

CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

This chapter introduces the main topic of the research, which is investigating the factors that influence the continued and frequent use of internet banking by Australian consumers. The chapter introduces the research problem followed by a discussion of the research context. A brief description of the Australian retail banking industry is then presented with regard to the research context. Research objectives are then explained and the need for the research is discussed. Finally an overview of the thesis is presented.

1.2 STATEMENT OF THE RESEARCH PROBLEM

The advent of the internet, rapid technological evolutions, globalisation, financial deregulations, liberalisation and consolidation of the financial markets has encouraged many businesses to change their traditional modes of operations (Mia *et al.* 2007). Businesses are also utilising technological advancements in order to make their services more accessible to consumers (Reid & Levy 2008; Winch & Joyce 2006). One such business entity is the retail banking sector that has been using a wider array of information systems to satisfy its customers (Wresch & Fraser 2006). According to Durkin *et al.* (2008), the retail banking industry realised that relying exclusively on the traditional price factors for competition was a questionable way to increase revenue and market share in the industry. This was due to the fact that the two largest expenses incurred by banks are associated with the maintenance and overhead costs of branch networks and their associated human resources (Durkin 2004). Banks started to realise that relying on non-price factors provided alternative strategies for differentiation, gaining competitive advantage and cost cutting (Daniel 1999). As a result, the financial services industry has become much more competitive over the last few years (Thornton & White 2001). In an intensifying competitive environment, superior distribution strategies relating to how to communicate with, and deliver products to, the customer effectively provides a comprehensive advantage to the banking institutions (Kerem *et al.* 2003). Moreover, customers are also demanding greater convenience and accessibility, as reflected in longer branch opening hours and an increase in the choice of service delivery mechanisms. On a global scale, many banks have started to set in place more cost-effective alternative service delivery systems (Shih & Fang 2004). The trend has seen the proliferation of multiple service delivery channels through which consumers can interact

with banks. Therefore, modern banks provide their consumers with increased channel choice that reaches out to consumers through many different routes. Alternative service delivery systems such as Automated Teller Machines (ATMs), telephone, internet and wireless channels are now available to the consumers to perform their banking transactions in addition to the traditional branch banking (Reid & Levy 2008; Akinci *et al.* 2004). It has been widely accepted that internet banking is possibly the most cost-effective channel for providing electronic banking services and products efficiently to prospective customers (Giglio 2002; Robinson 2000; Sathye 1999). However, there are marketing and management issues that arise from relying on such new and different distribution channels.

Deployment of retail or wholesale banking services involving individual and corporate clients, bank transfers, payments and settlements, documentary collections and credits, corporate and household lending and card businesses over the internet is often referred in the existing literature as internet banking (UNCTAD 2002). For the purpose of the present research, internet banking is identified as the act of conducting financial mediation on the internet (VanHoose 2003). Also, it has been estimated that in the United States the operational cost of a traditional bank transaction is approximately \$1.07 while the equivalent cost through telephone banking is \$0.54, and the cost of an internet banking transaction is only \$0.001 (Robinson 2000; Seshunoff 2000; Mols 2000), is presented in Figure 1.1. Moreover, it is also evident from previous research that, apart from being the most profitable service delivery channel of banking institutions, internet banking also exerts the highest level of customer satisfaction and retention compared to the traditional bank branches (Polatoglu & Ekin 2001; Jeevan 2000).

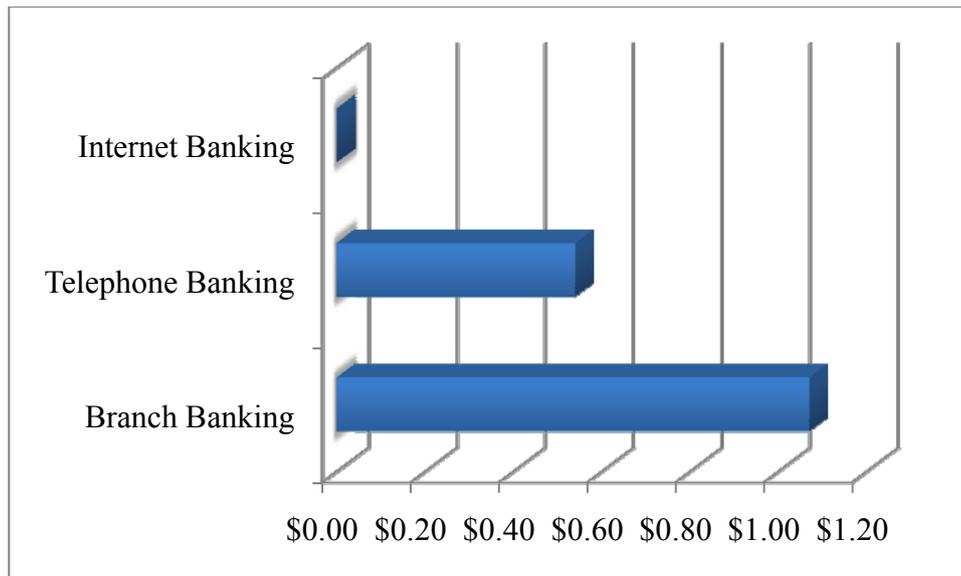


Figure 1.1: Cost Per Transaction of Various Banking Channels

The emergence of internet banking has meant that banking activities are no longer subject to time and geographical constraints (Karjaluoto *et al.* 2002) as internet banking offers 24 hour accessibility to consumers (Ismail & Panni 2009). Gurau (2002) emphasised that internet banking services are attractive to target markets for both individual consumers and corporate clients. Lee & Lee (2001) noted that internet banking provides easier access to bank accounts and lower service charges. Furthermore, internet banking is associated with high speed of service and lower transaction costs (Chang 2002). Despite these advantages, internet banking has not yet become the way in which the majority of banking transactions are undertaken in many countries. The gap between the obvious advantages of internet banking and the fact that it is not the dominant method of undertaking transactions indicates that marketers, bankers and financial institutions need to make an effort to understand the factors that influence a consumer's intention to adopt, and their actual adoption and usage patterns of internet banking (Kolodinsky *et al.* 2004).

There are a number of internet banking studies that have investigated factors that influence a consumer's intention to adopt or their acceptance of internet banking (Gerrard & Cunningham 2003; Lee *et al.* 2003; Jun & Cai 2001; Tan & Teo 2000). A persistent argument is that prior studies on internet banking adoption by consumers, and the factors responsible for their adoption of the internet, have produced inconclusive and sometimes conflicting results. This has culminated in a difficulty in articulating the precise findings of internet banking research (Ndubisi & Sinti 2006). Thus, the findings from research on

internet banking from the consumer's perspective remains unclear and in many ways impractical as it is not applied to the business context.

The growing use of technologies in services has revolutionised the interactions between service providers and customers and increased standardisation of many services (Liljander *et al.* 2006). The introduction of new service delivery channels increases the productivity and efficiency of the service providers apart from offering access to customers, thereby better meeting customer demand and increasing satisfaction (Liljander *et al.* 2006; Walker *et al.* 2002; Bitner *et al.* 2002). Internet banking facilitating electronic transactions is a key facilitator of communication in business activities and in consumers' day-to-day activities (McCole & Ramsay 2009). The decision to perform internet banking is at the consumer's discretion, indicating the importance of the consumer in electronic interactions. It is critical for business success to understand how consumers make decisions to use internet banking and at the same time, how marketers try to understand consumers' values, beliefs and preferences (Lindgreen & Wynstra 2005). Existing customers represent a valuable asset to the service provider. From the bank's perspective, maintaining and retaining their existing customer base is always more profitable than trying to acquire new customers (Srinivasan *et al.* 2002). Therefore, banks continuously scan and attempt to persuade customers not to switch to competitors in order to maximise their sales and profits (Hammond & Ehrenberg 1995). Customer participation has always been an indispensable part of any service delivery process (Karmarkar & Pitbladdo 1997). The management of the service delivery channel performance presents an unusual problem in that the performance of the service system is affected by the actions of customers who may feel uncertain about their capabilities and goals.

In the past decade, the objective of most research in internet banking research has been to analyse the acceptance and adoption of internet banking service delivery channels and to understand the factors which lead to the adoption process (Chen *et al.* 2005). Since its introduction, internet banking, due to its speed and convenience, has been widely accepted by consumers as a service innovation (Klopping & McKinney 2004). In recent years, internet banking transactions increased to a greater extent, indicating the voluminous nature of transactions carried out by the internet banking consumers (Kasheir *et al.* 2009). This phenomenal uptake and use of internet banking, together with the internet banking experience, modifies the behaviour of individuals towards the channel (Gefen *et al.* 2003). Change is evident in consumers' initial perceptions and heightens the

need to understand not only consumers' pre-adoption behaviour, but also post-adoption behaviour (Yu *et al.* 2005).

It is only recently that researchers have started to understand the importance of consumers' continued, as well as frequent use of internet banking and its impact on the financial performance of the banking sector (Kasheir *et al.* 2009; Yousafzai *et al.* 2005). Continued and frequent use of internet banking are often neglected in the marketing literature, as most studies focus on either consumer adoption or acceptance of internet banking (Eriksson & Nilsson 2007). However, in practice, in comparison to new buyer acquisition, continued and frequent use is related to a cost-effective marketing strategy aimed at retaining customers. The goal of any business entity in the long term is to increase its productivity and maximisation of the profits. Retention strategies foster customer relationship management and reduce customer switching behaviour (Kasheir *et al.* 2009). In order to achieve this, it is vital to concentrate on the consumer's continued and frequent use of a particular product or service rather than solely on their acceptance of the service (Kim & Malhotra 2005). With these considerations in mind, and the existing gaps in the knowledge surrounding consumers' continued and frequent use of internet banking, the present research focuses on exploring the antecedents to consumers' continued and frequent use of internet banking.

Methodologically speaking, it has become increasingly important for researchers to focus on integrating relevant theories and developing hybrid models for the development of theory in the academic context (Kasheir *et al.* 2009; Yousafzai *et al.* 2005). The present study uses theoretical models of technology acceptance and diffusion of innovations theory and integrates them in order to identify the potential factors that might have an impact on consumers' usage of internet banking either on a continual and/or frequent basis. The value of integrating models lies in the ability of the findings from such research to be more robust and less open to criticisms based on reliability and validity of the findings.

A consumer's decision to maintain their use of a particular service delivery channel for their banking transactions, and the frequency with which they use it, is complex. This is because the consumer needs to take into consideration a wider range of factors related to the product or service itself, such as the retailer, the channel, individual preference, and the purchase situation (Black *et al.* 2002; Gehrt & Yan 2004).

Technology is considered as pivotal to the future development of banking which will, in

turn, influence the marketing and business strategies of banks. Modern businesses rely heavily on internet-based applications that have now become integral to product and service marketing and distribution (Tih & Ennis 2007). The role of technology at each stage of acquiring, processing and delivering information is crucial in the banking industry sector, due to the fact that banking services are highly information sensitive (Acharya *et al.* 2008). The advent of the internet has provided banking firms with the added advantage of enlarging their customer base by allowing them to market their products and services online (Geyskens *et al.* 2002). Thus, many firms that once concentrated their efforts on traditional channels rapidly included online channels in their approach to marketing their products and services effectively (Frambach *et al.* 2007). Wolfinbarger & Gilly (2001) discuss the differences exhibited by consumers in their experiences and consumption patterns with regard to online and offline service delivery channels. Lee & Allaway (2002) also contend that infusion of technologies in the services sector is all pervasive. Therefore, due to the fact that internet banking is a technology-enabled service delivery channel that combines technology with a particular type of service delivery, the combination of the two may be a potential factor in influencing patterns of consumers' continued and their frequent use of internet banking. Existing research points to five major influencing aspects of internet banking technology in terms of its adoption by consumers. Consumers' perceptions relating to the relative advantage, compatibility, complexity, trialability and result demonstrability aspects of internet banking, and their comparison to other service delivery channels offered by the bank, may be critical in motivating consumers to perform internet banking on a continued and frequent basis (Kasheir *et al.* 2009; Hernandez & Mazzon 2007; Ndubisi & Sinti 2006; Chan & Lu 2004; Black *et al.* 2002; Tan & Teo 2000).

Several studies related to consumer adoption of internet banking have reported strong correlations between channel related factors, such as channel accessibility and efficacy, usage of the internet based channel, risk perceptions associated with the channel, trust in the channel and the extent of personalisation in the channel (Zhao *et al.* 2008; Ratten & Ratten 2007; Littler & Melanthiou 2006; Yousafzai *et al.* 2005; Pincus 2004). Most of these studies conclude that the efficacy levels of consumers determine their adoption of internet banking service delivery channels (Yousafzai *et al.* 2005). Internet-based channels are generally perceived by consumers to be riskier and, as a consequence, consumer perceptions with regard to trust and risk play a prominent role in an online

environment (Forsythe & Shi 2003; Pavlou 2003). Challenges often exist in establishing the appropriate balance between remote and personal interactions, where both consumer and service provider needs can be satisfactorily met (Durkin *et al.* 2008; Durkin & Howcroft 2003). In light of such discussions of existing research, perceived self-efficacy, perceived risk, perceived trust and perceived personalisation have been identified as important channel-related factors that might predict consumers' continued and frequent use of internet banking. Such factors will be included in the research undertaken in this thesis due to their salience in previous studies.

Alongside technology and channel-related factors, another factor with the potential to predict consumers' continued and frequent use of internet banking is the social influence exerted by friends, family and colleagues. Tan & Teo (2000) state that subjective norms and normative beliefs are associated with social influence and can significantly influence consumers' intention to adopt internet banking. However, the role of social influence in the adoption of internet banking behaviour by consumers is somewhat unclear (Yousafzai *et al.* 2003). Banking transactions are highly individual and are often performed in private. Additionally, consumers often prefer not to disclose information regarding their financial transactions to others. Thus, research has questioned the influence of reference groups on consumers' intentions to adopt internet banking methods (Al-Hawari *et al.* 2005). In other literature, the influence exerted by social groups on consumers' intention to adopt internet banking is equivocal as one stream of research reported positive influences (Ravi *et al.* 2007) and another stream of research report non-significant influences (Chan & Lu 2004). Such contradiction within existing research means that there is a need to further investigate the influence of social factors. So, if the inclusion of social factors explains a relevant variance in the prediction of consumers' decisions to maintain their use of internet banking and to use that banking method frequently in ways not captured by other variables, then they may have an important role to play in explaining internet banking behaviour.

Creating value for consumers is central to marketing (Woo 1992). Thus, consumers' value perceptions are critical in the promotion of any marketing activity (Petrick 2002). Existing research shows that consumers' overall assessment of a particular distribution channel is pivotal and is often associated with their value perceptions based on their relevant judgment of a service (Chen & Dubinsky 2003). Petrick (2002) reported that value perceptions are pivotal as they might result in differential outcomes such as a

consumer's non-adoption, adoption, usage or continued usage of a product or service under consideration. To date most of the research in the existing literature has concentrated on consumers' value perceptions in relation to their online and offline store choice evaluations (Roig *et al.* 2006; Sweeney & Soutar 2001). Therefore, value-related factors are expected to play a significant role in predicting consumers' continued and frequent use of internet banking and will be included as a factor to measure in this research. The linkages between the aforementioned constructs will be discussed in detail in Chapter Two.

Existing studies indicate that, despite the internet banking service delivery channel being readily available, it is not accessed and utilised by consumers as fully as anticipated (Cazier *et al.* 2006; Wresch & Fraser 2006). Thus, there is a need in internet banking research to explore the actual reasons that impede consumers from adoption of internet banking in more detail. In order to do this, both quantitative and qualitative research methods will be used. Recently there has been a clear shift in several marketing studies from a purely traditional quantitative method to the inclusion of qualitative components (Thornton & White 2001). The present study uses an integrated methodology using open-ended questions that are exploratory in nature together with theory and quantitative results. The merit of such a method lies in the ability to obtain and analyse data from a rich sample consisting of both internet banking users and non-users. The research also fulfils the requirements of various internet banking researchers (Kasheir *et al.* 2009; Yousafzai *et al.* 2005) who highlighted the obstacles of basing any research on just one theoretical approach.

In summary, the present study will investigate the antecedents to consumers' continued and frequent use of internet banking by assessing the influence of technology, channel, social and value factors. The investigation will use both quantitative and qualitative methods in order to both develop theory and test theory related to internet banking usage patterns. The specific industry context for the research in this study is the retail banking sector. The next section will discuss the overall structure and current situation of the industry by way of background to the development of the literature review. The purpose of such a discussion is to highlight the product specificity of the research undertaken in the thesis and establish the fact that the research findings will be limited to the specific research context in which they are located.

1.3 RESEARCH CONTEXT

The financial services sector includes banking and non-bank financial services such as building societies, the securities exchange and services to finance and insurance businesses. Growth in the industry has been driven by the globalisation of financial transactions, development of new and more sophisticated financial services and products, increased international activity and significant growth in the funds management industry (Gyptra & Dixon 2002). Commercial banking in Australia began in the 1800s with the formation of British banks by colonists (Unnithan & Swatman 2001). The first central bank established was the Commonwealth Bank in 1901 (Lyell *et al.* 1997). The Reserve Bank of Australia (RBA) emerged as a separate entity in 1959 and attained the status of the national regulatory body. The Non-Bank Financial Intermediaries (NBFIs) in Australia were formed and developed in the 1960s and 1970s (Carew 1998). The decrease in the influence of the RBA was evident in 1979 and 1983 following the recommendations of the Campbell and Martin Committees (Carew 1998). Australian banks were even more open to service innovations due to the floating of the exchange rate in 1983 and the opening of the Australian banking system to foreign competitors in 1984 (Unnithan & Swatman 2001). In the past two decades the financial services sector has developed rapidly in terms of size, industry and the introduction of innovative products and services oriented towards consumers and businesses (Al-Hawari *et al.* 2005).

The Australian financial sector has been transformed from a relatively closed system in the 1950s and 1960s based on a conventional mode of banking to a modern and competitive system offering a wide range of products and services (Gardener *et al.* 1999). An upsurge in the Australian retail banking sector's productivity was evident during the period 1986 to 1995 (Avkiran 2000). The Australian financial market is currently dominated by principal regulators such as the RBA regulating monetary policies, the Australian Prudential Regulation Authority (APRA) overseeing the banking and financial institutions and the Australian Securities and Investments Commission (ASIC) regulating shares trading. The modern Australian banking system is characterised by four major banks garnering a significant proportion of the market share as a result of a series of bank mergers, credit unions formed by the unions and co-operatives, building societies predominantly created by the housing finance demand, and funds management institutions involved in superannuation and funds (Unnithan & Swatman 2001).

Additionally, the Australian Banker's Association (ABA) is the national organisation representing licensed banks in Australia (Avkiran 2000).

These rapid changes encouraged banks to acquire essential knowledge regarding future trends in order to compete effectively (Al-Hawari *et al.* 2005). The advent of internet and related technological innovations has demonstrated a remarkable influence on services, as exhibited by the proliferation of service delivery channels (Bitner *et al.* 2000; Dabholkar & Bagozzi 2002). Australia's retail banking sector exhibits certain similarities and differences with those of Canada, New Zealand, United Kingdom and the United States of America (Worthington & Edwards 2000). Historically, financial institutions and financial systems have strong associations with rural towns and a strong sense of community building, which is unique to the Australian banking system (Wallis Report 1997). Approximately 80-85 percent of the Australian banking market is controlled by four major banks and the remainder is shared by the regional banks and credit unions (IBIS World 2005). Also, IBIS World (2005) noted that consolidation of these major banks is unlikely due to the intervention of the Australian Consumer and Competition Commission (ACCC).

Retail banking includes all forms of banking undertaken by individuals and often encompasses any type of relationship that a consumer has with the bank from performing transactions, maintaining various accounts, dealing with the credit and debit cards, as well as mortgage and investment banking. There is a multitude of retail banking services available for consumers but their classification and total number may vary across different target markets (Akinici *et al.* 2004). Broadly speaking, retail banking services can be classified into the following four groups: current account, insurance-based, credit-based and investment-based services (Howcroft *et al.* 2002). In relation to internet banking, five basic services have been listed by researchers: viewing account balances and transaction histories, paying bills, transferring funds between accounts, requesting credit card advances and ordering cheques (Chou & Chou 2000). A more specific classification of different retail banking services' associated service delivery channels and target markets is presented in Figure 1.2.

