.02	-0.01	0.07	-0.03	-0.05	0.77	-0.61	-0.06	-0.05	0.08	0.03	-0.06	0.11	-0.01	0.08	0.06	0.06	-0.09	0.02	-0.04	-0.05	0.02	-0.02	0.04	-0.04
V18	-0.09	-0.03	0.14	0.03	-0.08	0.02	-0.12	-0.08	0.09	-0.02	0.01	-0.07	-0.01	0.01	-0.04	0.04	-0.61	0.82	0.05	-0.02	-0.09	-0.03	0.02	-0.24	0.04	-0.10	0.00	-0.09	0.12	-0.09	-0.01	0.04	-0.09	0.07	0.03	-0.19
V19	-0.03	-0.08	0.02	0.03	-0.01	-0.03	-0.04	0.11	-0.07	-0.04	-0.08	0.01	0.02	-0.03	0.02	0.03	-0.06	0.05	0.90	-0.32	-0.14	-0.12	-0.02	-0.01	-0.01	0.04	-0.06	-0.03	-0.10	0.04	-0.10	0.12	-0.15	0.08	-0.08	0.05
V20	0.05	-0.11	0.05	-0.08	0.02	-0.02	0.01	0.00	-0.02	0.03	-0.04	0.02	0.01	0.04	-0.06	-0.02	-0.05	-0.02	-0.32	0.82	-0.52	-0.02	0.07	0.09	-0.06	0.05	-0.05	0.00	0.08	-0.09	0.07	0.02	-0.09	-0.05	0.02	-0.02
V21	-0.02	0.10	-0.03	-0.01	-0.05	0.07	0.00	-0.11	0.06	-0.04	0.03	-0.03	0.07	-0.10	0.05	0.01	0.08	-0.09	-0.14	-0.52	0.81	-0.24	-0.11	0.01	-0.03	0.01	0.05	0.01	-0.02	-0.01	-0.10	0.03	0.19	0.01	-0.02	0.03
V22	-0.02	0.07	0.02	-0.02	0.02	0.02	-0.01	0.03	-0.06	0.03	0.08	-0.03	-0.11	0.11	-0.04	-0.04	0.03	-0.03	-0.12	-0.02	-0.24	0.89	-0.15	-0.18	0.03	0.02	-0.02	-0.05	-0.08	0.04	0.08	-0.11	0.07	-0.04	-0.05	0.05
V23	0.03	-0.12	0.01	0.06	-0.07	-0.08	0.05	0.03	-0.05	-0.01	-0.09	-0.02	-0.05	0.02	0.03	0.06	-0.06	0.02	-0.02	0.07	-0.11	-0.15	0.92	-0.01	-0.19	-0.22	-0.02	-0.05	0.06	-0.10	0.01	-0.03	-0.01	-0.08	0.14	0.00
V24	-0.01	-0.10	0.01	0.11	-0.08	0.01	-0.12	0.04	0.10	-0.08	-0.04	0.12	-0.05	-0.04	-0.04	0.08	0.11	-0.24	-0.01	0.09	0.01	-0.18	-0.01	0.86	-0.03	-0.14	0.04	-0.02	0.04	0.02	0.05	-0.13	-0.12	0.01	0.00	0.02
V25	-0.05	0.02	0.06	-0.05	0.08	0.00	-0.01	0.06	0.03	-0.13	-0.06	0.07	-0.05	-0.05	0.05	-0.02	-0.01	0.04	-0.01	-0.06	-0.03	0.03	-0.19	-0.03	0.91	-0.31	-0.25	-0.08	0.00	0.06	0.01	-0.03	-0.06	-0.02	-0.02	0.02
V26	-0.04	0.01	-0.11	-0.01	0.01	0.06	-0.02	0.03	-0.02	-0.02	0.02	-0.02	-0.01	0.05	0.02	-0.05	0.08	-0.10	0.04	0.05	0.01	0.02	-0.22	-0.14	-0.31	0.88	-0.40	-0.01	0.00	-0.06	-0.01	0.03	-0.02	0.09	-0.10	0.03
V27	0.02	0.00	0.11	-0.06	-0.03	-0.03	0.01	-0.10	-0.01	0.19	-0.01	-0.09	0.01	-0.02	-0.11	-0.04	0.06	0.00	-0.06	-0.05	0.05	-0.02	-0.02	0.04	-0.25	-0.40	0.86	0.03	-0.11	0.11	0.01	0.01	0.06	-0.06	0.09	-0.07
V28	-0.10	-0.03	0.05	0.01	-0.14	0.16	0.01	-0.04	0.02	-0.05	0.05	0.02	0.00	0.02	-0.11	0.04	0.06	-0.09	-0.03	0.00	0.01	-0.05	-0.05	-0.02	-0.08	-0.01	0.03	0.92	-0.22	-0.22	-0.05	-0.01	0.04	-0.08	0.09	-0.03