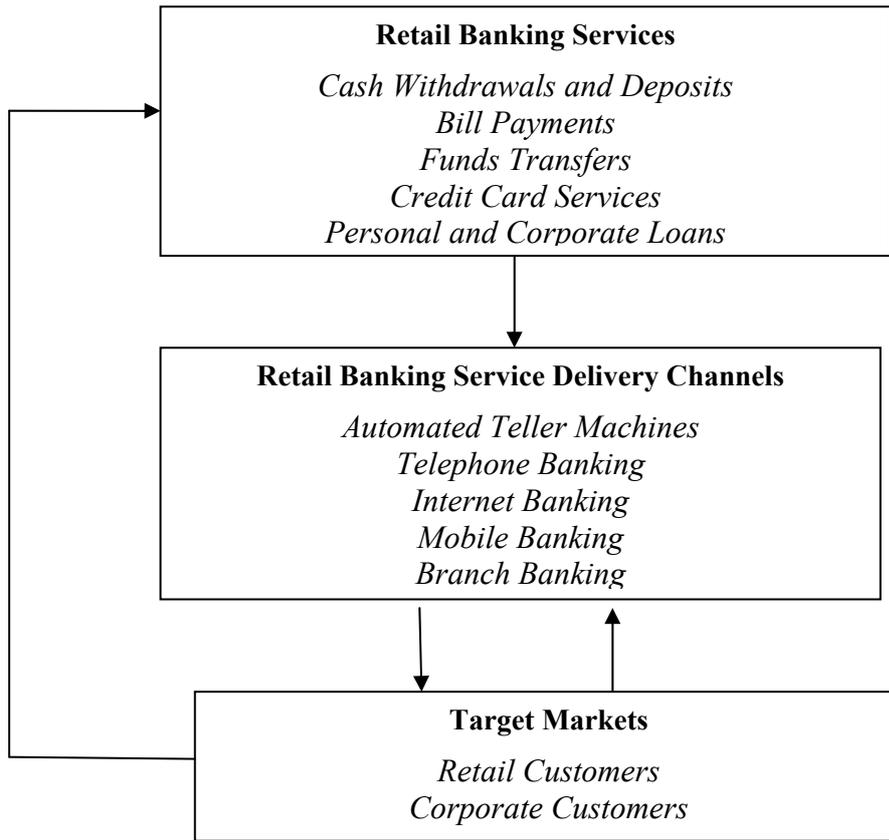


Figure 1.2: Retail Banking Services

Figure 1.2 depicts a comprehensive list of retail banking services available to customers, such as money withdrawals and deposits, payment of bills, money transfers, information gathering with regard to transactions, balances, rates and services, credit card services, personal and corporate loans, foreign currency, stocks, different types of accounts, cheques and investment funds (Akinci *et al.* 2004). Australian retail banks provide almost all of the abovementioned retail banking services to their prospective customers through automated teller machines (ATMs), electronic funds transfer at the point of sale (EFTPOS), telephone, and internet and, more recently, through mobile phones (Ralston & Beal 2000). Also, it is evident that there has been a sharp increase over the last decade in the number of conventional banks supplementing their branch services with that of electronically mediated ones (Reserve Bank of Australia 2004). One of the central goals of this thesis is to study the consumer's usage patterns of these service delivery channels in the retail banking sector and gain some insight into these banking channels.

1.3.1 Context for the Thesis Research

The present study was conducted in Sydney for a number of reasons. According to the Australian Bureau of Statistics, Sydney is the most populous city in Australia, with a metropolitan area population of approximately 4.28 million (ABS 2008). The largest productive economic sectors in Sydney include property and business services, retail, and health and community services. Financial services industry is the fastest growing service industry in New South Wales (NSW), recording an average growth rate of more than 9 percent between 1995 to 1996 and 2005 to 2006. Sydney is also identified as increasingly dominant in finance as its proportion of market share in the Australian financial services industry grew from 39 percent in 1995 to 42 percent in 2005. Banking is the dominant sector of the Australian financial services industry, accounting for 50 percent of the total assets. This sector continues to grow with the recent establishment of four offshore banks in Sydney: the China Construction Bank, Bank of Baroda, Bank of Ireland and Australia's first foreign central bank, The Peoples' Bank of China. Moreover, Sydney is the largest corporate and financial centre in Australia and in the Asia-Pacific region. Of the 55 authorised deposit-taking banks in Australia, 53 have operations in Sydney. Furthermore, Sydney is the location of the Reserve Bank of Australia, the Australian Securities Exchange and the Australian Financial Markets Association and is the headquarters for 90 banks (ABS 2008) within the geographical location of Sydney due to its importance as a retail banking centre for Australia. Locating the study in Western Sydney, however, will mean that caveats will exist regarding the generalisability of the findings. Such caveats will be discussed in the methodology chapter, Chapter Three.

1.4 RESEARCH OBJECTIVES

The principal objective of this thesis is to assess the predictive power of antecedents to consumers' continued and frequent use of internet banking in an Australian context. Specifically, this thesis examines technology factors such as relative advantage, compatibility, complexity, trialability and result demonstrability; channel factors such as perceived self-efficacy, perceived risk, perceived trust and perceived personalisation; social factors such as subjective norm and normative beliefs; and value factors such as perceived benefits and perceived costs and their predictive relationships with consumers' continued and frequent use of internet banking. Literature in the specified areas of internet banking research related to the theoretical models on the technology acceptance

and diffusion of innovations theory is integrated into the study in order to develop a conceptual framework. An empirical study is then designed to test the proposed conceptual framework in the Western Sydney region in the foyer of a busy shopping mall.

Technology factors are conceptualised based on Tan and Teo (Tan & Teo 2000; Black *et al.* 2001; Howcroft *et al.* 2002; Gerrard & Cunningham 2003). Channel factors are conceptualised according to Black *et al.* and other researchers (Black *et al.* 2002; Pincus 2004; Yousafzai *et al.* 2005; Littler & Melanthiou 2006; Ratten & Ratten 2007; Zhao *et al.* 2008); social factors are conceptualised in line with Venkatesh and Davis (Venkatesh & Davis 2000; Chan & Lu 2004; Ravi *et al.* 2007); value factors are conceptualised based on Petrick (Petrick 2002; Chen & Dubinsky 2003); continued use is conceptualised in line with Chan & Lu (Chan & Lu 2004; Hernandez & Mazzon 2007); and frequent use is conceptualised with regard to Gan *et al.*'s (2006) adoption of internet banking study (Gan *et al.* 2006). The frameworks developed for studying intention to adopt and adoption of internet banking by Black *et al.* (2002) and Yousafzai *et al.* (2005) are used as conceptual stimuli for developing the theoretical framework for investigating the antecedents to consumers' continued and frequency of use of internet banking in an Australian context. Each of the factors included in the study will be further discussed in the literature review and the methodology chapters of the thesis.

1.5 NEED FOR AND SIGNIFICANCE OF THE RESEARCH

The present research stems from the need to provide better information and understanding of consumers to the bank management, marketers and decision-makers in the financial services sector, especially those involved in the retail banking industry. The present research extends several theories that are of high relevance and importance in the context of internet banking research. Investigating antecedents to consumers' continued and frequent use of internet banking has relevance for financial sector managers, marketers and administrators, retail banking managers, marketers and decision-makers, academics and practitioners in the services marketing area.

As mentioned earlier, researchers concentrating on internet banking have expressed the need for integrating different theories and/or for evaluating related theories in the same investigation. Integration of theories when studying internet banking continued and frequent use and its consequences has been proposed to overcome the pitfalls of basing any internet banking research on just a single theoretical approach

(Kashier *et al.* 2009; Yousafzai *et al.* 2005). Such an approach will lead to a more detailed understanding of consumers' actual usage patterns related to internet banking. It is the understanding that this thesis is one of the first studies to integrate various theories and empirically test the proposed framework with the use of quantitative and qualitative data from the consumer's perspective of internet banking. Moreover, the present research contributes to knowledge by investigating in detail the potential factors that influence a consumer's continued and frequent use of internet banking, as opposed to just proposing a conceptual framework based partly upon the findings from previous research on the topic (Kashier *et al.* 2009; Yousafzai *et al.* 2005).

Recent research has shown that a consumer's intention to adopt and their actual adoption of internet banking may not lead to a consumer's continued use or to increasing their frequent use (Yousafzai *et al.* 2005; Kashier *et al.* 2009). These same researchers propose that understanding consumer behaviour in the context of internet banking is often a complex process due to the online environment, thus a coherent understanding of the picture only occurs when various theories are integrated. Assessing and understanding the predictive relationships that arise from the impact of the different factors of technologies, channels, social influences, value factors and consumers' continued and frequent use of internet banking may lead to the effective formulation of new service delivery channel management strategies. These new strategies may prove more successful than the existing ones as they will be based on the detailed changing needs of banking customers. Also, the research highlights the hierarchical order of importance of the factors which help in maintaining better customer retention and thus may significantly contribute to enhancing the productivity and profitability of retail banking per se. Furthermore, the information obtained from the present study may help the retail banking sector to make more reasoned decisions about design and promotion of their internet banking products and services to consumers.

1.6 OVERVIEW OF THE THESIS

The thesis consists of six chapters. Chapter One includes a discussion of the research objectives of the thesis, the reasons for the research, a discussion of the context for the research and outlines the structure of the thesis.

Chapter Two presents a brief description of the prevailing global internet banking trends including a valid definition of internet banking, followed by a discussion of the

evolution of various service delivery channels in the retail banking sector. Chapter Two then discusses internet banking trends in the USA, Europe, Africa, the Middle East, Asia, Australia and New Zealand. Finally, issues, controversies and problems associated with internet banking are discussed. Chapter Two also presents a review of relevant literature in the areas of continued use, frequency of using and adoption of internet banking. This chapter also focuses on technology, channel, social and value factors as predictive antecedents to continued use and frequency of using the internet banking service delivery channel. This chapter discusses the main concepts that are used in the present research and concludes with the development of a conceptual model from which the research questions/hypotheses are derived.

Chapter Three discusses the research methodology adopted for the study. The main empirical study is designed to evaluate the proposed conceptual framework using data obtained from a structured questionnaire. The questionnaire consists of both quantitative and qualitative components. The quantitative component consists of scale items in the form of closed-ended rating items. The qualitative component consists of four open-ended questions. Factor analysis is used to refine the scales used in the study. The conceptual framework and the emergent research hypotheses are evaluated using hierarchical multiple regression and logistic regression analyses. The qualitative data are analysed using thematic matrix display tables in order to identify specific themes that elicit the reasons for not using internet banking from non-users, and users' experiences with internet banking.

Chapter Four summarises the quantitative results obtained from the hierarchical and logistic multiple regression analyses. Results are presented based on a specified order of entry for the predictor variables, sequentially reflecting the predictive influence of (1) demographic characteristics, (2) technology factors, (3) channel factors, (4) social factors, and (5) value factors on (6) continued use and frequency of use of internet banking. The findings obtained from the empirical study are linked back to the conceptual framework and research propositions developed in Chapter Two.

Chapter Five summarises the results of the qualitative data analysis which has been presented in the thematic matrix display tables. These matrix display tables are used to categorise responses to the four open-ended questions that were included in the survey questionnaire. These open-ended questions cover numerous issues in the research. Firstly, non-users of internet banking are asked about their reasons for not using internet banking.

Secondly, users of internet banking are asked about the circumstances under which they prefer to use other banking channels. Internet banking users are also asked about their perceptions regarding electronic banking methods, their belief that banks are oriented towards meeting customers' needs and wants and their personal experiences of using internet banking. The resulting themes from conceptually-related responses are linked to the existing literature on internet banking research as well as to the quantitative results reported in Chapter Four.

Chapter Six, the final chapter, presents the main conclusions from the research by providing a critical review of the main findings reported in Chapters Four and Five. The findings obtained from the study are compared and contrasted with those of other relevant studies. Implications of the research for theory, methodology and managerial practice are also discussed. Limitations of the research are identified and directions for future research are presented. The overall research framework adopted for the present research is provided in Table 1.1.

Table 1.1: Research Framework

Number	Phase	Chapter Split
1	Observation	Chapter 1 – Introduction Background and aims
2	Preliminary information gathering	Chapter 2 – Literature Review Global Internet Banking Trends
3	Theory formulation	Background research Identification of key constructs Development of the conceptual model
4	Hypothesising	Hypotheses development
5	Scientific data collection	Chapter 3 – Research Methodology Operationalisation of the constructs Develop survey questionnaire Pretest questionnaire Administer questionnaire
6	Data analysis	Chapter 4 – Sample Characteristics and Quantitative Model Testing Results Chapter 5 – Qualitative Results Data entry and coding Data reduction Qualitative data analysis
7	Deduction	Chapter 6 – Conclusions and Implications Identify theoretical implications Identify managerial implications Identify methodological implications

Source: Sekaran (2003)

1.7 SUMMARY

Chapter One introduced the topic under investigation and discussed the purpose and structure of the study. Firstly, the research problem was presented with special attention given to consumers' continued and frequent use of the internet banking service delivery channel. The Australian retail banking industry which forms the research context for the present study was then discussed. The key research objectives were explained and

the need for, and significance of, the research was presented together with an overview of the thesis. The principal goal of the present study is to develop a conceptual framework that explains the influence of technology, channel, social and value factors on the propensity of consumers for continued and frequent use of internet banking. A structured survey was designed to test the proposed relationships between technology, channel, social and value factors and the internet banking usage patterns of Australian consumers. The research extends the knowledge related to existing internet banking research by expanding the focus from simple adoption patterns of internet banking to include consumer usage patterns of internet banking. The research also adds a new methodological application to internet banking research by integrating various theories to develop a conceptual framework that is more statistically and theoretically robust than previous studies. The research in the thesis should be of interest to managers, marketers and banking employees as well as academics in the field.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

Chapter One provided an overview of the thesis and a brief description of the need for research in the selected area. As discussed in Chapter One, the research goals of this thesis are to investigate factors influencing how and why consumers continue to use, and how frequently they use, internet banking. The traditional distribution channel that banks use to deliver their products and services to consumers is through physical bank branches. However, the financial services industry has changed rapidly due to the advent of the internet, rapid changes in technology, deregulation and globalisation, as well as the impact of changing competitive and regulatory forces. In order to cope with the quick changes in their business context, banks started to rely on multiple and varied distribution channels as an alternative strategy for differentiation and gaining further competitive advantage. The abovementioned paved the way for the development of the electronic banking phenomena with internet banking and mobile banking as recent financial innovation additions. This chapter attempts to provide a comprehensive explanation of the activities surrounding internet banking, the evolution of internet banking, existing global internet banking trends in various countries, and concluding remarks. The content provided in this chapter would be useful for existing and potential banks to better understand global internet banking trends from the perspective of the consumer and thus aid in the effective formulation of channel management strategies that are specifically tailored to consumer needs. Further, this chapter focuses on the theoretical foundations of the study and introduces the main concepts. The main concepts that have been identified will be discussed in terms of how they are related to the research goals of the thesis. The existing research in the areas of continued use, frequency of using and adoption of internet banking are presented in this chapter. Based on the literature review, a conceptual model is developed and subsequently integrated into a research model. Furthermore, the gaps in the literature are identified and several research questions in the form of research hypotheses are presented.

2.2 INTERNET BANKING MEANING AND DEFINITION

Often internet banking is defined as web based banking (Hertzum *et al.* 2004). It differs from online banking in that internet banking provides universal connection from any location worldwide and is universally accessible from any internet linked computer

(Wu *et al.* 2006; Bradley & Stewart 2003). Also internet banking refers to the provision of retail and small value banking products and services through electronic channels as well as large value electronic payments and other wholesale banking services delivered electronically (Yibin 2003). Internet banking is often identified as a process of innovation whereby consumers handle their own banking transactions without visiting branches (Sullivan & Wang 2005; Chang 2002). Internet banking also refers to systems that enable bank customers to get access to their accounts and general information on bank products and services through the use of the bank's website without the intervention or inconvenience of sending letters, faxes, original signatures and telephone confirmations (Henry *et al.* 1999, 1998).

Other researchers' related internet banking to the type of products and services through which bank customers request information and carry out most of their retail banking activities through computer and internet (Daniel 1999; Sathye 1999; Mols 1998). Internet banking is described as an electronic connection between bank and customers in order to prepare, manage and control financial transactions (Burr 1996). On a broader perspective, internet banking is defined as the provision of banking services via means other than traditional physical branches (Liao *et al.* 1999). An analysis of the secondary data shows that internet banking at the global level has had a phenomenal uptake amongst consumers. The main focus in the present chapter is a comprehensive review of internet banking from a global perspective. The remainder of the chapter deals with the evolution of internet banking, global trends of internet banking, opportunities and challenges associated with the uptake of internet banking, future directions and concluding remarks.

2.3 EVOLUTION OF ELECTRONIC BANKING CHANNELS

The global financial services industry is being reshaped by the proliferation of internet service delivery channels. A comprehensive understanding of the evolution of internet banking is essential in order to identify the key changes in the financial services sector worldwide. Electronic banking is the process through which bank customers request information and carry out most of their retail banking activities through computer, television or mobile phone (Mols 2000; Sathye 1999; Daniel 1999). Banks, through electronic banking, offer their financial services to prospective customers through various forms such as Automated Teller Machines (ATMs), telephone, home, internet and mobile banking. In order to gain a competitive advantage and eliminate the costs associated with

traditional bank branches, one of the key objectives of electronic banking is to offer higher interest rates and lower service charges to customers for their savings accounts (Talmor 1995). The different forms of electronic banking will now be discussed in detail.

The first form of electronic banking was the ATM (Kass 1994). An ATM is a computerised telecommunications device that provides the customer of a financial institution with access to financial transactions in a public space without the need for a bank teller. For most modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic strip, or a plastic smart card with a chip, that contains a unique card number and some security information, such as an expiration date. Security is provided in the form of entering a Personal Identification Number (PIN) by the customer (Ghose 1987). By using an ATM card, customers can access their bank accounts and perform transactions such as cash withdrawals and balance inquiries. ATMs are known by various casual terms including automated banking machine, money machine, cash machine, hole-in-the-wall, cash point or bancomat (in Europe and Russia).

Telephone banking is a service provided by a financial institution which allows its customers to perform transactions over the telephone. Most telephone banking uses an automated phone answering system with phone keypad response or voice recognition capability. To guarantee security the customers must initially authenticate their account by using a numerical or verbal password or through security questions asked by a representative. With the obvious exception of cash withdrawals and deposits, telephone banking offers all the virtual features that are accessed with the use of an ATM such as balance inquiry, checking latest transactions, bill payments, order statements, checking foreign exchange rates, activating cards, changing passwords and funds transfer between customer accounts (Al-Ashban & Burney 2001). Telephone banking paved the way for the development of home banking services. Home banking is defined as conducting the transactions and accessing bank account information via personal computers and is often referred to as electronic banking. In order to perform home banking, a personal computer, a modem and a telephone line are required. In addition, specific banking application software needs to be installed to perform various banking functions (Liao *et al.* 1999).

The advent of the internet has had a significant impact on the banking service that is traditionally offered by the branches to the customers. Internet banking, often referred to as 'online banking', can be defined as performing financial transactions over the internet through a bank's website (Shao 2007). The objective of internet banking is to

provide financial services to the customers 24 hours a day, 365 days a year from locations with internet accessibility. Banks expect advantages such as reducing operating costs, wide customer reach, the promotion of business diversification, and retention of market share (Carlson *et al.* 2001; Centeno 2004). Internet banking trends exhibited globally will be discussed in detail later in this chapter. Mobile banking refers to the provision of banking and financial services with the help of mobile telecommunication devices. The scope of services offered may include facilities to conduct bank and stock market transactions, to administer accounts and to access customised information (Gurau 2002). Mobile banking today is most often performed via SMS (Short Message Service) or the mobile internet. Mobile banking presents an opportunity for banks to retain their existing, technology-savvy customer base by offering value-added, innovative services and thus attracting potential customers. Mobile banking provides account information (access to loan and card statements, alerts on account activity), payments and transfers (domestic and international funds transfer, mobile recharging, commercial payment processing), investments (portfolio management services, personalised alerts on security prices, real time stock quotes), support (ATM location, exchange of data messages and email, cheque book requests) and content services (loyalty related offers, location-based services). Mobile banking is still in its infancy in many countries and is a recent introduction in the financial services context and therefore will not be considered for the purpose of the present research.

2.4 GLOBAL INTERNET BANKING TRENDS

A brief history and trend analysis of the evolution of the internet banking industry globally, using document analysis, reveals the major barriers, impediments and boosters for the rapid transition of the banking sector and uptake of internet banking. Document analysis is the systematic analysis of a particular topic using documents such as newspapers, annual reports, employment records, published and unpublished articles, industry and consultancy reports, ongoing academic working papers, government white paper reports and white papers (Neuman 1997).

Rapid technological advancements, coupled with the expansion of the global economy in the past two decades, have paved the way for the transformation of the banking system role from traditional trade financing to mobilising and channelling financial resources more effectively. In an intensifying competitive environment, superior

distribution strategies concerned with how to communicate with and deliver products to the customer effectively provide a competitive advantage to banking institutions in the market place. Thus, various distribution channels may themselves provide the basis for differentiation rather than the core service itself (Howcroft *et al.* 2002). Therefore, many banks globally have started to take initiatives to set in place more cost-effective alternative service delivery systems in the form of financial sector innovations such as internet and mobile banking. It has been estimated that the average cost of service delivery at a typical bank ranges from 285 to 350 basis points per dollar of deposits, which is far higher than that for non-bank competitors (Barrett 1997).

An overview of the various technological developments in the banking sector reveals that internet and mobile banking types of banking are the most recent electronic banking service delivery channels. The following sections briefly describe the evolution of electronic banking service delivery channels from a global perspective with a major emphasis on internet banking.

2.4.1 Technological Evolution of Internet Banking in the USA

It is evident from the existing literature that the average consumer has accepted electronic banking services with phenomenal intensity, particularly with regard to the service delivery channel of the Automated Teller Machine (ATM) (Centeno 2004). ATMs globally are well adopted by the consumers and in many countries the adoption trend is above the 'critical mass' based on the number of transactions performed so far. The world is now home to 1.65 million ATMs and this is expected to grow by 1.7 million in 2009. The USA and other parts of the Western world were the first to experience ATM proliferation with the trend subsequently spreading to developing countries. It has been reported that in the USA individuals prefer ATM usage and in Canada 75 percent of consumers prefer banking through an ATM (Finextra 2005c). ATM users, based on the discriminant analysis, were classified as users and non-users in Canada based on five predictors of education, social orientation, convenience, familiarity with other technology and attitude towards ATM technology (Marshall & Heslop 1988). The trend is changing with tele-banking gaining much greater acceptance and a 16 percent increase in the usage of tele-banking has been reported by Datamonitor (Aladwani 2001).

According to a survey conducted by Dove Associates for US Banker, approximately 15.5 percent of the banking transactions were conducted by the customers

in the USA through telephone (Milligan 1997). However, with the advent of internet and mobile banking, the usage of telephone banking in the USA reduced to 20 percent in 2004 from 26 percent in 2001. Convenience is the main attraction for 79 percent of consumers to use internet banking services and 71 percent of consumers use it for time saving (Fox 2002). Also, it has been reported that 30% of consumers use internet banking for cost savings and 52 percent to have better control over their finances (CRM Today 2003a). Although different market research analysts predicted a large increase in internet banking adoption by consumers in the USA, the level of adoption has not been as big as anticipated (Tedeschi 2000). The low internet diffusion rate has been attributed to consumers' attitude towards internet banking adoption as well as their perception regarding the benefits offered by internet banking (Carlson *et al.* 2001). It has also been reported that cross-selling related issues concern the customers regarding banks performance and making it difficult for the customers to access key information regarding internet banking products and services on the bank's websites (Finextra 2005b). On the contrary, another report indicates that 44 percent of the internet users performed internet banking in 2004 in the USA, which is an increase of 47 percent from 2002. The usage is more prominent among young people and in the broadband users' category (eMarketer 2004). Recent forecasts indicate that the number of internet banking households will reach 74 million in the USA by 2011. By 2010, 13 percent of checking accounts will be opened online (Fox & Beier 2006).

Consumers in Canada often presume that internet banking is not for everyone and 59 percent of the consumers visit bank branches to carry out transactions and this has remain unchanged since 2003 (Finextra 2005c). The major barriers to the adoption of internet banking in Canada were identified as the availability of alternative service delivery channels (Finextra 2005c). Mobile banking is growing rapidly in all corners of the world, often in different ways, for varying reasons and using a broad range of mobile technologies. In the USA there has been a flurry of activity recently as mobile operators, technology providers and retail banks compete to launch mobile banking services to consumers (Kolodinsky *et al.* 2004). Citibank is making a downloadable mobile banking application available to its customers, while Wells Fargo is experimenting with different technology approaches through a series of consumer pilots. AT&T Cingular has recently announced a generic federated rich mobile banking offering to the major retail banks in the USA (Nathan 1999). Structure and performance characteristics of the banks were

analysed by estimating the number of banks offering internet services in the USA (Legris *et al.* 2003). There exists a significant shift to electronic payments by consumers and businesses in the USA (Furst *et al.* 2002). A survey of the websites of various banks in the USA reveals that the websites were of basic or intermediary level (Diniz 1998). National banks offering internet services in the USA accounted for 90 percent of national banking system assets and 84 percent of small deposit accounts (Furst *et al.* 2002). In terms of performance in the USA internet only banks substantially underperform established banks initially but the gaps between their performance systematically diminish over time as new banks grow older and larger (DeYoung & Rice 2004). A comparative study of internet and non-internet banks in the USA revealed that institutions with internet banking outperformed non-internet banks in profitability (Furst *et al.* 2002). Table 2.1 depicts recent internet banking studies conducted in the US context. The findings obtained from these studies will be discussed further in detail.

Table 2.1: Existing Internet Banking Studies in the USA

Researchers	Study
Kolodinsky <i>et al.</i> (2004)	The adoption of electronic banking technologies by US consumers
Sarel & Marmostein (2003)	Marketing online banking services: The voice of the customer
Joseph & Stone (2003)	An empirical evaluation of US bank customer perceptions of the impact of technology on service delivery in the banking sector
Jun & Cai (2001)	The key determinants of internet banking service quality: A content analysis
Nath <i>et al.</i> (2001)	Bankers' perspectives on internet banking
Byers & Lederer (2001)	Retail bank services strategy: A model of traditional, electronic and mixed distribution choices

2.4.2 Technological Evolution of Internet Banking in Europe

The UK, Spain, France, Germany and Italy account for a massive 77 percent of the ATM installed base. The greatest growth is being led by Turkey, the Netherlands and Greece as well as from the countries in the Eastern European region. In Western Europe, the on-premise ATM market is increasingly mature, and growth opportunities are still available. At the end of 2006, Western Europe had just fewer than 350 000 ATMs (Retail Banking Research 2006). On average, an ATM in Western Europe alone completes 2888

cash withdrawals per month. Many studies about adoption of service delivery systems with reference to ATM usage have been conducted worldwide. A number of those studies have investigated the profiles of ATM users and non-users, demographic differences and the importance of perceptual factors as predictors of ATM usage. Filotto *et al.* (1997) investigated the demographic characteristics of ATM users and non-users of Italian bank customers and identified that Italians have been largely reluctant to adopt the innovative service delivery mechanism in spite of higher adoption rates among the young consumers. One of the most commonly discussed stories in relation to telephone banking is the UK bank, First Direct (Devlin 1995). First Direct was launched in 1989 as a tele-banking service provider and at the end of 1998 it had 1.2 million account holders (Management Today 1998). According to the European Central Bank, although all major banks offer internet banking services, the level of services and their quality differ according to the country and the type of bank (Centeno 2004). Even in countries such as Finland and Sweden, where internet penetration is more than 50 percent, consumers tend to prefer branch banking and around 60 percent of the consumers are reluctant to make online banking transactions (Bughin 2003). Disparities in the adoption of internet banking also exist in several countries in Europe.

The first electronic banking services were introduced in Estonia in 1996. Internet banking applications gained momentum in Estonia due to high internet penetration and speed of the internet access (Eriksson *et al.* 2005). In Estonia, 18 to 25 percent of the population are using internet banking services, whereas the Italian banks had almost no online consumers by early 2000 and banks in Malta launched internet banking only in 2002 (Centeno 2004). The percentage of internet usage was 43% in 2002 in Estonia which recorded the highest internet penetration rate in comparison with the other East European countries (Kerem *et al.* 2003). In terms of the uptake of the internet Scandinavian banks perform better than Irish and French banks due to push and pull effects exhibited by them (Bughin 2003). Existence of a strong correlation between internet diffusion and cost of service access, confidence in the security of the system, privacy and trust in banks hindered the adoption of internet banking (Gurau 2002). Similarly, access to ATMs, use of cashless payments and value of cash in circulation to gross domestic products (GDP) also influence the rate of internet banking adoption, but the results are either mixed or inconclusive in most studies regarding the causes for this (Centeno 2004). Western European consumers are expected to lead Europe in terms of the

number of internet banking customers, which is predicted to go past 60 million. Pure internet banking would be unlikely to succeed in Europe since the high level of technology investment and the high consumer acquisition cost would hinder economic viability. The same research has revealed that the success of internet banking would be more successful if it continued to integrate with other more traditional banking channels (Centeno 2004). In the UK, HSBC's subsidiary, First Direct, introduced SMS services in 1999 and has since adopted the Montise service, A third party provider, Montise enables the download of a mobile application that enables consumers to review their balances, view recent transactions and top-up their mobile phone account. Montise is technically available to all UK banks.

Almost every bank in Greece offers internet banking on a retail basis. It has been reported that there are 226 000 customers with an active internet banking subscription consisting of 2.74 percent of the Greek population over 18 years of age (Hellenic Banks Association 2005). All the internet banking users in Greece account for 73 percent of the total banking population, jointly shared by the four leading banks of Greece. Banks in Turkey are classified into commercial or deposit banks (those with permission to accept deposits), non-deposit or development and investment banks (those that do not accept deposits) and participation banks (based on interest free banking). Each of the abovementioned bank groups consists of three sub-groups, such as state-owned, private-owned and foreign banks according to their ownership structure (Aktan *et al.* 2009). As of December 2008, there are forty-two banks in Turkey, of which thirty-two are deposit banks, thirteen non-deposit banks and eleven participation banks. Out of the thirty-two deposit banks, three are state-owned, eleven privately-owned, seventeen are foreign banks and one bank is under the supervision of the Savings Deposit Insurance Fund (SDF) with 8791 branches including those abroad. Seventeen banks are listed additionally on the Istanbul Stock Exchange (BAT 2008a). The total number of financial transactions performed via internet banking services was 223 130 million in 2008 and the total number of money orders, electronic funds transfers and foreign currency transfers was 120 092 million. Document analysis reveals an increase in the number and volume of financial transactions executed through internet banking services in 2007 and 2008 (BAT 2008b). Table 2.2 presents recent internet banking research undertaken in Europe and the findings obtained from each of these studies will be discussed in detail subsequently.

Table 2.2: Existing Internet Banking Studies in Europe

Researchers	Study	Country
Akinci <i>et al.</i> (2004)	Adoption of internet banking among sophisticated consumer segments in an advanced developing country	Turkey
Bradley & Stewart (2003)	The diffusion of online banking	Ireland
Howcroft <i>et al.</i> (2002)	Consumer attitude and the usage and adoption of home-based banking in the United Kingdom	UK
Karjaluoto <i>et al.</i> (2002)	Factors underlying attitude formation towards online banking in Finland	Finland
Kapoulas <i>et al.</i> (2002)	Say hello, wave goodbye: Missed opportunities for electronic relationship marketing within financial services sector	UK
Polatoglu & Ekin (2001)	An empirical investigation of Turkish consumers' acceptance internet banking services	Turkey

2.4.3 Technological Evolution of Internet Banking in Africa

In South Africa, internet banking is relatively new with only four banks providing internet banking services in 2002 with slow progress (Singh 2002). About 92 percent of consumers mainly depend on ATMs and the frequency of internet banking ranges from 12 percent daily to 59 percent monthly. Sixty-nine percent of the consumers were identified as non-users and the main reason for non-adoption pertains to unsafe transactions, cost and unawareness of the benefits, products and services offered through internet banking. Also, about 33 percent of the consumers were found to be ignorant of internet banking (Singh 2002). Security is the major obstacle for the use of internet banking in South Africa (Hickman 2000). In Ghana and other parts of Africa, internet banking is still in its early stages of development and offers only limited services (Boateng & Molla 2009). In Zimbabwe, ATMs were installed by the Standard Chartered Bank (SCB) and Central Africa Building Society (CABS) in the early 1990s. Later telephone and internet banking were introduced. Thulani *et al.* (2009) reported that adoption of internet banking remained sluggish despite the convenience it offers to the customers and banks. The banking sector has been gripped by a crippling cash crisis since November 2002 which tremendously impacted on the economy of the nation.

According to the Central Bank of Nigeria (CBN) survey report in 2002 (Ezeoha 2006), the African Banking Corporation, which was Nigeria’s first bank, was established in 1892. Out of the eighty-nine licensed banks in Nigeria, only seventeen banks are currently offering internet banking services, twenty-four are offering basic telephone banking services, while thirteen banks are offering other electronic banking forms. In Nigeria, internet banking is yet to take the predominant place despite its widely acclaimed benefits against the traditional bank branch practice (Ezeoha 2006). Low penetration of internet banking in Nigeria is attributed to a lack of adequate operational infrastructure like telecommunications and power (Chiemeké *et al.* 2006). In short, internet banking is a significantly new phenomenon in African countries with a very low diffusion rate, and the current situation with regard to mobile banking could not be further analysed due to a lack of information and the limited amount of published reports (Varma 2001). Table 2.3 shows the recent internet banking-related research undertaken in Africa and the findings obtained from each of these studies will be discussed in later sections in detail.

Table 2.3: Existing Internet Banking Studies in Africa

Researchers	Study	Country
Singh (2002)	Trends in South African internet banking	South Africa
Ezeoha (2006)	Regulating internet banking in Nigeria: problems and challenges	Nigeria
Thulani <i>et al.</i> (2009)	Adoption and use of internet banking in Zimbabwe: An exploratory study	Zimbabwe

2.4.4 Technological Evolution of Internet Banking in the Middle East

In the Middle East it has been reported that more customers prefer using ATMs (Al-Ashban & Burney 2001). The electronic banking system, such as the ATM, has been perceived by consumers as a convenient transition in the banking sector and 50 percent of the transactions are conducted outside bank branches (Jesse 1996). Customers increasingly tend to use tele-banking as their experience grows with the system. Also, level of education and level of income variables play a vital role in influencing consumers’ usage as well as their adoption of tele-banking in Saudi-Arabia (Al-Ashban & Burney 2001). Only 19 percent of the banks have full transactional capability in their current services in the Middle East (Guru *et al.* 2003). The National Bank of Oman (NBO) pioneered the Sultanates first internet banking service in February 2002, followed by the Bank Muscat (BM) which launched an internet banking service in June 2002.

However, other banks such as the Oman International Bank, the Oman Arab Bank and the Central Bank of Oman have maintained informational websites with basic interactive capabilities only since September 2003 (Guru *et al.* 2003). Banks in Oman adopted electronic banking services slowly and were cautious in moving from traditional channels (Al-Hajri & Tatnall 2007). The United Arab Emirates (UAE) is classified as a high income, non-OECD country according to World Bank country classifications. Anecdotal evidence suggests that less than 20 percent of bank account holders in the UAE were registered for internet banking services in 2006 (Awamleh & Fernandes 2006). It has been reported that Islamic banks can no longer ignore the importance of internet banking as 20 percent of their customers are willing to switch to other financial institutions if their current bank fails to offer financial services over the internet (Guru *et al.* 2003).

According to the Economic Intelligence Unit report (Roth 2001), 14 percent of the region's internet users are currently registered to internet banking services. Three leading countries in the Middle East with internet banking adoption are Bahrain with 17 percent, the United Arab Emirates with 21 percent and Kuwait with 29 percent (Roth 2001). Significant disparity is evident in Gulf countries with regard to internet adoption and no banks in Iran, Palestine and Yemen offer sufficient online transaction facilities (Awamleh *et al.* 2003). In Saudi Arabia, the use of internet banking is a marginal activity, with about 73 percent of the banks having their own websites, out of which 25 percent of sites are offering full services over the internet. Very few banks offered internet banking services in Oman and Jordan, though the banks maintained an informational website with basic interactive capability (Awamleh *et al.* 2003). Early adoption of internet banking in Jordan emerged in 2000 by two local banks, the Arab Bank and the Jordan Kuwait Bank (Siam 2006). The number of banks offering internet banking services increased from two in 2000, to fourteen in 2008, out of a total of twenty-three banks in Jordan. Significant adoption of internet banking is evident with the Ahli Bank and the Arab Bank, but the National Bank of Kuwait lags behind (Migdadi 2008). Table 2.4 refers to the recent internet banking- related research undertaken in the Middle East and the relevant findings will be discussed further.

Table 2.4: Existing Internet Banking Studies in Middle East

Researchers	Study	Country
Aladwani (2001)	Online banking: A field study of drivers, development challenges, and expectations	Kuwait
Al-Sukkar & Hassan (2005)	Towards a model for acceptance of internet banking in developing countries	Saudi Arabia
Siam (2006)	Role of electronic banking services on the profits of Jordanian banks	Jordan
Akinci <i>et al.</i> (2004)	Adoption of internet banking among sophisticated consumer segments in an advanced developing country	Saudi Arabia

2.4.5 Technological Evolution of Internet Banking in Asia

Asia, Japan, South Korea and Hong Kong reported the presence of more ATMs per person compared to the other Asian countries (Pyun *et al.* 2002). However, the ATM networks currently operating in Japan are not compatible with global networks (Pyun *et al.* 2002). In India, 89 percent of the population prefer to conduct transactions using the ATM and the concentration of the ATMs is in urban areas (Mishra 2001). Income was found to be the most important demographic variable that influenced the frequency of ATM usage in Hong Kong (Steyen & Chan 2003). Telephone banking is gaining momentum in India, particularly due to its acceptance by many firms (India Infoline 2000). However, home banking has failed to gain acceptance in Hong Kong (Liao *et al.* 1999). Results indicate that over half a million users visited an online banking site in Hong Kong from their home computers initially but with the advent of internet banking the number of home banking consumers drastically reduced (Steyen & Chan 2003).

About 15 percent of adult consumers were reported to be using internet banking towards the end of 2000 in Singapore (Loo 2001; Tan & Teo 2000). According to the Monetary Authority of Singapore (MAS), Singapore's central bank, retail banks are classified into either local or foreign full license banks. The full license banks are authorised to offer the broadest range of financial services, including service delivery through the internet. There are six local and twenty-two foreign full license banks in Singapore. It was not until the second half of 1997 that first local banks, Development Bank of Singapore (DBS) and Capital One Bank (COB), began to offer internet banking

services. The Overseas Chinese Banking Corporation (OCBC) commenced its internet banking operations in 1998 and Overseas Union Bank (OUB) in 1999. Later foreign full license banks such as the Hong Kong Shanghai Banking Corporation (HSBC), Citi Bank and Standard Chartered Bank (SCB) also started providing internet banking services. DBS controls 70 percent of the internet banking market and 25 percent is controlled jointly by Citi Bank, OCBC and OUB. The remaining five percent of the internet banking market is held by all the other banks offering internet banking services (Gerrard & Cunningham 2003).

The growth of online banking consumers is up by 63 percent across South Korea, Hong Kong, Singapore, China and Taiwan. The total internet banking population for this region has increased by four million in one year. South Korea has the largest number of internet banking users, followed by China and Taiwan. Internet banking was introduced in Korea in 1999 and commercial banks in Korea have been quick to realise the importance of internet banking to gain a competitive advantage. The number of internet banking users in Korea reached 22 570 in 2006 (Ok & Shon 2006). China is an important strategic market for many international organisations as is evident in terms of its continuous economic growth, massive market size and enhanced consumption power (Zhao *et al.* 2008; Lu *et al.* 2005). The financial services market experienced early transformations and became available for trading to foreign banks in 2007 (Yu 2006; Worthington 2005). Lu *et al.* (2005) reported that financial services are densely networked at the local branch level by four former state-owned domestic operators. The Chinese internet market is projected to exhibit tremendous growth potential due to the increase in the number of internet banking users and the substantial amount of monetary funds processed online (Zhao *et al.* 2008). The People's Daily Online (2002) reported that the Industrial and Commercial Bank of China (ICBC) processed more than 600 million US\$ on the internet during 2004, comprised of 110 100 corporate users and ten million individual users.

As more affluent and educated people tend to shift towards internet banking adoption in the near future banks will be challenged to remain focused on delivering service to online customers (Guru *et al.* 2003). Commercial banks in Malaysia started offering internet banking services in June 2000. However, nowadays, only banking institutions licensed under The Banking and Financial Institutions Act (1989) and The Islamic Banking Act (1983) are permitted to offer internet banking services in Malaysia.