Anti-image Correlation (Continued)

V29	0.01	0.07	-0.11	0.02	0.00	-0.09	0.09	0.03	-0.12	-0.07	-0.09	0.09	0.10	0.01	0.03	-0.10	-0.09	0.12	-0.10	0.08	-0.02	-0.08	0.06	0.04	0.00	0.00	-0.11	-0.22	0.82	-0.52	-0.04	-0.01	-0.02	0.00	-0.08	-0.05
V30	-0.14	0.01	0.12	-0.03	0.03	0.02	-0.06	0.03	0.05	0.08	0.08	-0.08	-0.14	0.06	0.01	0.08	0.02	-0.09	0.04	-0.09	-0.01	0.04	-0.10	0.02	0.06	-0.06	0.11	-0.22	-0.52	0.81	-0.02	-0.01	0.03	-0.06	0.09	0.01
V31	0.01	0.06	-0.02	0.02	-0.03	-0.02	-0.09	0.23	-0.03	-0.02	-0.11	0.12	-0.05	0.01	-0.04	-0.05	-0.04	-0.01	-0.10	0.07	-0.10	0.08	0.01	0.05	0.01	-0.01	0.01	-0.05	-0.04	-0.02	0.80	-0.76	-0.20	-0.01	-0.06	0.08
V32	-0.06	-0.06	0.03	-0.03	0.05	-0.03	0.14	-0.13	-0.05	0.07	0.08	-0.10	0.06	-0.05	-0.09	0.05	-0.05	0.04	0.12	0.02	0.03	-0.11	-0.03	-0.13	-0.03	0.03	0.01	-0.01	-0.01	-0.01	-0.76	0.79	-0.21	0.04	0.03	-0.05
V33	0.02	0.04	-0.05	-0.02	-0.02	0.07	0.03	-0.10	0.10	-0.04	0.00	-0.05	-0.02	-0.04	0.17	-0.05	0.02	-0.09	-0.15	-0.09	0.19	0.07	-0.01	-0.12	-0.06	-0.02	0.06	0.04	-0.02	0.03	-0.20	-0.21	0.89	-0.12	0.08	-0.07
V34	0.01	0.01	-0.03	-0.16	0.10	0.07	0.03	0.01	-0.01	-0.04	-0.05	0.00	0.05	0.05	-0.03	-0.02	-0.02	0.07	0.08	-0.05	0.01	-0.04	-0.08	0.01	-0.02	0.09	-0.06	-0.08	0.00	-0.06	-0.01	0.04	-0.12	0.86	-0.19	-0.17
V35	-0.04	-0.07	0.06	-0.06	0.07	-0.11	0.19	-0.14	-0.04	0.04	-0.01	0.03	-0.04	-0.09	-0.01	0.00	0.04	0.03	-0.08	0.02	-0.02	-0.05	0.14	0.00	-0.02	-0.10	0.09	0.09	-0.08	0.09	-0.06	0.03	0.08	-0.19	0.80	-0.60
V36	0.02	0.00	-0.06	0.11	-0.12	0.00	-0.11	0.08	-0.02	-0.01	0.03	-0.01	0.07	-0.01	-0.08	0.02	-0.04	-0.19	0.05	-0.02	0.03	0.05	0.00	0.02	0.02	0.03	-0.07	-0.03	-0.05	0.01	0.08	-0.05	-0.07	-0.17	-0.60	0.81

Table 5.5 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.877
Bartlett's Test of Sphericity	Approx. Chi-Square	9624.777
	df	630
	Sig.	.000