Thus, currently, in Malaysia twenty-five commercial banks and seven Islamic banks offer the internet banking service delivery channel (Shanmugam *et al.* 2002). Some Malaysian banks prior to June 2000 offered electronic banking services through proprietary software and connection to the bank; however, with the consolidation of banks, 'Maybank 2u' has become the leading internet banking service provider in the country (Sohail & Shanmugam 2003; DeSilva 2003). The level of awareness of internet banking is lacking among non-users in Malaysia (Suganthi *et al.* 2001). A preference for human interaction, trust and security affect the diffusion of internet banking services in Malaysia (Suganthi & Balachandran 2001).

The government of India enacted the information technology act in 2000 to provide legal recognition of electronic transactions and other means of electronic commerce (Khan *et al.* 2009). Despite India's technology outsourcing power, internet penetration rate remains well below five percent (Khan *et al.* 2009). In India, 1.6 percent of commercial banks and 48 percent of public sector banks provide internet banking services (Rao & Prathima 2003). Also, the theoretical analysis provided by Rao & Prathima (2003) illustrated that, in comparison with the banks operating abroad, Indian banks have a long way to go regarding their online service offering. Malhotra & Singh (2007) noted that only 48 percent of the commercial banks operating in India offered internet banking at the end of 2005 and that foreign and private sector banks offer a wide range of services over the internet. In Japan, however, internet banking is commonplace. In 2000, Japan Net was the first virtual bank without a physical branch. In 2001, Sony Bank, a second online bank, was started by Sony, an electronic giant (Pyun *et al.* 2002). Japan has been a world leader when it comes to mobile payments. Consumers also readily access banking services through the dominant mobile technology in Japan, iMode (a browser-based user experience) (Mia *et al.* 2007). Mobile phone usage in India and China is gaining momentum with nearly 200 000 connections every day. The Industrial Credit and Investment Corporation of India (ICICI), India's second largest bank, provides its customers with a broad range of SMS transactions including bill payments, branch finder and bill view, in addition to balance enquiries and recent transactions (Straeel 1995).

Electronic banking services have been implemented by banks in Thailand since 1990. The Thai Farmer Bank (TFB), the Siam Commercial Bank (SCB), the Krung Thai Bank (KTB) and the Bank of Asia (BOA) were the first to initiate and extend internet banking services, which have been available since 1995 (Hamid *et al.* 2007). The Asian

recession in 1997 forced several Thai banks to merge with foreign ownership banks (BOT 2003). The current situation indicates that there are sixteen out of thirty-four commercial bank institutions in Thailand offering internet banking services. Among these sixteen commercial banks, eleven are local banks and five are foreign banks. Commercial banks in Thailand have allowed internet banking transactions since 2000 (Chudrasi 2002; Boonruang 2000).

ATMs and credit cards were introduced in Pakistan in the mid 1990s by foreign banks. Domestic banks followed the foreign banks and introduced electronic banking channels in the late 1990s. This delayed entry is attributed to regulatory hurdles, high start-up costs, on-going banking sector reforms and a lack of technical skills. The government of Pakistan promoted electronic banking with the promulgation of the electronic transaction ordinance in 2002 (Kaleem & Ahmad 2008). Table 2.5 depicts recent internet banking studies conducted in the Asian context and the findings obtained will be synthesised further.

Table 2.5: Existing Internet Banking Studies in Asia

Researchers	Study	Country
Khan <i>et al.</i> (2009)	Service quality evaluation in internet banking: An empirical study in India	India
Malhotra & Singh (2007)	Determinants of internet banking adoption by banks in India	India
Ravi <i>et al.</i> (2007)	Profiling of internet banking users in India using intelligent techniques	India
Sakkthivel (2006)	Impact of demographics on the consumption of different services online in India	India
Rao & Prathima (2003)	Internet banking in India	India
Gerrard & Cunningham (2003)	The diffusion of internet banking among Singapore consumers	Singapore
Rotchanakitumnuai & Speece (2003)	Barriers to internet banking adoption: A qualitative study among corporate customers in Thailand	Thailand
Suganthi <i>et al.</i> (2001)	Internet banking patronage: An empirical investigation in Malaysia	Malaysia
Gupta (1999)	Internet banking: Where does India stand?	India

2.4.6 Technological Evolution of Internet Banking in Australia and New Zealand

The Market Intelligence Strategy Centre (MISC) reported that over 7.2 million customers accessed 27 million accounts online in Australia (Sathye 1999). Among users, women in particular are becoming increasingly attracted to internet banking services and baby boomers are considered to be the fastest growing segment. Banks consider that the number of active users and an increase in the number of online transactions are the factors that determine the performance of the online banking channel rather than the number of new registrations. A higher interest rate for online savings accounts motivated users to perform internet banking transactions and was also driving the major banks to offer similar products (ABA 2000). Consumers in New Zealand are accustomed to using safe and secure electronic information and money transfer systems (Chung & Paynter 2001). The Auckland Savings Bank (ASB) was the first bank to offer internet banking services in New Zealand in 1996, followed by the ASB subsidiary and Bank Direct (Parker 1999). Later, in 1999, the National Bank of New Zealand (NBNZ) and the Bank of New Zealand offered internet banking services. It has been reported that, during the last quarter of 2001, there were approximately 480 000 internet banking users (Taylor 2002). The lack of charges for using internet service channels became an attractive option for consumers wanting to utilise internet banking services (Gan *et al.* 2006).

Consumers in New Zealand are reluctant to use online purchasing compared to consumers in the USA and Europe (Straeel 1995). Although internet penetration and usage has reached a significant level, the use of internet banking services is still the lowest amongst all the banking facilities in New Zealand (Chung & Paynter 2001). BPAY in Australia has allowed customers to perform phone banking since 1997 (Beatty 1998). In Australia, the Bank of Queensland and Credit Union Australia have deployed a comprehensive set of SMS banking services. In New Zealand retail banks have taken the lead with regard to mobile banking with all New Zealand retail banks now offer mobile banking services, and two of the major banks, ANZ and National Bank, have made sophisticated mobile banking and payment services available to customers via mobile Java applets (Luarn & Lin 2004). Table 2.6 presents recent internet banking-based research conducted in Australia and New Zealand and the findings obtained will be discussed in detail in further sections.

Table 2.6: Existing Internet Banking Studies in Australia and New Zealand

Researchers	Study	Country
Gan <i>et al.</i> (2006)	A logit analysis of electronic banking in New Zealand	New Zealand
Thornton & White (2001)	Customer orientations and usage of financial distribution channels	Australia
Sathye (1999)	Adoption of internet banking by Australian consumers: An empirical investigation	Australia

2.5 ISSUES, CONTROVERSIES AND PROBLEMS

There are several benefits associated with the introduction of internet banking and these benefits might vary depending upon various perspectives. From the bank's perspective, the provision of the internet banking service delivery channel to consumers would enhance their opportunity to maximise their profits by a significant reduction in the costs associated with human resources in the bank branches. The chief goal of many businesses in monetary terms is associated with profit maximisation (Nathan 1999). Moreover, from the bank's point of view, the proliferation of the banking service delivery channels is essential, not only in terms of cost saving by reducing human resources, but also by improving competitiveness by way of differentiation, retaining the existing customer base, and attracting potential customers. Banks throughout the world face an increasingly tough challenge of boosting their revenues while controlling their costs (Durkin 2004). Therefore the common trend followed by many banks globally is streamlining their branch networks and redirecting their consumers to alternative service delivery channels and encouraging consumers to adopt self-service technologies. Thus, banks are reducing the costs incurred in maintaining the branch staff (Pyun *et al.* 2002; Pastore 2001). Also, banks often build a better brand image by way of responding to rapid market changes and would, therefore, be perceived as leaders in the adoption of innovative technologies (Durkin 2004).

From the consumer's point of view, automation of banking services by introducing electronic banking service delivery channels provides 24 hour accessibility, reduced costs in accessing and using banking products and services, proper cash management, reduced time demands, increased comfort as well as quick and continuous access to bank information (Aladwani 2001). Existing studies report that consumers, by way of utilising proliferated banking service delivery channels, can manage funds in a better manner. The majority of the consumers are happy with the speed and convenience

associated with the internet banking (Gurau 2002). Electronic banking eliminates uncertainties by standardising services and reduces the prevalent heterogeneity that might commonly exist between bank staff and consumers.

From an economic perspective, some studies in Estonia indicate that using advanced banking facilities increases the overall savings to the economy by 0.93 percent of the gross domestic product (Aarma & Vensel 2001). Unlike the USA, there has been no acceleration in the trend rate of labour productivity in Finland, though the growth of output in the Finnish market sector has increased from 0.3 percent in the early 1990s to 0.7 percent in the late 1990s due to the use of information and communication technologies (Pohjola 2002). Thus some studies indicate a significant contribution to the economy with regard to the evolution of service delivery channels in the retail banking context.

2.6 SIGNIFICANCE OF GLOBAL INTERNET BANKING TRENDS

The previous discussion shows that there are concerns and challenges for the banks as well as the consumers with regard to the uptake and use of technological advancements in banking. Due to the relative newness of the technology associated with internet banking, banks as well as consumers are often concerned about the security of internet access to client's accounts (Stamoulis 2000). Furthermore, research has indicated that the acceptance of internet banking by consumers is affected by perceived security (Dourish & Redmiles 2002). Banks, in order to maintain their competitive advantage, mimic new channel approaches quickly as product differentiation is very difficult for banks (Nemzow 1999). As many countries have deregulated their banking sector, government policies no longer form an entry barrier to the bank's competitors and technology know-how also provides only low protection to existing banks (Mia *et al.* 2007). Typical attributes of an oligopoly market such as risk avoidance and undifferentiated customer service made the banking sector susceptible to encroachment by software giants attempting to replace banks as intermediaries (Kalakota & Frei 1998). Moreover, the threat of substitutes to banking in terms of competition from the non-banking, financial and micro credit sector is increasing rapidly (Mia *et al.* 2007). The competition is fierce in the banking and financial sector environment as every entrant is participating to some extent by introducing technologically advanced banking channels

for service delivery, which raises the issues of security, privacy and risk (Constantine 2000).

It is evident from the discussion so far that the new generation of internet banking transactions has created a bundle of opportunities as well as challenges to the existing banks, financial institutions and consumers. The existing research shows that almost all the major banks, irrespective of the level of a country's advancement, have rapidly introduced innovative internet banking technologies to improve their business models. However, the rate of internet banking adoption by consumers in developed nations took comparatively more time due to the development of the technology infrastructure and the ambiguity experienced by consumers about innovative technologies. Thus, it is clear that, in newly industrialised nations, internet banking is gaining its momentum as the banks operating globally have declared electronic banking as one of the core strategies for future development. Also, findings from the document analysis reveal that there is a phenomenal uptake of internet banking service delivery channel by consumers globally. Therefore, in many countries, internet banking is a mature market as consumers have already accepted and started using it on a regular basis. Now, the challenge ahead for the bank management is how to retain the existing customer base, encourage customers to use internet banking on a continued basis and further increase their frequency of usage. From an economic perspective, uptake of internet banking on a continued and frequent basis essentially maximises profits for the banks. From a marketing perspective, in order to motivate customers to continue to use internet banking frequently, banks should continuously strive to meet the consumer's expectations, demands and requirements. Therefore, there exists a heightened need for research that investigates potential factors that influence a customer's post-adoption use of internet banking. Thus, the remainder of this literature review chapter focuses on various theoretical models of importance to the study and identifies the potential factors that impact on consumers' continued and frequent use of internet banking.

2.7 THEORETICAL MODELS ON THE ACCEPTANCE OF TECHNOLOGY

Several businesses are utilising innovative technological advancements in order to make their services more accessible to consumers as well as to improve their business performance and increase their productivity (Winch & Joyce 2006; Reid 2008). However, the correlation between technological advancements and increase in business productivity

is feasible only if they are accepted by the intended users (Venkatesh *et al.* 2003). The objective of most research on internet banking has been to analyse the process of acceptance, intention to adopt or adoption of the new service delivery channel and compare it with the other service delivery channels offered by banks (Yousafzai *et al.* 2005). Nevertheless, in recent years internet banking has shown increasing uptake by consumers and there are more and more consumers who have carried out internet banking transactions several times. This, together with the fact that when consumers have experience with internet banking their behaviour is modified, which produces a change in their initial perceptions about internet banking. Such a change in consumer behaviour makes it necessary to study not only the pre-adoption behaviour of consumers, as in previous research, but also the post-adoption behaviour towards internet banking (Vijayasarathy 2004; Hernandez *et al.* 2008). Therefore, the objective of the present study is to analyse the post-adoption behaviour of experienced internet banking users employing a dual perspective: firstly, what factors influence consumers to continue to use internet banking and, secondly, what factors affect how often consumers use internet banking. Towards the end of this chapter, a conceptual model will be formulated which applies metrics that have proven consistent and robust in previous studies and broadens them through the inclusion of potential factors that act as antecedents to the usage behaviour of consumers towards internet banking.

Thus, from the existing research, possible theoretical models that provide a comprehensive understanding of user acceptance of innovations come from disciplines such as information systems, psychology and sociology. The present study proposes the application of two main theoretical models that of an integrated technology model of consumer adoption and diffusion of innovations model, in order to explain the factors that might have a significant impact on the usage patterns of internet banking by consumers in Australia.

Four theories are discussed in detail which might explain the perceptions consumers have towards their use of internet banking. The theories that are reviewed include:

- (1) Theory of Reasoned Action (TRA) predicts the determinants of intended behaviour of individuals (Fishbein & Ajzen 1975).
- (2) Theory of Planned Behaviour (TPB) is an extension of TRA by the addition of perceived behavioural control (Ajzen 1985).

- (3) Technology Acceptance Model (TAM) determines the adoption and usage patterns with regard to the general acceptance of the technology (Davis 1989).
- (4) Diffusion of Innovations (DOI) proposes factors that facilitate the decision to adopt an innovation (Rogers 1995).

The Theory of Reasoned Action (TRA) is a widely validated intention model and has been proved to be successful in predicting and explaining behaviour across a wide variety of domains (Fishbein & Ajzen 1975). Due to its limitation in terms of volitional control, the additional construct of perceived behavioural control, which predicts behavioural intentions and behaviour, has been included and the extended model is known as the Theory of Planned Behaviour (TPB) (Ajzen 1985). Studies conducted by Mathieson (1991); Taylor & Todd (1995) and Venkatesh *et al.* (2000) provide valid empirical support to these two theories for studying the determinants of information technology usage behaviour.

2.7.1 Theory of Reasoned Action (TRA)

The theoretical foundation for identifying the dimensions of user behaviour stem from intention models in social psychology (Swanson 1982). In predicting and explaining behaviour across a wide variety of domains, TRA is a widely validated intention model (Fishbein & Ajzen 1975). TRA has been applied to explain behaviour related to the acceptance of technology and includes the four general concepts of behavioural attitudes, subjective norms, intention to use and actual use. Individuals in general evaluate the consequences of a particular behaviour and develop intentions to act that are consistent with their evaluations. More specifically, TRA states that an individual's behaviour is predicated on their attitudes and subjective norms. Attitudes can be predicted from an individual's beliefs about the consequences of their behaviour. Attitude is defined as an individual's positive or negative feelings about performing a specific behaviour and is determined by one's beliefs that the behaviour would lead to various consequences multiplied by the subjective evaluation of those consequences (Davis *et al.* 1989). A consumer's subjective norms can be predicted from the beliefs they generate about what others think (Fishbein & Ajzen 1975). The effect of subjective norms on behavioural intention is that an individual may choose to perform a specific behaviour if it is acceptable to others who are important to the individual, even though such behaviour may not be good for the individual (Venkatesh & Davis 2000). The TRA model emphasises the fact that behavioural intention is the only antecedent of actual behaviour. Bagozzi

(1982) praises the TRA model because it is intuitive, parsimonious and insightful in its ability to explain behaviour from a theoretical perspective. A schematic representation of the TRA model is presented in Figure 2.1.

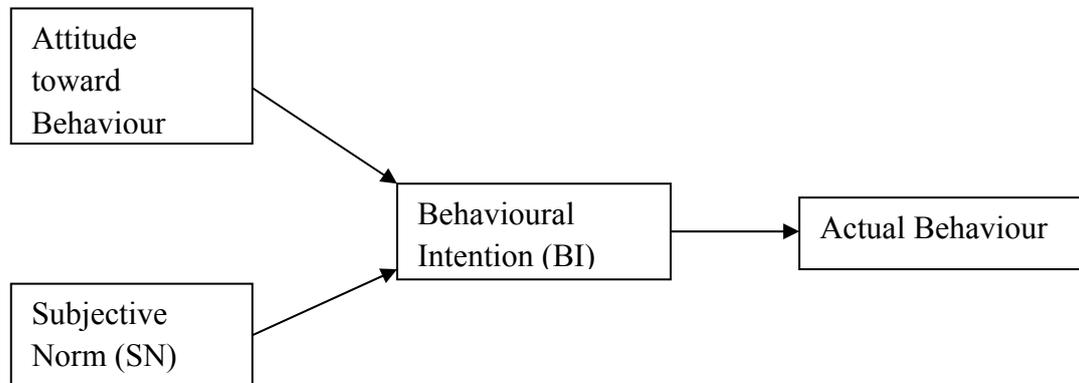


Figure 2.1: The Theory of Reasoned Action (Fishbein & Ajzen 1975)

2.7.1.1 Criticism and Applicability of TRA

Davis *et al.* (1989) reported that TRA is a general model and is not able to specify the beliefs that are responsible for a particular behaviour. Also, TRA deals with the prediction of behaviour rather than the actual outcome of the behaviour (Szmigin & Foxall 1998). As per the TRA model, behaviour is determined by the behavioural intention which limits the predictability of the model to situations where intention and behaviour are highly correlated. Moreover, according to TRA, behaviour must be under the volitional control of the consumer and is not suitable to predict situations in which individuals have low levels of volitional control (Ajzen 1991).

To predict the performance of behaviour and intentions TRA has been applied to a large number of situations successfully and has been used extensively in marketing research (Prestholdt *et al.* 1987; Timko 1987). However, the predictability of TRA becomes problematic if the behaviour under study is not under full volitional control. Therefore, the TRA model has been extended by including another construct called perceived behavioural control which predicts both behavioural intention and behaviour. This extended model is called the Theory of Planned Behaviour (TPB).

2.7.2 Theory of Planned Behaviour (TPB)

The TRA model is the predecessor to TPB. TPB has the added construct of perceived behavioural control (PBC) to the antecedents identified by the TRA (Ajzen

1991). Thus the construct of behavioural intention is formed by one's attitude, which is a combination of the social norm and the perceived behavioural control. Such a model is an improvement on TRA because it reflects perceptions of both internal and external constraints on behaviour simultaneously. Perceived behavioural control is defined as one's perception of the difficulty of performing a particular behaviour. By including PBC, the TPB model accounted for more variance in intention (44.50%) than the TRA model (37.27%) (Hagger *et al.* 2002; Ajzen & Madden 1986). Figure 2.2 depicts a schematic representation of the TPB model.

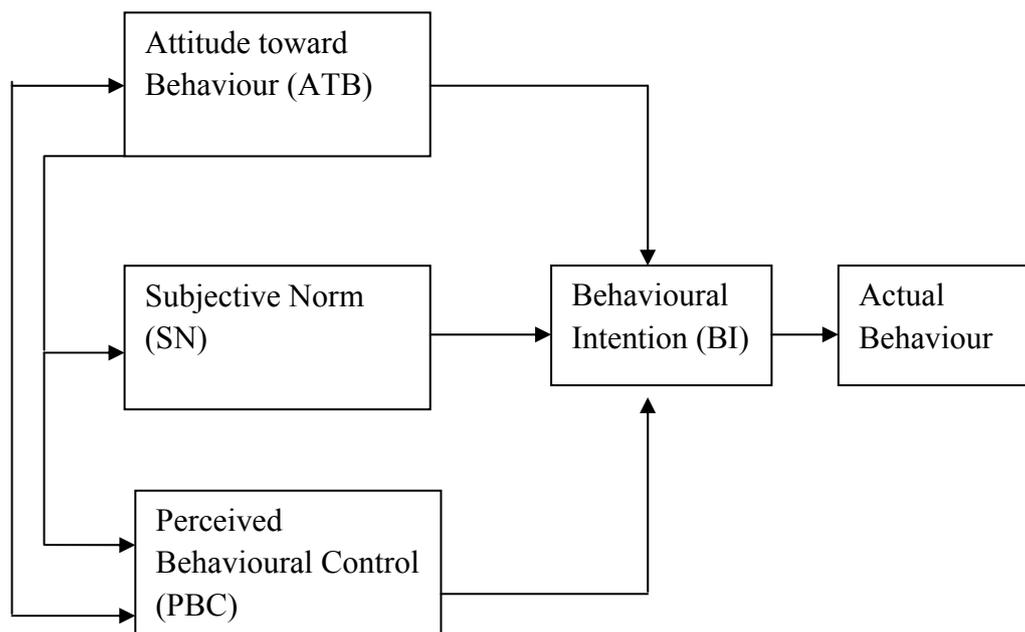


Figure 2.2: The Theory of Planned Behaviour (Ajzen 1985, 1991)

Liao *et al.* (2000) empirically supported the effect of perceived behavioural control. However, the exact nature of the relationships between attitudes, subjective norm and perceived behavioural control were still unclear. Conceptualisation of PBC has been controversial and measurement of salient beliefs underlying the model remains a problem, thus making it difficult to operationalise the TPB model (Kraft *et al.* 2005). Moreover, the model suggests that behavioural intention is an antecedent to the actual behaviour that is predicting consumers, adoption behaviour.

An extension to the TPB model is the model of goal-directed behaviour (Perugini & Bagozzi 2001). The aforementioned model differs from the TPB by introducing emotions into traditional attitudinal explanations of goal-directed behaviour through positive and negative emotions and accounting for motivation through the capture of

desires as part of the model. Behavioural intentions to perform instrumental behaviours are primarily motivated by desires to perform the acts. In turn, desires mediate the effects of attitudes, subjective norms, perceived control, and anticipated emotions on intentions.

2.7.2.1 Criticism and Applicability of TPB

Similar to TRA, TPB also assumes proximity between intention and behaviour. Thus TPB also emphasises behavioural intention as an antecedent to actual behaviour (Szmigin & Foxall 1998). Only one exogenous variable, that of perceived behavioural control, is introduced in the model where evidence suggests that other factors such as personal norms and affective evaluations significantly add to the models predictive power (Manstead & Parker 1995). Also existing studies indicate a problem with measuring the perceived behavioural control construct as existing studies indicated the complexity associated with the conceptualisation of the perceived behavioural construct (Manstead & Parker 1995). TPB has been used in the past studies predicting consumers' internet purchasing behaviour related either to their pre-adoption or adoption behaviour (George 2004; Cho & Hwang 2001). Similarly, model of goal-directed behaviour focus more on the aspects of the emotions, desires and consumer behavioural intentions which are of little relevance in the present study.

2.7.2.2 Comparison of TPB and TRA

The similarities between TRA and TPB are that both models stress that behavioural intention is an antecedent to the actual behaviour, and they assume that human beings are indeed rational and make use of the information available to them systematically during the decision-making process. However, by considering the control-related variable, TRA assumes that the behaviour being studied is under total volitional control of the performer (Madden *et al.* 1992). On the contrast, TPB when compared to TRA extends to more goal-directed actions.

The main difference between TRA and TPB is that TPB has an additional exogenous variable, perceived behavioural control that has both a direct and indirect effect on actual behaviour through intention. The indirect effect of perceived behavioural control on actual behaviour through intentions is based on the assumption that perceived behavioural control has motivational implications for behavioural intentions. The direct effect is assumed to reflect the actual control an individual has over performing the behaviour (Ajzen 1985).

However, with regard to TRA, the relative importance of behavioural intention predictors varies with the behavioural domain. In certain applications, it may be found that only the attitude toward the behaviour has a significant impact on behavioural intention, in others, both attitude toward the behaviour and perceived behavioural control may be significant and, in still others, the attitude toward the behaviour, subjective norms and perceived behavioural control may predict the behavioural intention (Ajzen 1985). The ability of perceived behavioural control and behavioural intention to predict actual behaviour varies across behaviours and situations. Furthermore, several researchers claimed that TPB has a better prediction power of behaviour than TRA because it is so contextually grounded (Madden *et al.* 1992; Cheung *et al.* 2003).

2.7.3 Decomposed TPB (DTPB)

The decomposed TPB model proposed by Taylor & Todd (1995) is an alternative version of the TPB model with decomposed belief structures. In this model, attitudinal, normative and control beliefs are decomposed into multidimensional belief constructs. The decomposed TPB model produced mixed responses from researchers. The model is considered more complex by some researchers as it included a large number of factors (Hsu & Chiu 2004); on the other hand, it is often considered as more useful than other models and is supported by some researchers (Ok & Shon 2006; Jaruwachirathanakul & Fink 2005).

Thus, TRA, TPB and DTPB models discussed so far, are focused to measure either consumers' behavioural intention to adopt or their adoption. The variables included in the aforementioned models, thus mainly emphasise on consumers' pre-adoption and adoption behaviour. These models are not used in the present research as the applicability of these models in predicting consumers' post-adoption behaviour is a questionable issue.

2.7.4 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) has been developed with an objective of providing a better understanding of the determinants of user behaviour across a broad range of end-user technologies, thus offering both parsimonious and theoretical justifications (Davis 1986). The main purpose of TAM is to provide a basis for identifying the impact of external factors on internal beliefs, attitudes and intentions. Thus TAM posits that the actual usage of technology can be predicted by a user's behavioural intention and attitude towards use which in turn are influenced by the perceived

usefulness and perceived ease of using a particular technology. The schematic representation of the TAM model is presented in Figure 2.3.

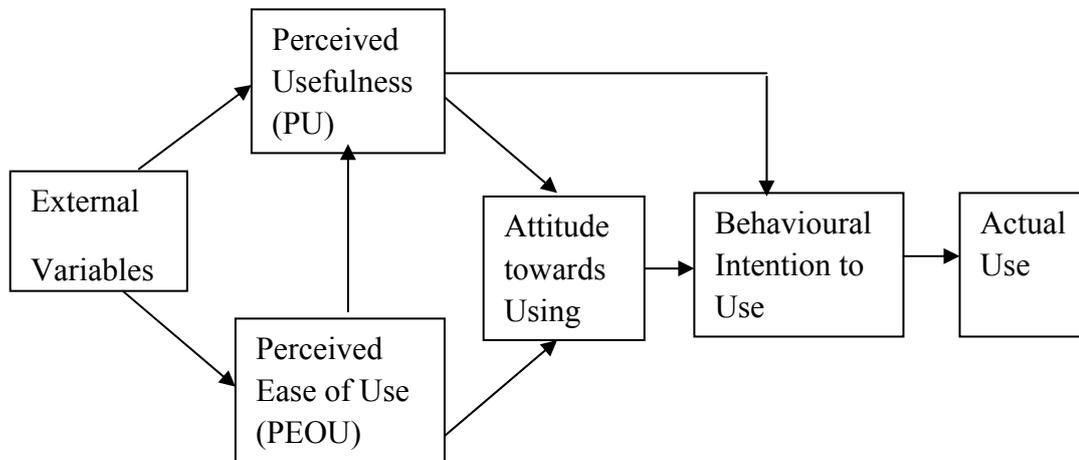


Figure 2.3: The Technology Acceptance Model (Davis 1989)

Perceived usefulness is defined as ‘the degree to which using a particular system enhances the performance of the user’ (Davis *et al.* 1989, p.89). On the other hand, perceived ease of use is defined as ‘the degree to which using a particular system would be free of effort’ (Davis *et al.* 1989, p.90). Attitude formation triggers the behavioural intention to use. Attitude is defined as a positive or negative consequence towards an intended behaviour. Often, the intention to use is the sole determinant of actual behaviour.

2.7.4.1 Criticism and Applicability of TAM

Subjective and objective measures of TAM exhibited little similarity. The correlation between the subjective measures and intention is relatively high when compared to actual usage, thus questioning its validity (Szajna 1996; Straub *et al.* 2004). Critiques argue that TAM does not consistently explain more than 40 percent of the system’s use, except those where subjects of studies are students (Legris *et al.* 2003; Wang *et al.* 2003). Moreover, TAM focuses only on the determinants of intention such as perceived usefulness and perceived ease of use and does not provide valid reasons as how consumers’ perceptions towards acceptance and usage are actually formed. Al-Sukkar & Hassan (2005) have shown that the TAM model ignores external and situational influences. Also Kim & Malhotra (2005) reported that TAM led to the misunderstanding of the actual processes involved in influencing a consumer’s decision to use a product or service on a continued basis. Furthermore, Bagozzi (2007) noted that there exists minimal

evidence in the existing research focusing on either reconceptualisation of existing variables or introduction of new variables in the TAM model.

There are a wider array of studies which used the TAM model for predicting the acceptance and use of information systems (Cheng *et al.* 2006). In the past decade, TAM has been established as a robust, powerful and parsimonious model for predicting behavioural intention to use. A significant body of research supports the role of perceived usefulness as a strong factor that influences user intention behaviour over a period of time (Venkatesh & Davis 1996; Taylor & Todd 1995). Chau (1996) studied the impact of perceived near-term and perceived long-term usefulness and its subsequent influence on behavioural intention to use a particular technology. However, the role of perceived ease of use in the TAM has been reported differently in previous studies (Gefen & Straub 2003).

Perceived ease of use often deals with the motivation that is based on the assessment of ease of use and ease of learning (Luarn & Lin 2004). Vijayasarathy (2004) has reported that the two measures ‘perceived usefulness’ and ‘perceived ease of use’ significantly determine the adoption of online banking. Results obtained from statistical meta-analysis of TAM, as applied in eighty-eight published studies, indicated that TAM is a highly reliable, valid and robust predictive model that may be used in a variety of contexts (King & He 2006). The TAM model was successfully used to evaluate a user’s perception towards online electronic payments in Greece (Rigopoulos & Askounis 2007). Furthermore, existing studies highlighted the need for inclusion of the additional variables in order to explain variances in behavioural intention and subsequent actual usage, apart from the existing fundamental variables in the TAM model (Luarn & Lin 2004; Wang *et al.* 2003). External variables may also be added to TAM as a way of improving the model’s predictive power (Al-Sukkar & Hassan 2005; Chau & Hu 2001).

2.7.4.2 Comparison of TAM and TPB

When comparing TAM with TPB, three major differences arise pertaining to degrees of generality, social influences and perceived behavioural control. Perceived use and perceived ease of use are the primary determinants and are assumed to be central to an individual’s decision to adopt or use internet banking (Davis *et al.* 1989). In contrast to this, TPB assumes that the user’s beliefs are specific to each situation and cannot be generalised across situations. In particular, it requires the development of instruments for

different user groups (Mathieson *et al.* 2001). With regard to TPB, a pilot study is essential in order to identify relevant outcomes, reference groups and control variables in every context in which it is used, whereas TAM's constructs are equally applicable in any study. TAM provides predictive information but does not provide sufficient information with regard to the acceptance of a new system and explicitly does not include any social variables (Mathieson 1991).

Another major difference pertains to the treatment of the behavioural control variable referring to the skills, opportunities and resources essential to use a particular technology. TAM has only one variable, 'perceived ease of use', which refers to the user's capabilities and skills and is similar to the internal control factors defined by Ajzen (1985). TPB taps into the important control variables for each situation independently and is more likely to capture situation specific factors. In summary, TAM is information system specific, while TPB is not. Mathieson (1991) compared TAM with TPB and found that TAM is a slightly better predictor of intention, whereas TPB exhibited better explanatory power due to specific beliefs.

TAM model indicates the application of relevant external variables in studying consumers' post-adoption behaviour as well as increase the model's predictive power. Thus, applicability of TAMs constructs in predicting consumers' post-adoption behaviour is of an interest in the present research.

2.7.5 Extension of TAM (TAM2)

A study of the adoption of tele-medicine technology by physicians using TAM has found a relatively low explanatory power of TAM's fundamental constructs (Hu *et al.* 1999). Therefore, an attempt has been made by researchers to integrate TAM with other additional factors that could help to improve the specificity and utility of the proposed model. Researchers tried to examine the possible antecedents of perceived usefulness and perceived ease of use constructs toward microcomputer usage (Igbaria *et al.* 1995). One major criticism of the current TAM studies is that there are very few investigations that can identify the external variables that affect perceived usefulness and perceived ease of use (Gefen & Keil 1998). In order to address this problem, the TAM model was extended to investigate the determinants of perceived ease of use. Computer self-efficacy of the adopter was found to significantly affect 'perceived ease of use' at all times throughout the study (Venkatesh & Davis 1996).

Later the TAM2 model was developed to include a number of determinants of the perceived usefulness construct. The diagrammatic representation of TAM2 is depicted in Figure 2.4. It is a theoretical extension of the technology acceptance model that explains perceived usefulness and usage intentions in terms of social influence processes such as subjective norms, voluntariness and image, and cognitive instrumental processes such as job relevance, output quality, result demonstrability and perceived ease of use (Igbaria *et al.* 1995). Longitudinal data were collected from four different organisations that spanned a range of industries, organisational contexts, functional areas and types of systems being used. The results indicated that all the abovementioned social influences and cognitive instrumental processes significantly influenced user acceptance of the systems.

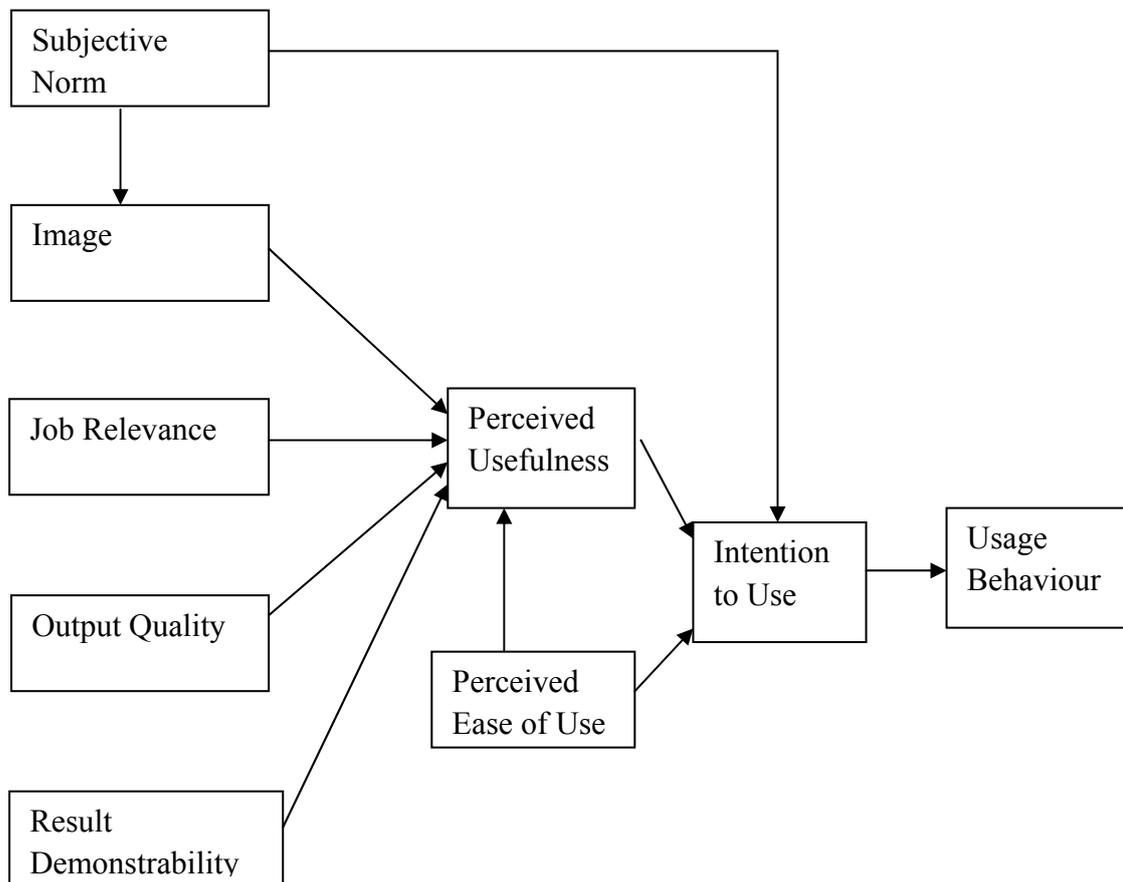


Figure 2.4: Extension of Technology Acceptance Model

Lallmahamood (2007) added perceived security and perceived privacy variables to TAM and showed that both variables significantly affect a consumer's intention to use e-commerce in Malaysia. The perceived risk construct has also been included widely in

the extension of the technology acceptance model later by many researchers (Featherman & Pavlou 2002; Kanungo & Jain 2004).

2.7.6 Diffusion of Innovations Theory (DOI)

An innovation is a new concept, object, technology or system presented to a target audience for adoption. The form of an innovation may vary depending upon the product, service, process or management system under consideration (Lorente *et al.* 1999), and the success of an innovation is based on the competitive advantage, profit maximisation, cost reduction and organisation's strategic position (Johansen *et al.* 1999). Diffusion of innovations (DOI) theory emerged from sociology and has been used since the 1960s. Since its emergence, the theory has been used widely to study a variety of innovations ranging from agricultural tools to organisation innovations (Venkatesh *et al.* 2003; Tornatzky & Klein 1982). DOI is the concept that explains how diffusion of innovations takes place in a social system (Rogers 1995). According to DOI theory, individuals develop certain perceptions towards an innovation and, based on these perceptions, an individual makes a decision whether to accept or reject an innovation (Agarwal & Prasad 1997; Moore & Benbasat 1991). An innovation is more likely to be adopted based on the innovation characteristics of relative advantage, compatibility, complexity, trialability and observability which are critical for potential adopters' perceptions (Rogers 1995). Moore & Benbasat (1996) refined a set of constructs that represents characteristics of innovations that are present in innovation diffusion theory. These constructs of relative advantage, compatibility, complexity, trialability and observability, are widely used to predict an individual's technology acceptance (Plouffe *et al.* 2001; Karahanna *et al.* 1999; Agarwal & Prasad 1998; Moore & Benbasat 1991).

2.7.6.1 Comparison of DOI and TAM

One common theme for both TAM and DOI is with individuals' perceptions of innovation characteristics that influence their acceptance behaviour. However, all the four major theories discussed so far have different conceptualisations of those perceptions. TAM includes two perceptions, TRA and TPB recommend that beliefs need to be elicited from target users and could be different for each innovation, and DOI posits five perceived characteristics of an innovation that affect adoption behaviour (Agarwal & Prasad 1997; Rogers 1995). Although both TAM and DOI focus on usage as the primary outcome of the adoption process, DOI has gone further than this by explaining various

types of usage such as initial and continual usage (Rogers 1995). TAM has been the most widely studied model in the user technology acceptance field and both the constructs 'perceived usefulness' and 'perceived ease of use' are empirically tested and found consistent. In comparison, most of the studies on DOI have found only a few constructs of relative advantage, compatibility and trialability, are consistently related to adoption behaviour (Agarwal & Prasad 1998; Taylor & Todd 1995).

2.7.7 Extension of DOI

The DOI model has been refined to develop an instrument that can be used across a variety of innovation domains related to technology (Moore & Benbasat 1991). The developed model is intended to tap a variety of perceptions related to innovations. Two new constructs, 'image' and 'voluntariness', were added. Image is the degree to which an individual believes that the adoption of a technology enhances their prestige in the community and voluntariness is the degree to which an innovation adoption is perceived to be under the adopter's control (Moore & Benbasat 1991). The extended model received very little empirical attention with all of its constructs (Agarwal & Prasad 1998; Plouffe *et al.* 2001). Relative advantage, visibility, compatibility, trialability and result demonstrability were identified as significant predictors of intention to adopt an innovation (Agarwal & Prasad 1997). Whereas Tan & Teo (2000) found relative advantage, complexity, compatibility and trialability, Chin & Gopal (1995) found compatibility, Karahanna *et al.* (1999) found voluntariness, Taylor & Todd (1995) found relative advantage and ease of use and Chan & Lu (2004) identified image and result demonstrability as significant in affecting an individual's intention to adopt an innovation. From a meta-analysis of innovation adoption studies, relative advantage, compatibility and complexity were identified as being consistently related to adoption of innovations (Tornatzky & Klein 1982).

Thus, the behavioural intention models and diffusion of innovations model discussed so far, outline the relative importance and significance of the various constructs included in the aforementioned models and their predictive ability of the consumers' pre-adoption, adoption and post-adoption behaviour. TRA and TPB models, to a larger extent in the existing research are used to predict either consumers' pre-adoption or adoption behaviour. The TAM and DOI models indicate their predictive power to assess consumers' post-adoption behaviour. The following section relates to the consumer decision-making process and post-adoption behaviour.