Table 5.6 Factor Extraction

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.330	25.917	25.917	9.330	25.917	25.917
2	4.790	13.306	39.223	4.790	13.306	39.223
3	2.134	5.927	45.150	2.134	5.927	45.150
4	1.985	5.515	50.665	1.985	5.515	50.665
5	1.664	4.623	55.288	1.664	4.623	55.288
6	1.458	4.049	59.337	1.458	4.049	59.337
7	1.365	3.791	63.128	1.365	3.791	63.128
8	1.255	3.485	66.613	1.255	3.485	66.613
9	1.125	3.126	69.739	1.125	3.126	69.739
10	.922	2.560	72.299			
11	.850	2.360	74.659			
12	.689	1.914	76.572			
13	.675	1.874	78.446			
14	.629	1.748	80.194			
15	.561	1.559	81.754			
16	.527	1.463	83.217			
17	.506	1.405	84.621			
18	.480	1.332	85.953			
19	.433	1.204	87.157			
20	.420	1.167	88.324			
21	.389	1.082	89.406			
22	.379	1.053	90.459			
23	.349	.970	91.428			
24	.343	.954	92.382			
25	.316	.878	93.260			
26	.304	.843	94.104			
27	.298	.828	94.932			
28	.270	.749	95.682			
29	.268	.744	96.425			
30	.257	.715	97.140			
31	.220	.611	97.751			
32	.213	.592	98.343			
33	.202	.560	98.903			
34	.160	.445	99.347			
35	.143	.398	99.746			
36	.092	.254	100.000			

Table 5.7 Rotated Component Matrix with VARIMAX Rotation

	Component								
	1	2	3	4	5	6	7	8	9
V12	.740								
V13	.729								
V11	.728								
V16	.642								
V10	.621								
V14	.598								
V15	.596								
V8		.874							
V7		.847							
V6		.833							
V9		.809							
V2			.796						
V4			.722						
V1			.698						
V3			.665						
V5			.645						
V32				.875					
V31				.855					
V33				.766					
V24									
V26					.820				
V25					.751				
V27					.740				
V23					.589				
V21						.840			
V20						.838			
V19						.733			
V22						.564			
V30							.824		
V29							.816		
V28							.686		
V35								.785	
V36								.783	
V34								.697	
V18									.845
V17									.739

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

Table 5.8 Pattern Matrix with OBLIMIN Rotation

	Component								
	1	2	3	4	5	6	7	8	9
V12	.780								
V11	.747								
V13	.738								
V16	.586								
V10	.570								
V15	.539								
V14	.519								
V8		-.864							
V7		-.853							
V6		-.810							
V9		-.796							
V20			.884						
V21			.876						
V19			.755						
V22			.555						
V36				.802					
V35				.796					
V34				.714					
V2					-.832				
V4					-.716				
V1					-.689				
V3					-.688				
V5					-.632				
V26						.843			
V27						.779			
V25						.757			
V23						.556			
V18							.843		
V17							.744		
V29								.855	
V30								.848	
V28								.672	
V32									.890
V31									.861
V33									.771
V24									

Extraction Method: Principal Component Analysis.
 Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 11 iterations.

Table 5.9 The Reliability Test For the measures of Online Shopping Adoption Choice in Australia

Constructs	Items	Cronbach's Alpha
Service Quality	12. The products I ordered are delivered to me within the time promised by the Internet retailers. 13. Internet retailers promptly respond to my inquiries. 11. The quantity and quality of the products I receive from Internet retailers are exactly the same as I order. 16. Internet retailers offer good after sales service. 10. Internet retailers honour their guarantees. 14. It is easy to receive a personalized customer service from an Internet retailer. 15. Internet retailers encourage me to make suggestions.	0.837
Received Risk	8. I am confident that my personal information is protected by an Internet retailer 7. I feel secure about providing my bank card details to a payment platform. 6. I am confident that the information I provide to an Internet retailers is not used for other purposes. 9. Online shopping is just as secure as traditional retail shopping.	0.824
Website Factors	2. The website designs of Internet retailers are aesthetically attractive. 4. The links within the website allow me to move back and forth easily between pages. 1. Internet retailers' websites are easy to navigate. 3. The Internet retailers' websites provide in-depth information to answer my questions. 5. It is quick and easy for me to complete a transaction through the websites.	0.804
Country of Origin	32. I prefer to buy Australian products because of their well-known and trusted image. 31. I prefer to buy Australian products because they are of high quality. 33. I prefer to buy Australian products because they are made in Australia.	0.827
Price	26. I think the Internet offers lower prices compared to retail stores. 25. Online shopping offers better value for my money compared to traditional retail shopping.	0.749

	27. Online shopping allows me to save money as I do not need to travel anywhere. 23. Online shopping allows me to buy the same, or similar products, at cheaper prices than traditional retailing stores.	
Convenience	21. Online shopping saves me time by allowing me to multi-task with ease. 20. It only takes a little time and effort to make a purchase through the Internet. 19. It is more convenient to shop through the Internet when compared to traditional retail shopping. 22. It is easier to compare alternative products when I shop using the Internet.	0.737
Product Variety	30. I can buy products that are not available in retail shops through the Internet. 29. I always purchase the types of products I want from the Internet. 28. Online shopping offers a wide variety of products.	0.765
Subjective Norms	35. The media (e.g. television, radio, newspaper) influences my decision to purchase online. 36. Advertising and promotion influences my decision to purchase online. 34. Family/friends encourage me to make purchases through the Internet.	0.635
Brand Image	18. I feel safe when I purchase products from well-known brand official websites. 17. I like to buy products from well-known brand official websites.	0.678