2.7.8 Consumer Decision-making Process and Post-adoption Behaviour for Internet Banking Services

The consumer decision-making process is important in examining consumer purchasing behaviour towards products and services (Engel *et al.* 1973). The decision-making process consists of five stages: problem recognition, information search, evaluation of alternatives, choice and outcome. The abovementioned framework suggests that the process can be applied to a whole range of consumer decisions (Block & Roering 1976; Engel *et al.* 1973). Literature suggests that, in order to redefine the initial problem, search for new information or re-evaluates their decisions, consumers may regress to a preceding stage of the problem solving process (Assael 1981). Changes in a consumer's desired and actual state may prompt them to discontinue the problem solving process at any stage of their decision-making. Intervention of environmental and physical factors may impede the progress of consumers through various decision-making stages (Gan *et al.* 2005). Most existing literature on consumer decision-making focuses on the decision-making process and its applicability in the purchase of products.

It is only quite recently that Zeithaml & Bitner (2003) have applied the consumer decision-making process to services and reported the presence of five stages such as need recognition, information search, evaluation of alternatives, purchases and consumption, and post-purchase evaluation. Also Zeithaml & Bitner (2003) suggested that the sequence of the five stages in the context of services may not be linear, because the type of situation and context play a dominant role in influencing a consumer's decision to evaluate services (Zeithaml & Bitner 2003).

Recent research suggests that consumers pass through three critical stages during their purchasing process: pre-purchase, purchase and post-purchase (Frambach *et al.* 2007). Consumers at the pre-purchase stage seek information on the relevant attributes of the product or service that they are considering for purchasing (Payne *et al.* 1993). This stage is also associated with a specific distribution channel's ability to enable consumers to identify and obtain access to product or service information (Peterson & Merino 2003). A comparison of the information available about a product or service facilitates a consumer's evaluation of various alternatives. Researchers have shown that consumers prefer internet channels when retrieving information about complex services (Shankar *et al.* 2003). A consumer then shifts from an attribute-based search to an alternatives-based search as he/she progresses in the decision-making process (Huneke *et al.* 2004).

The evaluation of the alternatives stage, by comparison, is mostly evident as consumers move on to the actual purchase stage and the congruency between the distribution channel and the product or service becomes critical at this stage (Xia & Sudharshan 2002). Consumers may use the product or service continuously and frequently in the post-purchase stage (Frambach *et al.* 2007). Often, as they go through these buying stages, consumers shift between online and offline distribution channels based on the complex nature of the product or service under consideration (Ahuja *et al.* 2003). Previous internet banking research focused heavily on either pre-purchase or purchase stages of consumers' adoption, intention to adopt and their preferences (Neslin *et al.* 2006). In the New Zealand context, Gan *et al.* (2006) researched service quality dimensions, service product characteristics, demographic characteristics, perceived risk, user input, price and individual factors in the consumer decision-making process, specifically in electronic banking and consumption. They found that service quality and user input factors affect electronic banking adoption (Gan *et al.* 2006). Frambach *et al.* (2007) investigated consumer preference for online and offline purchasing of a complex service, such as choosing a home mortgage, across pre-purchase, purchase and post-purchase stages of purchasing. Frambach *et al.* (2007) indicated that the offline channel is preferred over online channels across all three purchasing stages of the decision-making for home mortgages.

Pre-purchase, purchase and post-purchase stages mentioned by Frambach *et al.* (2007) could be successfully related to consumers' pre-adoption, adoption and post-adoption behaviour. Post-adoption behaviour, thus, predominantly focuses on drivers of users' continued use after initial adoption. Thus, post-adoption continuance was viewed largely as an extension of initial adoption by Kim *et al.* (2006) and Kim & Kim (2003). However, other researchers viewed post-adoption use as an independent issue rather than a mere continuance of the consumer's initial decision to adopt (Karahanna *et al.* 1999; Ye *et al.* 2008). Thus the present study focuses mainly on the consumer's post-adoption behaviour with a specific emphasis on the potential drivers to continue to use and how frequently they use internet banking.

2.8 ASSESSMENT OF THE THEORIES

According to Bagozzi (2007) the TRA, TPB and TAM models all seem to neglect group, social and cultural aspects of the consumer decision-making process. He criticises

these models heavily as they rely to on naïve and simplified notions of human emotions. Mostly these models depend on a purely deterministic framework and often self-regulation processes are not taken into consideration. The models also attempt to evaluate the consumers' post-purchase decision-making process; however, in reality, these theories rely on consumers' perceptions of innovation characteristics as a significant predictor of behavioural intention. Thus TAM identifies 'perceived usefulness' and 'perceived ease of use' and DOI and DTPB 'relative advantage', 'compatibility', 'complexity', 'trialability' and 'observability' as predictors of consumers' behavioural intention and actual usage patterns. Later some researchers introduced individual characteristics into DOI and TPB models. Also, the social factor component, the subjective norm, is included by other researchers in TRA, TPB, DTPB and DOI models to predict consumers' behavioural intention to adopt a specific technological advancement. However, Kasheir *et al.* (2009) and many researchers believe that these theories are incomplete and that integrating aspects of these theories provides a better understanding and explanation of consumer evaluation of the post-purchase decision-making process rather than what is provided by each theory alone.

Consumers' continued use and frequency of use of internet banking assessment may be more complex than current theories explain, due to the fact that consumers often need to abandon or minimise their current behaviour and usual concerns associated with technological advancements (Falk *et al.* 2005). Also, usage depends upon an individual's capability and capacity to engage with these proliferated service delivery channels (Walker & Johnson 2006). Often, continued use is related to the technology updating mechanisms (Kim & Malhotra 2005). Consequently, existing models, whilst indicative of internet usage behaviour, are not complete in terms of all of the factors consumers refer to in their decision-making.

2.9 GENERAL BANKING AND INTERNET USAGE BEHAVIOUR

Research shows that prior experience with internet, email and e-payment activities have a significant impact on the usage levels of internet banking services. For example, past experience with the use of technology such as ATMs, teletexting and automats have a significant positive impact on British consumers' attitudes towards internet banking (Karjaluoto *et al.* 2002; Igbaria *et al.* 1995). Extensive usage of general banking service itself was identified as a significant factor in the adoption of internet banking (Lee & Lee

2001). Pikkarainen *et al.* (2004) reported that the quality of the internet connection influences consumers' intention to adopt internet banking services.

Numerous studies show that direct and indirect knowledge about a certain product or service, available to and acquired by a consumer, actually just reflects familiarity with that product or service. In consumer behaviour studies, a consumer's familiarity with the online environment is determined by a consumer's level of experience with the service and is often identified as a key situational variable (Martinez-Lopez *et al.* 2005). The duration of internet banking usage significantly impacts the consumer's average use of internet banking in Zimbabwe (Thulani *et al.* 2009). Maenpaa *et al.* (2008) also reported that internet familiarity plays a moderating role in predicting consumers' perceptions towards internet banking in Finland. Guerrero *et al.* (2007) noted that the usage of internet banking by European consumers is influenced by ownership of diverse financial products and services and their attitude towards managing finance. The constructs of 'awareness' and 'resistance to change' have been identified as significant predictors in influencing Malaysian consumers' intention to adopt internet banking (Sohail & Shanmugam 2003). All such studies show the importance of experience with technology as a fundamental influence on consumers that increases their willingness and likelihood to continue to use the technology. A measure of how much experience consumers have with technology will be critical to include in this research.

2.10 DEMOGRAPHIC CHARACTERISTICS

Existing studies indicate that demographic characteristics influence consumers' adoption of internet banking services (Mattila 2001; Jayawardhena & Foley 2000; Daniel 1999; Sathye 1999). Karjaluoto *et al.* (2002) noted that personal banking experience and demographics significantly impact the usage of internet banking services among Finnish consumers. Innovation characteristics and demographics influence the usage of internet banking (Ismail & Panni 2009; Karjaluoto *et al.* 2002). In consumer behaviour studies, individual differences are often associated with the acceptance of internet banking as an innovation (Ismail & Panni 2009, Assael 1981).

Older consumers have negative attitudes towards innovations and are often reluctant to adopt new technologies (Trocchia & Janda 2000). Howcroft *et al.* (2002) identified that older people prefer face-to-face transactions involving bank personnel and are less inclined towards internet banking usage. Younger consumers are more attracted

to the advantages offered by internet banking compared to branch banking (Jayawardhena & Foley 2000). Also younger consumers are more inclined to use technological advancements compared to mature-aged consumers (Akinci *et al.* 2004; Kolodinsky *et al.* 2004). Internet shopping is performed in Greece by consumers of 25 to 44 years of age (Vrechopoulous *et al.* 2001). Gan *et al.* (2006) reported that consumers above 56 years of age are less likely to use electronic banking services in New Zealand.

The marital status of consumers also affects their adoption of internet banking, with research showing that married consumers prefer electronic banking transactions (Katz & Aspden 1997). Marital status has no impact on the adoption of electronic banking by New Zealand consumers (Gan *et al.* 2006). The typical internet banking user is often identified as a member of the career-oriented upper middle class (Roemer & Buhl 1996). Adoption of electronic banking services is also significantly influenced by ethnic background (Katz & Aspden 1997). Part time workers perceive electronic banking as costly and prefer not to adopt it, whereas, white collar workers exhibited a positive attitude to using electronic banking services (Gan *et al.* 2006) and are more likely to adopt internet banking than blue collar workers (Karjaluo *et al.* 2002). Liu *et al.* (2001) reported that highly paid skilled workers are more likely to use advanced technologies than other categories of workers.

According to the study by Gan *et al.* (2006), consumers with a high income are less likely to adopt electronic banking services and prefer to deal with bank personnel directly, particularly when dealing with complex transactions and handling large sums of money. However, other studies have reported that consumers with high levels of income are more inclined towards the adoption of internet banking (Foucault & Scheufele 2002; Gronau & Hamermesh 2001; Jayawardhena & Foley 2000). Existing studies also show that there are gender differences in technology acceptance and usage behaviour among consumers (Venkatesh *et al.* 2000; Venkatesh & Morris 2000). However, in one New Zealand study, gender has no impact on adoption of electronic banking services by consumers (Gan *et al.* 2006).

Consumers with better education respond more positively to the adoption of internet banking (Gronau & Hamermesh 2001). Consumers with higher levels of education may require less training in response to technological change as their general skill levels enable them to learn the new technology quicker than consumers with low levels of education (Barter & Sichertman 1998). Internet banking users in the UK are

highly educated and have a good level of knowledge of computers and the internet (Jayawardhena & Foley 2000). However, Howcroft *et al.*'s (2002) research noted that level of education has no impact on consumers' use of telephone and internet banking. Thus in many internet banking studies, except for a few, the role of demographic characteristics was found to be significant in predicting consumers' acceptance, intention to adopt and adoption of internet banking. However, consumers' continued usage and frequency of usage of internet banking was found to be less significant. Therefore, in the present study, demographic characteristics will be statistically controlled for in order to reduce their confounding and spurious effects and obtain more powerful tests of the predictor variables of theoretical importance to the research.

2.11 TECHNOLOGY FACTORS

Technological advances in society have an impact on marketing practices. Information and knowledge about markets, customers and competitors becomes more complex and available with the implementation of technological innovations (Rust & Espinoza 2006). As a result, better services can potentially be offered by companies to satisfy each customer's specific needs. Thus, a clear shift from traditional product orientation to customer orientation in marketing practice is evident as businesses vigorously compete in the application of technology to services (Lovelock & Wirtz 2004). Therefore, service delivery has become the central focus of many businesses today, paving the way for a new paradigm described as 'the service revolution'. Technological applications that are easy to implement are beneficial to the service provider and the customer. Revolutionary technologies in the form of internet banking service delivery channels, an increase in the interaction between the service provider and the customer, and an increase in market knowledge assists in segmentation strategies (Vargo & Lusch 2006). From the service provider's perspective, technological advancements allow them to offer their products and services to individual customers in high volumes at low cost through customisation. However, from the customer's perspective, technology-enabled services allow interactive communication between the service provider and the customer and enhance the relationship with the service provider (Rust & Thompson 2006).

Existing research has revealed the multifaceted use of technology-enabled products and services (Ye *et al.* 2008). The influence exerted by technological innovations in pre-adoption consumer behaviour has been acknowledged by researchers (Jha *et al.* 2006).

The simultaneous interactions of consumers with technology have caused them to experience positive and negative reactions about the use of technology (Parasuraman 1997). An array of consumer reactions such as control, competence, efficiency and assimilation can be triggered when consumers experience technological interactions (Mick & Fournier 1998, p.126). In order to cope with technologies, consumers engage in different strategies that range from non-adoption and ignorance, to actual adoption and usage (Parasuraman 2000). However, consumers continue to modify and innovate with technology artifacts, even after adoption of a technology-associated product or service (Desouza *et al.* 2007). The role played by technology-related factors during consumers' post-adoption behaviour remains unexplored. As consumers' level of experience and sophistication in using a particular technology becomes elevated, consumers' expectations of the service suitability to their specific needs also increases (Ye *et al.* 2008). In this study, there exists a possibility for consumers to make concurrent decisions either to reduce or terminate the usage of their internet banking channel and/or shift to alternate service delivery channels available with similar functions. Such behaviour typically occurs after the consumer's adoption of internet banking as concurrent use of competing technology options is sometimes necessary with consumer-oriented banking services. Therefore, the present study investigates the influence of technology-related factors in impacting on consumers' post-adoption behaviour, particularly in terms of their continued use and frequent use of internet banking. Thus, relative advantage, compatibility, complexity, trialability and result demonstrability perceptions may all affect the consumer's attitudes towards their internet banking service delivery channel and all of these factors are expected to predict consumers' continued and frequent use of internet banking.

2.11.1 Relative Advantage

Relative advantage is 'the degree to which an innovation is perceived by potential adopters as being better than the idea, product or service it supersedes' (Rogers 1995). In other words, it is the degree to which an innovation is perceived as being better than its precursor (Moore & Benbasat 1991, p.195). Adopters invariably perceived relative advantage in terms of the economic benefits and improvements that are afforded to their social status (Rogers 1995). Some studies on innovation have portrayed convenience as a measure of relative advantage (Gerrard and Cunningham 2003; Black *et al.* 2001; Polatoglu & Ekin 2001; Suganthi *et al.* 2001); whereas, other studies have shown that

flexibility and convenience attributes were of a limited scope (Szymigin & Bourne 1999). The relative advantage construct is often considered as highly domain specific and, with regard to internet banking services, it is evident in terms of price, convenience and performance (Black *et al.* 2002; Polatoglu & Ekin 2001). Moreover, cost saving and ability to bank at any time were critical encouraging attributes for consumers to adopt internet banking (Howcroft *et al.* 2002). Shih & Fang (2004) reported that a positive perception of consumers towards the benefits of internet banking impacted on its adoption. These studies all show that the concept of ‘relative advantage’ is an important sub-dimension to include when studying how consumers choose to use internet banking.

2.11.2 Compatibility

Compatibility is ‘the degree to which an innovation is perceived as being consistent with the existing values, past experiences and the needs of adopters’ (Moore & Benbasat 1991, p.195). Shih & Fang (2004) reported that an innovation is likely to be adopted to the extent that its use does not violate cultural and social norms. Tan & Teo (2000) have shown that the compatibility of an internet banking service delivery channel is associated with the modern day banking consumer who is likely to be knowledgeable and familiar with the internet. Black *et al.* (2001) reported that the values of consumers significantly influence their willingness to adopt internet banking in the UK. Plouffe *et al.* (2001) noted that consumers’ perceptions towards compatibility significantly predict the adoption of technology. Respondents in Turkey viewed internet banking as being far less compatible due to low levels of email usage and a preference for over-the-counter service delivery at bank branches (Polatoglu & Ekin 2001). Gerrard & Cunningham (2003) reported that consumers in Singapore were more accustomed to using ATMs and see internet banking as being consistent with their past experiences. Shih & Fang (2004) reported that the dimension compatibility was not significant in influencing consumers’ attitudes towards their intention to adopt internet banking. Compatibility will be included as an important predictor to measure consumers’ continued and frequent use of internet banking in the present research.

2.11.3 Complexity

Complexity is ‘the degree to which an innovation is perceived as difficult to understand and use’ (Moore & Benbasat 1991, p.195). Hewer and Howcroft (1999) noted that electronic banking requires a minimum level of technological experience and

competence which reduces the perception of its complexity by consumers. Research indicates that an innovation with substantial complexity requires greater technical skills, implementation and operational efforts on the part of consumers to increase its chances of adoption (Tan & Teo 2000; Moore & Benbasat 1996). Complexity in conducting financial transactions over the internet was inversely related to a consumer's experience with the internet (Black *et al.* 2001). Polatoglu & Ekin (2001) emphasised that consumers with a higher level of education and familiarity with the internet perceived internet banking to be less complex than consumers with lower education and familiarity. Shih & Fang (2004) noted that consumers' perceptions of internet banking as complex was influenced by their attitude towards the adoption of internet banking. Thus, complexity sub-dimension will be included in the present study as a technology factor in order to identify its impact on consumers' continued and frequent use of internet banking.

2.11.4 Trialability

Trialability is 'the degree to which an innovation may be experimented with a limited basis' (Moore & Benbasat 1991, p.195). The ability to conduct a trial confirms how easy it is to use internet banking (Black *et al.* 2001; Hewer & Howcroft 1999). Consumers who are allowed to experiment with an innovation on a limited basis are more likely to adopt it (Tan & Teo 2000). Consumers' perceptions towards the trialability of an innovation significantly predict the acceptance and adoption of such technologies (Meuter *et al.* 2005; Brown *et al.* 2004). Trialability will be included as an important technology factor to measure in this study.

2.11.5 Result Demonstrability

Result demonstrability is 'the tangibility of the results of using the innovation including their observability and communicability' (Moore & Benbasat 1991, p.203). Agarwal & Prasad (1997) found a significant correlation between usage intentions and result demonstrability. Consumers' positive perceptions towards the result demonstrability component of internet banking significantly influenced their adoption and use of the delivery channel (Tan & Teo 2000). The sub-dimension result demonstrability will be included in this study as a technology-related factor in order to identify its impact on consumers' continued and frequent use of internet banking.

Thus, in the present research, relative advantage, compatibility, complexity, trialability and result demonstrability sub-dimensions will be included as a technology-

related factors and their influence on consumers' continued and frequent use of internet banking will be studied.

2.12 CHANNEL FACTORS

The past decade has seen some of the most rapid and substantive changes in channels of distribution for goods and services in many economies (Black *et al.* 2002). The advent of the internet challenged the traditional role played by many intermediaries and presented buyers with a choice in terms of their distribution channel usage. Today's consumers are exposed to several service delivery channels and researchers in this area tend to concentrate on understanding and analysing channel design strategies, instead of the issue of channel selection and usage which have received relatively little attention in the existing literature (Yousafzai *et al.* 2005). Such trends therefore highlight the growing need to understand the ways in which consumers may choose between alternate channels and the circumstances under which one channel may be chosen over another (Black *et al.* 2002).

The proliferation of service delivery channels is evident in the financial services context, specifically in the retail banking sector. Much of the initial channel adoption literature in financial services marketing research focused attention on ATMs (Rugimbana 1995). In the 1990s, there was a shift in interest towards telephone banking (Lockett & Littler 1997) and electronic banking (Liao *et al.* 1999). Subsequent studies focused specifically on internet banking (Black *et al.* 2001), although the initial focus of attention was on the activities undertaken in organisations rather than on the behaviour of consumers (Black *et al.* 2002). Some later studies started realising the importance of consumers and their channel interactions and emphasised the degree of congruence between a particular service and a channel (Morrison & Roberts 1998). Moreover, existing research also concentrated on identifying factors influencing a consumer's decision to adopt a particular channel as well as multiple channels (Bell & Lyman 1999).

The approach of the present study is different in two ways. Firstly, it makes an attempt to focus on consumer channel interactions during their post-adoption behaviour. Secondly, channel-related factors are identified as consisting of components such as consumers' perceptions of their self-efficacy, risk, trust and personalisation. Finally, the study attempts to examine the influence of these channel factors on consumers' continued

and frequent use of internet banking. Each of the components associated with the ‘channel factors’ that are important to consumers will now be discussed.