Table 5.10 Pearson Correlation Matrix

		Website	Risk	SQ	BI	CV	Price	PV	COO	SN
Website	Pearson Correlation	1	.292**	.477**	.361**	.358**	.422**	.362**	.310**	.339**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000
	N	463	463	463	463	462	463	463	463	463
Risk	Pearson Correlation	.292**	1	.523**	-.008	.208**	.162**	-.113*	-.118*	.349**
	Sig. (2-tailed)	.000		.000	.860	.000	.000	.015	.011	.000
	N	463	463	463	463	462	463	463	463	463
SQ	Pearson Correlation	.477**	.523**	1	.222**	.344**	.452**	.161**	.278**	.376**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.001	.000	.000
	N	463	463	463	463	462	463	463	463	463
BI	Pearson Correlation	.361**	-.008	.222**	1	.270**	.304**	.364**	.401**	.226**
	Sig. (2-tailed)	.000	.860	.000		.000	.000	.000	.000	.000
	N	463	463	463	463	462	463	463	463	463
CV	Pearson Correlation	.358**	.208**	.344**	.270**	1	.372**	.330**	.192**	.205**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000
	N	462	462	462	462	462	462	462	462	462
Price	Pearson Correlation	.422**	.162**	.452**	.304**	.372**	1	.340**	.353**	.184**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000
	N	463	463	463	463	462	463	463	463	463

PV	Pearson Correlation	.362**	-.113*	.161**	.364**	.330**	.340**	1	.431**	.165**
	Sig. (2-tailed)	.000	.015	.001	.000	.000	.000		.000	.000
	N	463	463	463	463	462	463	463	463	463
COO	Pearson Correlation	.310**	-.118*	.278**	.401**	.192**	.353**	.431**	1	.170**
	Sig. (2-tailed)	.000	.011	.000	.000	.000	.000	.000		.000
	N	463	463	463	463	462	463	463	463	463
SN	Pearson Correlation	.339**	.349**	.376**	.226**	.205**	.184**	.165**	.170**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	
	N	463	463	463	463	462	463	463	463	463

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5.11 Logistic Regression Results (Influencing Factors and Demographic Characteristics on Online Shopping Adoption)

Number of Observations:	463			
Log likelihood function:	-78.565367			
Chi-squared Statistics:	437.23			
Degrees of Freedom:	16			
Prob [ChiSqd>value]:	0.0000			
McFadden R2:	0.7356			
	Coefficients	Std Error	Sig.	Marginal Effects
Website Factors	1.179468	.2582988	0.000***	.1232401
Perceived Risk	-1.628286	.2440687	0.000***	-.1701362
Service Quality	-1.582792	.3284925	0.000***	-.1653826
Brand Image	.9736617	.2066504	0.000***	.1017359
Convenience	-.3258246	.2209678	0.140	-.0340447
Price	.2513736	.2414132	0.298	.0262655
Product Variety	.7276988	.1923565	0.000***	.0760357
Country of Origin	.5389836	0.1835764	0.004***	.0563173
Subjective Norms	-.3123774	.1879024	0.103	-.0326397
Young Age	1.064639	.4838471	0.028**	.1257546
High-level Education	1.139559	.5293709	0.031**	.1358317
Professional	1.835792	.6461409	0.004***	.156643
Manger & Company Employee	.9886478	.6383525	0.121	.0854068
Student & Sales/ Service	1.484946	.7286798	0.042**	.1151705
Middle Income	.7267849	.7413442	0.327	.0697511
High Income	-.1336657	.8048223	0.868	-.0139135
Note: *** denote statistically significant at the 0.01 level of significance				
** statistically significant at the 0.05 level of significance				

Table 5.16: T-Test: Online Shopping Adoption Factor Relating to Gender

	Gender	N	Mean	T	Sig.
Perceived Risk	Male	237	4.47	0.191	0.035*
	Female	226	4.51		
Service Quality	Male	237	4.47	1.835	0.398
	Female	226	4.71		
Website Factors	Male	237	4.82	1.236	0.370
	Female	226	4.95		
Brand Image	Male	237	4.89	2.934	0.729
	Female	226	5.28		
Product Variety	Male	237	4.72	2.769	0.311
	Female	226	5.06		
Country of Origin	Male	237	4.24	3.713	0.187
	Female	226	4.73		
Convenience	Male	237	4.85	1.118	0.053
	Female	226	4.99		
Price	Male	237	4.75	1.212	0.122
	Female	226	4.87		
Subjective Norms	Male	237	4.34	2.731	0.028*
	Female	226	4.66		

Table 5.17 ANOVA (F-tests) Results Relating to Age

Factor	Age	No of Respondents	Mean	F	Sig
Risk	Young	295	4.22	10.801	0.000***
	Middle	122	4.58		
	Old	46	5.90		
Service Quality	Young	295	4.58	1.921	0.089*
	Middle	122	4.49		
	Old	46	4.86		
Website Factors	Young	295	4.99	2.968	0.012**
	Middle	122	4.63		
	Old	46	4.89		
Brand Image	Young	295	5.31	6.052	0.000***
	Middle	122	4.69		
	Old	46	4.66		
Product Variety	Young	295	5.14	7.136	0.000***
	Middle	122	4.56		
	Old	46	4.17		
Country of Origin	Young	295	4.65	4.568	0.000***
	Middle	122	4.25		
	Old	46	3.99		

*** significance at the 0.000 level of significance
** significance at the 0.05 level of significance
* significance at the 0.10 level of significance

Table 5.18: ANOVA (F-tests) Results Relating to Education

Factor	Qualification	No of Respondents	Mean	F	Sig.
Perceived Risk	Low	7	5.79		
	Middle	161	4.92	6.468	0.000***
	High	295	4.22		
Website Factors	Low	7	5.23		
	Middle	161	4.83	2.109	0.063*
	High	295	4.91		
Brand Image	Low	7	5.00		
	Middle	161	4.90	4.078	0.001**
	High	295	5.18		
Product Variety	Low	7	5.00		
	Middle	161	4.65	2.340	0.041**
	High	295	5.02		
Country of Origin	Low	7	4.43		
	Middle	161	4.18	3.531	0.004**
	High	295	4.64		

*** significance at the 0.000 level of significance
** significance at the 0.05 level of significance
* significance at the 0.10 level of significance

Table 5.19: ANOVA (F-tests) Results Relating to Occupation

Factor	Qualification	No of Respondents	Mean	F	Sig.
Website Factors	Professional	146	4.79	1.955	0.037**
	Manger and Company Employee	17	5.00		
	Government Officer	97	4.83		
	Student and Service/Sales	96	4.98		
	Self-employee, Unemployed, Retired or Others	107	4.95		
Perceived Risk	Professional	146	4.24	6.377	0.000***
	Manger and Company Employee	17	4.41		
	Government Officer	97	4.28		
	Student and Service/Sales	96	5.26		
	Self-employee, Unemployed, Retired or Others	107	4.32		
Service Quality	Professional	146	4.48	3.821	0.000***
	Manger and Company Employee	17	4.80		
	Government Officer	97	4.31		
	Student and Service/Sales	96	4.91		
	Self-employee, Unemployed, Retired or Others	107	4.70		
Convenience	Professional	146	4.68	4.220	0.000***
	Manger and Company Employee	17	4.81		
	Government Officer	97	5.04		
	Student and Service/Sales	96	5.09		
	Self-employee, Unemployed, Retired or Others	107	4.99		
Price	Professional	146	4.74	1.640	0.093*
	Manger and Company Employee	17	4.61		
	Government Officer	97	4.75		
	Student and Service/Sales	96	4.95		
	Self-employee, Unemployed, Retired or Others	107	4.87		
Country of Origin	Professional	146	4.42	2.092	0.024**
	Manger and Company Employee	17	4.51		
	Government Officer	97	4.26		
	Student and Service/Sales	96	4.42		
	Self-employee, Unemployed, Retired or Others	107	4.82		

*** significance at the 0.000 level of significance
** significance at the 0.05 level of significance
* significance at the 0.10 level of significance

Table 5.20: The Scheffe Output for Age-Multiple Comparisons

			Website Factors	Perceived Risk	Brand Image	Product Variety	Country of Origin	Subjective Norms
Scheff	(I)Age	(J)Age	Sig.	Sig.	Sig.	Sig.	Sig.	Sig.
	Young-Age	Middle-Age	0.005∗∗	0.083∗	0.000∗∗∗	0.000∗∗∗	0.023∗∗	0.558
		Old-Age	0.809	0.000∗∗∗	0.006∗∗	0.000∗∗∗	0.007∗∗	0.236
	Middle-Age	Young-Age	0.005∗∗	0.083∗∗	0.000∗∗∗	0.000∗∗∗	0.023∗∗	0.558
		Old-Age	0.337	0.000∗∗∗	0.991	0.147	0.507	0.084∗
	Old-Age	Young-Age	0.809	0.000∗∗∗	0.006∗∗∗	0.000∗∗∗	0.007∗∗	0.236
		Middle-Age	0.337	0.000∗∗∗	0.991	0.147	0.507	0.084∗