2.12.1 Perceived Self-efficacy

A key element in social cognitive theory is the concept of self-efficacy, which refers to an individual’s belief in their capability to perform a specific task. Self-efficacy is estimated through a gradual and dynamic weighing, integration and evaluation of complex cognitive, linguistic, social and/or enactive experiences (Bandura 1986). In recent years, the applicability of social learning theory is related to the concept of self-efficacy (Bandura 1997). Self-efficacy is the ability that an individual has to do a certain action (Bandura 1989). Bandura (1986, p.391) defines self-efficacy as ‘people’s judgment of their capabilities to organise and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses’.

Social cognitive theory (SCT), also called social learning theory, is a widely accepted model of individual behaviour (Bandura 1977). SCT explains human behaviour from the perspective of a continuous reciprocity among behavioural, cognitive and other personal factors, such as personality, as well as demographic characteristics and environmental determinants such as social pressures or unique situational characteristics (Bandura 1982). This triadic relationship is often mentioned in the literature as ‘Triadic Reciprocity’ or ‘Reciprocal Determinism’ (Bandura 1986), and is represented in Figure 2.5.

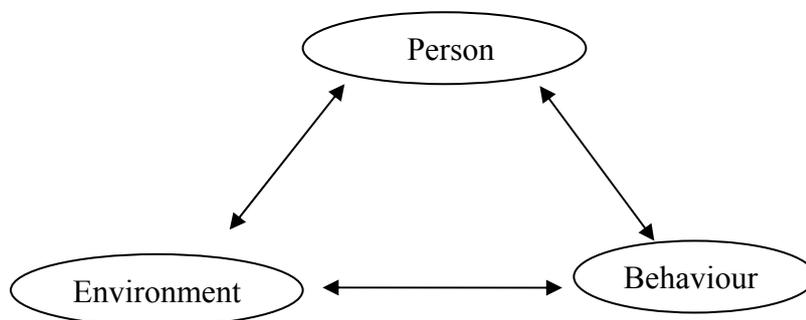


Figure 2.5: Reciprocal Determinism

It is stated that learning is an exceedingly laborious process: ‘most human behaviour is learned observationally through modelling such as from observing others

one forms an idea of how new behaviours are performed, and on later occasions this coded information serves as a guide for action' (Bandura 1977, p. 22). The social learning theory states that neither inner forces nor environmental stimuli drive individuals as isolated influences (Bandura 1977). Behaviours result from both the social interaction of the people and their environments and these influences are bi-directional (Bandura 2001). Interaction is viewed as a process of reciprocal determinism of behaviour, personal factors and environmental characteristics. An essential prerequisite for the occurrence of social learning is the existence of social interaction between learners and role models. If there is no social interaction, there is no learning (Bandura 1986). Human behaviours are affected by observation and by direct experience. The component processes underlying observational learning are attention, retention, motor reproduction and motivation (Bandura 1986).

Attention involves modelled events and observer characteristics targeting distinctiveness, affective valence, prevalence, functional value, sensory capabilities, arousal level and past reinforcement. Information retention and information recall to produce imitation is the central idea behind observational learning and includes symbolic coding, cognitive organisation and symbolic rehearsal (Bandura 2001). Transformation of information from symbolic representation to appropriate actions is through motor reproduction. Finally motivational process results in as learners of social behaviour reproduce only behaviours that they value (Bandura & Adams 1977). Social learning theory has been applied extensively in the context of behaviour modification (Bandura & Adams 1977). Social cognitive theory is built upon the foundations of individual and group psychological behaviour and is a widely accepted model of individual behaviour (Chan & Lu 2004; Pincus 2004). Individuals are more likely to adopt a modelled behaviour if they outweigh the resulting outcomes and have functional value and can influence their actions (La Rose & Eastin 2004; McCormick & Martino 2004).

The application of social cognitive theory is visible in many disciplines due to its dynamic nature as it proposes that individual behaviour changes constantly (Kock 2004). Its applicability ranges from the analysis of organisational management (Wood & Bandura 1989) and task complexity (Bolt *et al.* 2001) to the adoption of technological innovations (Compeau *et al.*, 1999). It has been found that online learning is fostered among individuals through social learning and social interaction (Bandura 2001). Social learning enhances the adoption of teleconferencing, particularly in small group

communications (Johansen *et al.* 1999). Social learning is identified as an important factor in the uptake of interactive computer-mediated communication between middle school students and scientist role models (Murfin 1994). Social cognitive theory emphasises the possession of requisite skills and confidence by individuals to use a new or existing technology (Compeau *et al.* 1999).

Past research conceptually and empirically focused on the concept of self-efficacy (Gist 1987; Gist & Mitchell 1992). The relationship between self-efficacy and usage of computer studies has been identified (Burkhardt & Brass 1990; Gist *et al.* 1989; Hill *et al.* 1986; Webster & Martocchio 1992, 1993). Some studies investigated the relationship between self-efficacy and registration in computing courses at universities (Hill *et al.* 1987), technology innovations (Burkhardt & Brass 1990) and performance in software training (Gist *et al.* 1989; Webster & Martocchio 1992, 1993). It has been observed that consumers' perceptions towards their self-efficacy significantly predicted their intention to use a wide range of technologically advanced products and services (Taylor & Todd 1995). Increased levels of self-efficacy also improve initiative and persistence that often lead to performance (Eden 1992). Relevance of the system to an individual's self belief is identified as an important factor in user acceptance by Wexler (2001). Bolt *et al.* (2001) reported that computer self-efficacy has a more positive impact on performance when task complexity is high than when task complexity is low. Ratten & Ratten (2007) inferred that self-efficacy has no significant impact on consumers' intention to use WAP banking.

Consumers with direct experience and familiarity with using self-service technologies exhibited higher levels of self-efficacy (Ellen *et al.* 1991). Significant and positive associations of an individual's self-efficacy and acceptance of self-service technologies were evident in the existing literature (Wang *et al.* 2003; Agarwal & Karahanna 2000). Trocchia & Janda (2000) identified that consumers with related technology experience and skills tend to be motivated and willing to use self-service technologies. Consumers accept and adopt a particular technological advancement that does not demand change and acquisition of new skills (Chau & Lu 2004). Darch & Caltabiano (2004) reported that consumers' experience and efficacy emerged as significant predictors in ATM use. Consumers' positive perceptions towards computers were found to be strongly associated with the use of internet banking by mature consumers (Mattila & Mattila 2005; Mattila *et al.* 2003). Thus, existing research has

reported that domain-specific experience has a strong impact on consumer evaluations and preferences (Frambach *et al.* 2007; Laforet & Li 2005). From the discussion so far, it is evident that much of the existing research focuses either on consumers' pre-adoption or adoption behaviour. There exist only a handful of studies that focus on consumers' post-adoption behaviour. All the studies elicit the need to further research and explore the concept of self-efficacy in relation to the individual's channel perceptions. Therefore, the present research makes an attempt to study the influence of consumers' self-efficacy of the internet banking service delivery channel on their continued and frequent usage patterns.

2.12.2 Perceived Risk

Research has shown that technological advancements have a profound impact on the market (Wan *et al.* 2005). Thus the proliferation of service delivery channels often identified as a means of technological advancements in the financial services industry enable banks to enhance profitability and efficiency. Moreover, the evolution of banking service delivery channels such as ATM, telephone banking, internet banking and mobile banking are oriented towards effectively meeting consumers' changing needs and lifestyles. These channels of distribution enhance consumers' banking experiences as well as their interactivity with the banks (Zhao *et al.* 2008). However, it is evident that consumers always tend to associate the potential benefits offered by the proliferated service delivery channels with the possible risks. Risk plays a vital role in the consumer decision-making process, as consumers' perception of potential risk would often result in their resistance to adopt a particular technological advancement (Black *et al.* 2001). The involvement of risk with any consumer decision-making process may occur at the pre-purchase, purchase or post-purchase stages (Cunningham *et al.* 2005). Therefore, investigating the perceived risk component from a consumer's perspective helps to better understand their behaviour and provides important implications for marketing strategies.

The concept of risk has been viewed in the literature either through historical paradigm or through psychometric paradigm (Gabriel & Nyshadham 2008). Historical paradigm of the risk perception relates to the revealed preference approach which emphasises that observed behaviour reflects people's preferences (Starr 1969). Alternatively, the psychometric paradigm utilises the expressed preference approach that employs direct questioning of respondents regarding their attitudes towards risks (Fischhoff *et al.* 1978). Existing research views perceived risk as part of other constructs,

effects of other elements on perceived risk, or effects of perceived risk on other elements or activities. Stone & Gronhaug (1993, p.42) viewed risk as the subjective expectation of loss. Teo & Yeong (2003) have also studied perceived risk as part of the consumer decision-making process. The effect of consumer information processing on consumers' perception of risk related to the pre-purchase stage has been reported by Ha (2002). Salam *et al.* (2003) identified the factors that reduce the risk perceptions. Several studies have used the psychometric approach in identifying risk dimensions across a variety of domains (Lim 2003). The importance of perceived risk has been widely discussed in the marketing literature (Cunningham *et al.* 2005).

The concept of risk plays a central role in decision-making theory and is broadly defined as an attribute of a decision alternative that reflects the variance of its possible outcomes. Rousseau *et al.* (1998) define risk as the perceived probability of loss. Mayer *et al.* (1995, p.725) report that 'if a decision involves the possibility of a negative outcome coupled with a positive outcome, the aggregate level of risk is different than if only the possibility of the negative outcome exists'. Estimation of risk involves both the potential negative consequences and the probability of failure (Sztompka 1999). Risk has been operationalised as the probability of a negative outcome of an event or taking into consideration only the magnitude of the negative outcome or separate the positive and negative outcomes of the event and calculating the difference between them (Kim & Prabhakar 2000). Studies in the consumer behaviour literature have used the theory of optimum stimulation level (Hebb 1955; Leuba 1955), in order to explain the linkage between individual risk aversion and exploratory consumer behaviour, including information search and variety seeking (Steenkamp & Baumgartner 1998). Ganesh *et al.* (2000) and Keaveney & Parthasarathy (2001) reported that an individual with greater risk aversion is less likely to switch brands and more likely to stay with their current service provider compared to customers who were less risk-averse.

Several researchers focused on the potential sources of risk in a business to the consumer environment (Nyshadham & Ugbaja 2006; Lim 2003; Vaidyanathan & Devaraj 2003). In an online environment perceived risk is defined as the potential for loss in the pursuit of a desired outcome of using electronic banking services (Featherman & Pavlou 2002). Perceived risk in the existing consumer behaviour studies is defined in terms of the consumers' perceptions of the uncertainty and potential adverse consequences of purchasing a product or service (Littler & Melanthiou 2006). The level of risk associated

with certain dimensions might be eminent on the basis of a specific context (Cases 2002). Existing studies emphasise the importance of the perceived risk in influencing online consumer behaviour (Schlosser *et al.* 2006; Cunningham *et al.* 2005; Salam *et al.* 2003). In an online shopping context, uncertainty regarding the value of the services, technological unpredictability of the internet and impersonal nature of the online transactions might drive consumers' beliefs about risk associated with the purchasing process (Pavlou 2003). Users are influenced only by their perception of risk, whether or not such risk actually exists. Four sources of risk in the online shopping context, such as product, remote transaction, internet and website comprising eight dimensions are summarised in Table 2.7.

Table 2.7: Source and Dimensions of Risk

Source of Risk	Risk Dimension	Description
Product	Performance risk	Dissatisfaction of the customer in relation to expectations concerning product quality.
Remote transaction	Time risk	Time spent for purchasing includes a bad purchase.
	Financial risk	Loss of money in bad purchase or purchase of a item can end up being higher than expected.
	Delivery risk	Fear of not receiving the product on time or long waiting period.
Internet	Social risk	Use of the internet for purchase item may cause disagreement with other family members or friends.
	Privacy risk	Personal information may be used for other purposes.
	Payment risk	Fear of giving credit card number to others.
Website	Source risk	Fear of credibility and reliability of website and web service provider

Source: Adapted from Cases 2002

Littler & Melanthiou (2006) reported several categories of risk associated with the internet banking context: financial, performance, time, social, psychological and security risks. Financial risk relates to the potential investment costs involved in performing internet banking transactions. Performance refers to consumers' ability to perform a banking transaction over the internet and in a stipulated time, the effectiveness of the website and downloading speed. Time risk concerns the amount of time spent by the consumers to perform internet-based banking transactions. Social risk emphasises the

status component of the consumers using internet banking as viewed by others such as family, peers or acquaintances. Failure of internet banking and compatibility with the self image of the consumers often constitute psychological risk. Security risk addresses consumers' concerns about external intrusion resulting in the scrutiny of personalised financial details as well as potential monetary losses (Littler & Melanthiou 2006). Zhao *et al.* (2008) reported four types of risk such as the risk of losing personal control (money, data and time), the risk of losing face, the risk of system failure and the risk of displaying problems to others in the internet banking context (Yousafzai *et al.* 2003). The risk of losing personal control relates to privacy and financial risk components (Cases 2002). Social and psychological variables are associated with the risk of losing face (Hassan *et al.* 2006; Bhatnagar & Ghose 2004). Performance is related to the risk of system failure and psychological, physical and social risk dimensions refer to the risk of displaying problems to others (Zhao *et al.* 2008).

Consumers' perception of high risk actually hinders internet banking adoption (Kamel & Hassan 2003). Previous research supported the effect of perceived risk on adoption and post-adoption of internet banking in the retail banking context (Eriksson *et al.* 2008; Lin 2008; Vatanasombut *et al.* 2008; Alagheband 2006). It has been observed that confidentiality associated with internet transactions are the major risks, while social risk incurred appears to be the lowest (Eriksson *et al.* 2003). Moreover, in an internet banking service delivery channel, the user has to seek information about alternative channels and thus tolerate the uncertainty associated with the internet-based channel in order to achieve potential benefits. Therefore, consumers' channel-risk perceptions were expected to be critical in influencing their decision to use a particular channel. Important categories of risk based on consumers' perceptions about the internet banking context are likely to be financial, security and privacy risk related to the potential loss due to deficiencies in the operating system, illegal external access leading to misappropriation of funds and potential loss of personal information (Awamleh & Fernandes 2006; Littler & Melanthiou 2006; Rotchanakitumnuai & Speece 2003; Sarel & Marmorstein 2003).

It is expected that the consumers' perceptions towards risk component is critical in influencing their acceptance and adoption of internet banking, that is pre-adoption behaviour. Also consumers' perceptions that their internet banking service delivery channel is safe and secure to conduct their banking transactions encourages them to use

this channel continuously and frequently. Therefore the role of the risk component in the present research is of interest in light of consumers' post-adoption behaviour.

2.12.3 Perceived Trust

The concept of trust in a more general sense is related to psychological and sociological perspectives which pave the way to better understand consumer-based trust and consumers' association with the trust construct in an online or electronic environment. General trust identified in the existing literature is internal in nature and attempts to explain business to business relationships. The psychological perspective identifies trust as a generalised expectancy and relates to interpersonal trust relationships (Grabner-Kraeuter & Kaluscha 2003). The sociological perspective relates to communal trust and social capital (Kramer 1999). Trust in general is defined as 'a belief or expectation about the trusted party or as a behavioural intention or willingness to depend or rely on another party' (Grabner-Kraeuter & Kaluscha 2003). Mayer *et al.* (1995) stated that trust is 'the willingness of a party to be vulnerable to the actions of another party based on the expectation that the others will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party'. To date neither researchers nor practitioners agree on a single definition of trust which is applicable unanimously either to business to business or business to consumer contexts (Grabner-Kraeuter & Kaluscha 2003). Lack of conclusive evidence might be attributed to the difficulty in measuring trust which is an arbitrary and abstract concept. However, existing literature focuses on the following definitions of general trust presented in Table 2.8.

Table 2.8: Definitions of General Trust

Hardin (2002)	'Trust is inherently a rational or intentional commitment or judgment' (p.186)
Kramer (1999)	'Trust entails a state of perceived vulnerability that is derived from individuals' uncertainty regarding the motives, intentions, and prospective actions of others on whom they depend' (p.571)
Ruscio (1999)	Trust is defined as 'merely another strategy to achieve ones' interests and springs not from duty or obligations to others but from a calculation that it is in ones' personal interest to trust others' (p. 645)

These definitions of "trust" are applied in numerous studies across a number of academic disciplines, but several researchers contend that the concept of trust needs

further research because it is a multidimensional and complex construct. The following five types of trust emerged from the general conceptualisation of trust as a construct and are presented in Table 2.9.

Table 2.9: Types of Trust Emerged from General Trust

Characteristic-based trust	Fenton (2000)	Relates to an individual's social and cultural background.
Process-based trust	Fenton (2000)	Associated to past and present exchanges and reputation and identified as relevant in maintaining long-term relationships.
Institutional-based trust	Pavlou & Gefen (2004) Walczuch & Lundgren (2004)	Cover the aspect of trust in terms of certification and legal constraints and includes other embodiments of institutions with social and communal importance.
Cognition-based trust	Kumar & Paddison (2000)	Characterised by competence, responsibility, reliability, predictability and dependability as attributes of a potential trustee.
Affect-based trust	Kumar & Paddison (2000)	Formed on the basis of emotional bonds between the potential trustor and trustee.

Existing business and marketing literature refers to consumer-based trust which relates largely to a psychological construct and, to a lesser extent, a sociological construct. Moorman *et al.* (1992, p.315) defined consumer based trust as 'the willingness to rely on an exchange partner in whom one has confidence'. Fukuyama (1995, p.195) described trust 'as the shared norms of ethical behaviour between network members'. Thus the concept of trust is often ambiguous and highly context dependent (Egger 2003; Suh & Han 2003). For the success of any business, trust is vital and as such it plays an important role in the banking industry (Yousafzai *et al.* 2005). Trust has been identified as a potential driving force for the development of electronic commerce applications as it determines the consumers' acceptance and willingness to engage in various transactions (Herrmann & Herrmann 2004). Proper maintenance of trust between buyers and sellers is important for the success of e-commerce (Gulati & Sytch 2008; Chang *et al.* 2005). Suh & Han (2003) reported that consumers' perceptions towards trust reduces their uncertainties and increases their transactional activities.

Research indicates the delineation of online trust from offline trust (Yousafzai *et al.* 2005). The concept of trust plays a crucial role in the online environment due to its impersonal nature and extensive use of technology (Grabner-Kraeuter & Faullant 2008; Gan *et al.* 2006; Yousafzai *et al.* 2003). Offline trust, characterised by attributes such as eye contact, tone of voice, appearance and behaviour of people, does not seem to be valid in an electronic environment (Yousafzai *et al.* 2005). Several researchers identified lack of trust as an important feature related to consumers' reluctance to perform online transactions (Flavian *et al.* 2006; Luarn & Lin 2004; Mukherjee & Nath 2003). Trust is of an important concern in many social interactions (Pavlou & Fygenson 2006; Gefen & Straub 2003). Online trust is defined as a belief or expectation about the website or the web vendor and/or the internet as a trusted party or object of trust or as a behavioural intention or willingness to depend or rely on the trusted party (McKnight *et al.* 2002; McKnight & Chervany 2002). Electronic trust is defined as 'the assured confidence a trustor (the user) has in the trustees' (the form of electronic banking) ability to provide reliable banking services' (Yousafzai *et al.* 2005). Willingness to perform internet-based transactions depends on consumers' trust in a specific party, such as the bank, and in the internet as an underlying transaction medium (McKnight *et al.* 2002). In the internet banking context, the trustor is typically identified as a consumer and the trusted party is the bank or the internet.

Several researchers identify trust as a multidimensional concept and the specific dimensions relate to disposition to trust, institutional based trust, trusting belief and trusting intention (Riegelsberger *et al.* 2005; Wang & Emurian 2005; Yousafzai *et al.* 2005; Patton 2004; McKnight *et al.* 2002). Disposition to trust is identified as individuals' faith or trust in others. Institutional trust consists of structural assurance and situational normality enabling interactions between the parties to be successful. Trusting belief refers to three beliefs of competence, integrity and benevolence. Competence is the trustors' belief in the ability of the trustee. Integrity is the belief of the user that the services provided by the trustee are ethical, honest and complete. Trusting intention relates to the user's aim to access the services provided by the trustee. The component of trust in the use of internet-based transactions enables further perceived consequences such as favourable expectations by consumers that the internet is reliable and will not result in any of the negative consequences (Pavlou & Fygenson 2006).

The disposition to trust dimension is not considered in the present study as there is no interaction of the consumers with any other bank personnel in performing internet-based transactions. Often trusting beliefs are affected by institutional-based trust and forms an integral part of electronic environment (Yousafzai *et al.* 2005). Consumers' trust in online transactions is affected by the characteristics of the bank, website and underlying technology infrastructure. Internet trust in the present study is conceptualised as consumers' trusting beliefs in the reliability and predictability of the internet and the willingness of the consumer to depend on the internet medium with regard to their economic transactions and did not include any characteristics of the banks or bank websites.