∗∗∗ significance at the 0.000 level of significance
∗∗ significance at the 0.05 level of significance
∗ significance at the 0.10 level of significance

Table 5.21: The Scheffe Output for Education- Multiple Comparisons

			Website Factors	Risk	Product Variety	Country of Origin
scheff	(I)Education	(J)Education	Sig.	Sig.	Sig.	Sig.
	Low-Education	Middle-Education	0.558	0.322	0.791	0.893
		High-Education	0.236	0.024**	0.999	0.915
	Middle-Education	Low-Education	0.558	0.322	0.791	0.893
		High-Education	0.084*	0.000***	0.018**	0.002**
	High-Education	Low-Education	0.236	0.024**	0.999	0.915
		Middle-Education	0.084*	0.000***	0.018**	0.002**

*** significance at the 0.000 level of significance
** significance at the 0.05 level of significance
* significance at the 0.10 level of significance

Table 5.22: The Scheffe Output for Occupation- Multiple Comparisons

			Risk	Service Quality	Country of Origin
Scheff	(I)Occupation	(J)Occupation	Sig.	Sig.	Sig.
	Professional	Manager, Company Employee	0.997	0.597	0.236
		Government Officer	0.996	1.000	0.999
		Student and Service/Sales	1.000	0.829	0.938
		Self-Employee, Labourer, Farmer, Unemployed, Retired, Other	0.000***	0.042**	1.000
	Manager, Company Employee	Professional	0.997	0.597	0.236
		Government Officer	1.000	0.973	0.941
		Student and Service/Sales	1.000	0.137	0.066*
		Self-Employee, Labourer, Farmer, Unemployed, Retired, Other	0.001**	0.718	0.349
	Government Officer	Professional	0.996	1.000	0.999
		Manager, Company Employee	1.000	0.973	0.941
		Student and Service/Sales	0.998	0.974	0.973
		Self-Employee, Labourer, Farmer, Unemployed, Retired, Other	0.323	0.701	0.999
	Student and Service/Sales	Professional	1.000	0.829	0.938
		Manager, Company Employee	1.000	0.137	0.066*
		Government Officer	0.998	0.974	0.973
		Self-Employee, Labourer, Farmer, Unemployed, Retired, Other	0.000***	0.003**	0.951
	Self-Employee, Labourer, Farmer, Unemployed, Retired, Other	Professional	0.000***	0.042	1.000
		Manager, Company Employee	0.001**	0.718	0.349
		Government Officer	0.323	0.701	0.999
		Student and Service/Sales	0.000***	0.003**	0.951

*** significance at the 0.000 level of significance
** significance at the 0.05 level of significance
* significance at the 0.10 level of significance

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Appendices:

Appendix 1: Questionnaire Information Sheet

Questionnaire

Name of Project:

<u>The factors that influence Australian consumers' online shopping adoption: an empirical analysis</u>

You are invited to participate in a project called <u>the factors that influence Australian consumers' online shopping adoption: an empirical analysis by completing the following questionnaire.</u>

The aim of the project is

- To identify the factors which influence consumer adoption of online shopping in Australia.
- To determine the order of importance of the factors that affect consumers' adoption of online shopping in Australia.
- To examine whether different demographic characteristics have an impact on the adoption of online shopping in Australia.

The questionnaire is anonymous, and you will not be identified as a respondent without your consent. You may at any time withdraw your participation, including withdrawal of any information you have provided. If you complete the questionnaire, however, it will be understood that you have consented to participate in the project and consent to publication of the results of the project with the understanding that anonymity will be preserved.

A SURVEY OF CONSUMERS' ADOPTION OF ONLINE SHOPPING IN AUSTRALIA

Only those 18 years or older are asked to complete the questionnaire. If you complete the questionnaire and returned it to the researcher, it is understood that you are 18 years of age or older and have consented to participate in this survey.

> There are four sections in this survey. Please complete Section 1, Section 4, and either Section 2 or 3 as per the instructions. Only summary measures and conclusions from this survey will be reported. Your participation is voluntary and all of your answers will be kept confidential.

SECTION ONE

Please TICK the most appropriate box.

Have you shopped online before?

☐ If YES, Please go to SECTION TWO

☐ If NO, Please go to SECTION THREE

> This section is about your thoughts and current practices regarding Online Shopping. Please TICK how you agree or disagree with each of the following statements on a scale of 1 to 7. 1-you strongly disagree, 7-you strongly agree.

SECTION TWO

	Strongly Disagree					Strongly Agree	
1. Internet retailers' websites are easy to navigate.	1	2	3	4	5	6	7
2. The website designs of Internet retailers are aesthetically attractive.	1	2	3	4	5	6	7
3. The Internet retailers' websites provide in-depth information to answer my questions.	1	2	3	4	5	6	7
4. The links within the website allow me to move back and forth easily between pages.	1	2	3	4	5	6	7
5. It is quick and easy for me to complete a transaction through the websites.	1	2	3	4	5	6	7
6. I am confident that the information I provide to an Internet retailers is not used for other purposes.	1	2	3	4	5	6	7

7. I feel secure about providing my bank card details to a payment platform.	1	2	3	4	5	6	7
	Strongly Disagree				Strongly Agree		
8. I am confident that my personal information is protected by an Internet retailer	1	2	3	4	5	6	7
9. Online shopping is just as secure as traditional retail shopping.	1	2	3	4	5	6	7
10. Internet retailers honour their guarantees.	1	2	3	4	5	6	7
11. The quantity and quality of the products I receive from Internet retailers are exactly the same as I order.	1	2	3	4	5	6	7
12. The products I ordered are delivered to me within the time promised by the Internet retailers.	1	2	3	4	5	6	7
13. Internet retailers promptly respond to my inquiries.	1	2	3	4	5	6	7
14. It is easy to receive a personalized customer service from an Internet retailer.	1	2	3	4	5	6	7
15. Internet retailers encourage me to make suggestions.	1	2	3	4	5	6	7
16. Internet retailers offer good after sales service.	1	2	3	4	5	6	7
17. I like to buy products from well-known brand official websites.	1	2	3	4	5	6	7
18. I feel safe when I purchase products from well-known brand official websites.	1	2	3	4	5	6	7
19. It is more convenient to shop through the Internet when compared to traditional retail shopping.	1	2	3	4	5	6	7
20. It only takes a little time and effort to make a purchase through the Internet.	1	2	3	4	5	6	7
21. Online shopping saves me time by allowing me to multi-task with ease.	1	2	3	4	5	6	7
22. It is easier to compare alternative products when I shop using the Internet.	1	2	3	4	5	6	7
23. Online shopping allows me to buy the same, or similar products, at cheaper prices than traditional retailing stores.	1	2	3	4	5	6	7
24. I am aware the impact of Australian exchange rate when I purchase online from overseas businesses.	1	2	3	4	5	6	7

	Strongly Disagree						Strongly Agree
25. Online shopping offers better value for my money compared to traditional retail shopping.	1	2	3	4	5	6	7
26. I think the Internet offers lower prices compared to retail stores.	1	2	3	4	5	6	7
27. Online shopping allows me to save money as I do not need to travel anywhere.	1	2	3	4	5	6	7
28. Online shopping offers a wide variety of products.	1	2	3	4	5	6	7
29. I always purchase the types of products I want from the Internet.	1	2	3	4	5	6	7
30. I can buy products that are not available in retail shops through the Internet.	1	2	3	4	5	6	7
31. I prefer to buy Australian products because they are of high quality.	1	2	3	4	5	6	7
32. I prefer to buy Australian products because of their well-known and trusted image.	1	2	3	4	5	6	7
33. I prefer to buy Australian products because they are made in Australia.	1	2	3	4	5	6	7
34. Family/friends encourage me to make purchases through the Internet.	1	2	3	4	5	6	7
35. The media (e.g. television, radio, newspaper) influences my decision to purchase online.	1	2	3	4	5	6	7
36. Advertising and promotion influences my decision to purchase online.	1	2	3	4	5	6	7

This section is about your thoughts regarding Online Shopping adoption. Please TICK how you agree or disagree with each of the following statements on a scale of 1 to 7. 1- you strongly disagree, 7-you strongly agree.

SECTION THREE

	Strongly Disagree					Strongly Agree	
1. Internet retailers' websites are not easy to navigate.	1	2	3	4	5	6	7
2. The website designs of the Internet retailers are not attractive.	1	2	3	4	5	6	7
3. The Internet retailers' websites do not provide in-depth information to answer my questions.	1	2	3	4	5	6	7
4. The links within the website do not allow me to move back and forth easily between pages.	1	2	3	4	5	6	7
5. It is slow and hard for me to complete a transaction through the Internet websites.	1	2	3	4	5	6	7
6. I am not confident that the information I provide to an Internet retailers is not used for other purposes.	1	2	3	4	5	6	7
7. I do not feel secure about providing my bank card details to a payment platform.	1	2	3	4	5	6	7
8. I am not confident that my personal information is protected by an Internet retailer	1	2	3	4	5	6	7
9. Online shopping is not as secure as traditional retail shopping.	1	2	3	4	5	6	7
10. Internet retailers do not honour their guarantees.	1	2	3	4	5	6	7
11. The quantity and quality of the products I receive from Internet retailers are not the same as I order.	1	2	3	4	5	6	7
12. The products I ordered are not delivered to me within the time promised by the Internet retailers.	1	2	3	4	5	6	7
13. Internet retailers do not promptly respond to my inquiries.	1	2	3	4	5	6	7
14. It is hard to receive a personalized customer service from an Internet retailer.	1	2	3	4	5	6	7

15. Internet retailers do not encourage me to make suggestions.	1	2	3	4	5	6	7
	Strongly Disagree				Strongly Agree		
16. Internet retailers do not offer good after sales service.	1	2	3	4	5	6	7
17. I do not like to buy products from well-known brand official websites.	1	2	3	4	5	6	7
18. I do not feel safe when I purchase products from well-known brand official websites.	1	2	3	4	5	6	7
19. It is not convenient to shop through the Internet when compared to traditional retail shopping.	1	2	3	4	5	6	7
20. It takes a more time and effort to make a purchase through the Internet.	1	2	3	4	5	6	7
21. Online shopping does not save me time by allowing me to multi-task.	1	2	3	4	5	6	7
22. It is difficult to compare alternative products when I shop using the Internet.	1	2	3	4	5	6	7
23. Online shopping does not allow me to buy the same, or similar products, at cheaper prices than traditional retailing stores.	1	2	3	4	5	6	7
24. I am not aware the impact of Australian exchange rate when I purchase online from overseas businesses.	1	2	3	4	5	6	7
25. Online shopping does not offer better value for my money compared to traditional retail shopping.	1	2	3	4	5	6	7
26. I do not think the Internet offers lower prices compared to retail stores.	1	2	3	4	5	6	7
27. Online shopping is expensive, as the delivery fees are high.	1	2	3	4	5	6	7
28. Online shopping does not offer a wide variety of products.	1	2	3	4	5	6	7
29. I cannot purchase the types of products I want from the Internet.	1	2	3	4	5	6	7
30. I do not think I can buy the products that are not available in retail shops through the Internet.	1	2	3	4	5	6	7
31. I do not think Australian products are of a high quality.	1	2	3	4	5	6	7

32. I do not think Australian products have a well-known and trusted image.	1	2	3	4	5	6	7
	Strongly Disagree Strongly Agree						
33. I will not buy products just because they are made in Australia.	1	2	3	4	5	6	7
34. Family/friends do not encourage me to make purchases through the Internet.	1	2	3	4	5	6	7
35. The media (e.g. television, radio, newspaper) does not influence my decision to purchase online.	1	2	3	4	5	6	7
36. Advertising and promotion does not influence my decision to purchase online.	1	2	3	4	5	6	7

Pleas TICK the most appropriate box for following

Do you think you may shop online in the future?

☐ YES   ☐ NO

SECTION FOUR

The questions below relate to personal data.

1. What is your gender?

☐ Male ☐ Female

2. What is your age group?

☐ 18-25 years old ☐ 26-35 years old ☐ 36-45 years old
☐ 46-55 years old ☐ 56-65 years old ☐ Over 66 years old

3. Which is the highest level of education you have completed?

☐ Primary Education or Lower ☐ Middle School ☐ High School
☐ Diploma/ Certification ☐ Bachelor Degree ☐ Postgraduate Degree

4. What is your occupation?

☐ Professional ☐ Manager ☐ Government Officer ☐ Company Employee
☐ Self-employee ☐ Labourer ☐ Farmer ☐ Student ☐ Sales/ Service
☐ Unemployed ☐ Retired ☐ Other _____

5. What is your personal monthly income before tax?

☐ 500 AUS$ or Under ☐ 500-1000 AUS$ ☐ 1001-1500 AUS$
☐ 1501-2000 AUS$ ☐ 2001-3000 AUS$ ☐ 3001-5000 AUS$
☐ Above 5001 AUS$

Your participation in this survey is greatly appreciated. Thank you for your time!