The prevailing view of consumer trust in the e-commerce literature contends that trust has a direct positive effect on consumers' attitude and behaviour (Teo & Liu 2007; Jarvenpaa *et al.* 2004; Suh & Han 2003; Pavlou 2003). Jarvenpaa *et al.* (1999) reported that consumers' willingness to purchase in an internet store is affected by their perceptions regarding trust. Bhattacharjee (2002) noted that trust and familiarity of the consumers plays a predominant role in influencing their willingness to transact online. Consumers' purchase intentions are influenced by integrity and benevolence components of trust (Gefen 2002). Also, Gefen *et al.* (2003) concluded that trust is a significant predictor of potential and repeat customer purchase intentions. George (2004) revealed that consumers' purchase intentions in an electronic environment are determined by their perceptions regarding internet trustworthiness. Trust in one's bank is a key determinant in directly influencing consumers' use of internet banking (Sohail & Shanmugam 2003). Pavlou (2003) reported that trust has a positive direct effect on consumers' attitude towards internet banking.

Ratnasingam *et al.* (2005) reported that 'whereas the traditional notion of trust primarily focuses on trust in a trading partner, trust in e-business also incorporates the notion of trust in the infrastructure and the underlying mechanism (technology trust) which deals with transaction integrity, authentication, confidentiality, and non-repudiation'. Lee & Turban (2001, p. 81) state that '...human trust in an automated or computerised system depends on three factors: (1) the perceived technical competence of the system, (2) the perceived performance level of the system, and (3) the human operator's understanding of the underlying characteristics and processes governing the system's behaviour'. A plethora of studies acknowledge the importance of trust in the

internet medium (McCole & Ramsay 2009; Eastlick *et al.* 2006; McKnight *et al.* 2002). Thus, the trust component associated with the internet-based channel stresses the perceived ability of the internet to perform the task, as well as the speed, reliability and availability of the system (McCole & Ramsay 2009). The component of trust was identified as critical in facilitating electronic transactions in the existing literature (Grabner-Krauter & Kaluscha 2003).

Researchers also contend that, in order to attain the true electronic transactions potential, the internet has still some way to go and often lack of trust between transacting parties and the system facilitating the exchange impedes the speed at which this potential has yet to be realised (Gupta & Kim 2007; Dinev *et al.* 2006). Electronic transactions recognise the role of the consumer as a key ‘stakeholder’ in these interactions, as the ultimate decision of whether a transaction will take place or not depends on the consumer (McCole & Ramsay 2009). Therefore, the present study stresses the importance of internet channel based trust and further intends to identify the influence exerted on consumers’ continued use and frequency of use of internet banking.

2.12.4 Perceived Personalisation

Marketers often confuse with the various definitions of the personalisation concept (Merisavo *et al.* 2007). Personalisation Consortium (2005) defines personalisation as ‘the use of technology and customer information to tailor electronic commerce interactions between a business and each individual customer. Using information either previously obtained or provided in real-time about the customer, the exchange between the parties is altered to fit that customer’s stated needs as well as needs perceived by the business based on the available customer information’. Table 2.10 illustrates widely used definitions of the personalisation construct in existing marketing literature.

Table 2.10: Definitions of Personalisation

Roberts (2003)	Defined as ‘the process of preparing an individualised communication for a specific person based on stated or implied preferences’ (p. 462).
Imhoff <i>et al.</i> (2001)	Defined as ‘the ability of a company to recognise and treat its customers as individuals through personal messaging, targeted banner ads, special offers on bills, or other personal transactions’ (p. 467).
Allen (2004)	Defined as ‘company driven individualisation of customer web experience’ (p.32-33).
Hanson (2000)	Defined as ‘a specialised form of product differentiation, in which a solution is tailored for a specific individual’ (p.450).
Peppers & Rogers (1997)	‘customising some feature of a product or service so that the customer enjoys more convenience, lower cost, or some other benefit’

Thus, it could be inferred that the concept of personalisation aims to provide custom-made content to individual needs with a short-term objective of understanding and delivering highly focused, relevant content matched to users’ needs and contexts. The long-term objective of personalisation is to create more business opportunities (Albert *et al.* 2004). In a business context the concept of personalisation is employed in different ways to generate business opportunities. Personalisation is ensured by some companies by using agents as generate up-sell and cross-sell opportunities and as a source of giving advice and providing recommendations to the consumers (Ho 2006). Other personalisation agents are involved in minimising users’ search efforts by way of indexing the structure of the related product pages. With the advent of internet and technological advancements and the proliferation of personalised websites, the concept of personalisation is increasingly drawing researchers’ attention. Existing research on the personalisation concept delineates three distinct categories: application of personalised technology, focus on the philosophical issues and generation of personalised content (Ho 2006).

The role of personalisation agents has been identified as pivotal in the application of personalisation technology in different domains such as information dissemination (Light & Maybury 2002), entertainment recommendations (Smyth & Cotter 2000) and search engines (Manber *et al.*, 2000). The personalisation concept focuses on the philosophical issues that relate to privacy regulations and ethics in data collection and processing (Kobsa 2002) and, finally, generation of personalised profiles concentrate on computational procedures to analyse transactions and personal profiles (Ramakrishnan

2000). While different studies investigated various aspects of personalisation applications, little attention has been given to understanding the relationship between personalisation constructs and user responses (Ho 2006).

Although personal contact and face-to-face service is a valued aspect of service consumption (Dabholkar *et al.* 2000; Moschis 2003), existing literature shows that e-commerce websites utilising personalisation content have increased their annual revenues (Parkes 2001). Mattila & Mattila (2005) and Reeves & Nass (1996) reported that the 'desire to deal with people' and 'enjoy the personal interaction' were the main reasons cited for non-adoption of technological advancements. Meuter *et al.* (2005) reported that consumers less ready to interact with technologies experience higher levels of personal interaction. Also, web content personalisation empowers online vendors to deliver user value and attain profits (Greer & Murtaza 2003). Light and Maybury (2002) reported that internet personalisation helps to control aimless surfing activity by providing individualised content, offerings and services. Advocates of online personalisation often claim that personalisation agents have transformed the internet into a personal communication medium. However, there remains scepticism on the prospects associated with the internet personalisation as the abovementioned was claimed to be highly over-rated (Nielsen 1998).

Consumers often develop preferences as a function of task and contextual characteristics depending on the ease with which relevant attributes can be evaluated (Hsee 1996), information availability (Bettman *et al.* 1998), and availability of the alternatives (Forman *et al.* 2006). Consumers' preferences as well as perceptions towards personalisation are important as previous choices are used to predict their future decisions (Forman *et al.* 2006).

Thus, in the present study perceived self-efficacy, perceived risk, perceived trust and perceived personalisation sub-dimensions will be included as a channel-related factors in order to predict their impact on consumers' continued and frequent use of internet banking.

2.13 SOCIAL FACTORS

Social influence is identified extensively in the existing literature as normative pressure, while subjective norm refers to a person's perception of the social pressures put on him/her to perform or not to perform the behaviour in question (Ajzen & Fishbein

1980). Thus, social influence has been treated in the existing literature as analogous to the subjective norm construct incorporated in the TRA and the TPB (Moore & Benbasat 1991). The role of social influence in an individual's decision whether or not to use a technology is complex and subject to a wide range of contingent influences (Venkatesh *et al.* 2003). Internet banking as a service innovation creates uncertainty and individuals who are uncomfortable with uncertainty will tend to interact with their social network before making a decision (Lu *et al.* 2005). Mathieson (1991) reported that social variables could be important in influencing consumers' perceptions if they capture variance that is not already explained by other variables.

Taylor & Todd (1995) decomposed the sources of social influence into peers, superiors and subordinates. The influence from peers and superiors significantly relate to the subjective norm construct that leads to consumers' behavioural intention and usage of technology (Taylor & Todd 1995). Studies in the literature found that subjective norm was a significant predictor of users' intention to use information technologies, especially in organisational settings (Taylor & Todd 1995). However, Legris *et al.* (2003) reported that there exists no significant impact of social influence from organisational peers, informal circles, professional peers, supervisors, and senior leaders. In the e-commerce context, the influence of family, friends and media was found to significantly influence consumers' online buying intentions (Limayem *et al.* 2000). Results reported indicated the stronger influence exerted by media on online shopping followed by family. The influence of friends had no significant effect on the intention to shop online (Khalifa & Limayem 2003). Chin *et al.* (2003) reported that susceptibility to social influence has been significantly related to consumers' willingness to purchase online.

The role of social norms in information technology usage literature to date is somewhat unclear (Yousafzai *et al.* 2003). The study of the influence exerted by the social factors construct on consumers' adoption of internet banking and internet-based technologies produced mixed and inconclusive results (Ma & Liu 2004). The subjective norm did not exert significant influence on consumers' behavioural intentions towards the adoption of technologies (Shih & Fang 2004, Chau & Lu 2001). In a study in the United Kingdom, peer pressure from family and friends was found to be least important in encouraging consumers' adoption of technology and internet banking (Howcroft *et al.* 2002). In the existing internet banking research, interpersonal influence generally is referred as normative belief structures or social norms, where it is frequently decomposed

into relevant reference groups (Chin *et al.* 2003). The impact of subjective norm on consumers' adoption as well as their intention to adopt internet banking is supported by Ravi *et al.* (2007). Other streams of research reported that subjective norm had no effect on consumers' intention to adopt internet banking (Ok & Shon 2006; Wan *et al.* 2005; Shih & Fang 2004). Urging by relatives influenced mature consumers' usage of the internet, thus focusing on closer communication with each other (Eastman & Iyer 2004). Studies involving organisational settings emphasised the positive significant impact of subjective norm on intentions (Hartwick & Barki 1994). Chan & Lu (2004) identified a stronger impact of subjective norm on existing users' intention to adopt and use internet banking than for potential users of internet banking. On the other hand, Karahanna *et al.* (1999) revealed that the relationship between subjective norm and behavioural intention was stronger for potential adopters than for the users.

Therefore, in the present study subjective norm and interpersonal influence as the sub-dimensions of social-related factors will be included in order to assess their predictive power of consumers' continued and frequent use of internet banking.

2.14 VALUE FACTORS

The creation of value is key in marketing (Lindgreen & Wynstra 2005). The role of marketing is 'to assist the firm to create value for its customers that is superior to competition' (Tzokas & Saren 1999, p.53). It is essential to know what consumers actually value before one can truly understand the choice of a particular service delivery channel, its continued usage and frequency of usage. It is also of equal interest in identifying the attributes that are most important in consumers' judgments of value. Theoretically, value has been described by researchers in many ways. However, existing literature emphasises four general meanings of value (Woo 1992). Table 2.11 synthesises the different meanings associated with value.

Table 2.11: General Meaning of Value

Rokeach (1973), Woo (1992)	Human values	Value is ‘what is of true worth to people in the broad context of the well-being and survival of individuals, and by extension, of the species as a whole’ (p.85).
Woo (1992)	Collective or objective value	Value is ‘what a society collectively sees as important regardless of whether or not such highly valued objects of consumption really contribute to his/her well-being’ (p.85).
Woo (1992)	Individual or subjective value	Value is ‘what the individual holds to be worthwhile to possess, to strive, or exchange for’ (p.85).
Woo (1992)	Value derived from purchase or consumption of products and services	Value is ‘the amount of utility that consumers see as residing in a particular object and they aim to maximise out of a particular act of buying or consuming’ (p.85).

The present study focuses on the value that is derived from the disposition of products and services and extends it to the service delivery channels choice generally, and specifically to the internet banking context. Based on the meta-analysis of the extensive literature on perceived value, Woodall (2003) distinguished four types of value with origins in economics and philosophy disciplines and these are presented in Table 2.12.

Table 2.12: Four Types of Value

Intrinsic value	Refers to the objective-based value that resides within the product, independent from market circumstances.
Exchange value	Also refers to objective-based value, but influenced by market circumstances.
Use value	Refers to subjective-based value and is related to consumers’ perceptions and evaluations of the product or service during and just after its use.
Utilitarian value	Also refers to subjective-based value and is seen as the outcome of a personal comparison of sacrifices and benefits associated with the product or service under consideration.

The diversity associated with the meanings of the value concept indicated the difficulty of conceptualisation of the value construct. In this study, value factors relate to consumers’ perceptions and expectations of value. The concept of perceived value stems from equity theory. Perceived value is identified as the ratio of the consumers’ outcome/input to that of the service providers’ outcome/input (Oliver & DeSarbo 1988).

In other words, the equity concept refers to customers' evaluation of what is fair, right or deserved for the perceived cost of the offering (Bolton & Lemon 1999). The choice of a particular banking service delivery channel, its subsequent acceptance, continued and frequency of usage depends on consumers' expectations of the value offered. It is important to understand what consumers' value for and what the important dimensions are, that play a critical role in their judgments of value offering. Perceived value represents a consumers' overall assessment of the utility based on perceptions of what is received and what is given (Zeithaml 1988). Also, perceived value is identified in the literature as a trade-off between the perceived benefits and perceived costs derived by the consumers from using a particular channel. Monetary payments and non-monetary sacrifices, such as time consumption and stress experienced by consumers, together include perceived costs (Yang & Peterson 2004), whereas, customer perceived value emerges from an evaluation of the relative rewards and sacrifices associated with the offering. Customer value is 'the fundamental basis for all marketing activity' (Holbrook 1994, p. 22).

It is evident from the existing literature that researchers used a wide variety of terms to define the construct of perceived value such as perceived value (Chang & Wildt 1994), customer value (Anderson & Narus 1998; Holbrook 1994), perceived customer value (Chen & Dubinsky 2003) and customer perceived value (Gronroos 2001). Perceived value in the marketing context is defined in several ways. The most commonly used definitions are presented in Table 2.13.

Table 2.13: Perceived Value Definitions

Chen & Dubinsky (2003)	Defined as 'a consumers' perception of the net benefits gained in exchange for the costs incurred in obtaining the desired benefits' (p. 326).
Woodall (2003)	Defined as 'any demand-side personal perception of advantage arising out of a customers' association with an organisation's offering, and can occur as reduction in sacrifice; presence of benefit (perceived as either attributes or outcomes); the resultant of any weighted combination of sacrifice and benefit (determined and expressed either rationally or intuitively); or an aggregation, over time, of any or all of these' (p.21).
Woodruff (1997)	Defined as 'a customer's perceived preference for and evaluation of those product attributes, attribute performances, and consequences arising from use that facilitate (or block) achieving the customers' goal and purposes in use situations' (p.142).

Table 2.13: Perceived Value Definitions

Ravald & Gronroos (1996)	Defined as ‘an important constituent of relationship marketing and the ability of a company to provide superior value to its customers is regarded as one of the most successful strategies’ (p.19).
Monroe (1990)	Defined as ‘a trade-off between the quality or benefits they perceive in the product relative to the sacrifice they perceive by paying the price’ (p.46).

The context dependent nature of perceived value has been confirmed unanimously by several researchers in the existing literature (Woodall 2003; Mathwick *et al.* 2001). The concept of value being context dependent is related to the differential perceptions that occur between objects, individuals and circumstances. Consumers’ perceptions regarding the value construct may vary in accordance with their decision-making process (Woodall 2003; Parasuraman & Grewal 2000). Similarly, consumers’ perceptions regarding the attributes and consequences which are relative to the value construct may also vary between their purchase, use and continued use situations. Product or service selection involves choice as consumers make an attempt to distinguish different alternatives and evaluate a particular alternative over others. In, usage situations, consumers relate value to the performance of the selected product or service. Thus the attributes that might be of importance to consumers’ initial purchase differ remarkably from the criteria that define value during and after use situations.

The literature focuses on the multidimensional nature of perceived value. Sheth *et al.* (1991) proposes a broader approach which concentrates on five dimensions of the value construct such as functional, social, emotional, epistemic and conditional value. The functional dimension is related to product quality and performance of the product, the social dimension is associated with the ability of the product or service to enhance the status of the consumers, the emotional dimension refers to the affective states, the epistemic dimension is concerned with the innovative aspect of the product or service and finally, the conditional dimension refers to the specific situations at which consumers make value judgments. De Ruyter *et al.* (1997) identified emotional, practical and logical dimensions of the value related to services context. Accordingly, the emotional dimension represents the affective side of the consumption experience, the practical dimension relates to the functional benefits of consumption and the logical dimension emphasises evaluation of the benefits against costs. Sweeney & Soutar (2001) developed a PERVAL

scale consisting of multiple items to measure the perceived value construct. The PERVAL scale consists of four dimensions based on quality/performance, price/value for money, emotional and social dimensions. Conditional and epistemic value dimensions are not included as they were identified as less critical for a general measure of perceived value. The PERVAL scale was tested in pre-purchase and post-purchase situations associated with consumer durables. Roig *et al.* (2006) identified perceived value to be a multidimensional construct with dimensions relating to functional value of the establishment, functional value of the personnel, functional value of the service, functional value price, emotional value and social value.

Though existing literature identifies several dimensions to the perceived value construct, the majority of the studies refer to a trade-off between all perceived benefits and perceived costs (Chen & Dubinsky 2003; Monroe 1990). Earlier research concentrated on explaining the perceived value concept in relation to products and product categories (Sirohi *et al.* 1998). It is only recently that researchers started to focus on other attributes in the service literature. Value judgments in the services context relate to evaluation of service quality (Zeithaml *et al.* 1996) and merchandise quality (Mazursky & Jacoby 1986). These approaches were criticised as they ignore the sacrifices made. Therefore, other studies indicate that value perceptions are influenced predominantly by benefits and monetary and non-monetary costs (Agarwal & Teas 2001; Teas & Agarwal 2000; Zeithaml 1988). Several researchers treated the perceived benefits and costs as components and antecedents to value (Baker *et al.* 2002; Dabholkar *et al.* 2000). Chen & Dubinsky (2003) made an attempt to measure perceived value in an electronic environment related to the e-commerce context, including dimensions relating to relevancy of information, ease of use, value for money and service offered.

Petrick (2002) developed a multidimensional scale, SERVPERVAL for the measurement of the services value based on the theoretical model of Zeithaml (1988). The SERVPERVAL framework consists of five dimensions of behavioural price, monetary price, emotional response, quality and reputation. Behavioural price relates to non-monetary aspects such as time and effort involved by consumers, the price of a service denoted by consumers constitutes the monetary price, emotional response refers to the pleasure that a service consumption offers to the consumer, overall excellence or superiority of a service related to consumers' judgment is the quality dimension and reputation is the status of the service perceived by the consumer. SERVPERVAL scale

initial measurements proved to be reliable and a valid measurement tool. Therefore, in the present study, the abovementioned value dimensions are used to investigate their impact on consumers' continued usage and frequency of usage of internet banking. Value perceptions are critical in the consumer behavioural context as they might result in differential behavioural consequences such as non-adoption, usage and continued usage of a service. From the consumers' perspective, value dimensions are essential for successful exchange transactions (Holbrook 1994).

To date the application of the perceived value construct to determine consumers' adoption of internet banking is scarce. However, there is a great deal of literature which focuses on the influence of perceived value on consumers' online and offline store choice. Laukkanen (2007) reported that efficiency, convenience and safety attributes are important value components in determining consumers' differences regarding internet and mobile banking service delivery channels. Different researchers tried to understand how consumers make their decisions and trade-off benefits and sacrifices (Lindgreen & Wynstra 2005). At the same time, marketers have sought to understand consumers' values, preferences or beliefs to measure and categorise consumer lifestyles. Thus, there has been an increasing realisation over the past decades that existing customers represent a valuable asset to the firm. Maintaining existing customers is often considered to be more profitable than acquisition of new customers. One point of importance is that, consumers representing a greater net present value than others are critical from the service provider's perspective. Therefore, service providers have to constantly monitor and succeed in retaining their consumers in order to increase their profits and sales, as retention of unprofitable consumers destroys value (Hammond & Ehrenberg 1995).

Therefore, in the present study perceived benefits and perceived costs will be included as a value-related factors in order to identify their influence on consumers' continued and frequent use of internet banking. The value factor specific to the financial entities is further referred as the value for money factor.

2.15 CONTINUED USAGE AND FREQUENCY OF USAGE

Continuance theory within the discipline of information systems stems from initial research in marketing. Expectation-confirmation theory emerged from the consumer behaviour and services marketing literature and has proven broadly robust in a number of services contexts (Dabholkar *et al.* 2000). The general thrust of this theory is the

assessment of post-purchase intentions as influenced by initial expectations about a product or service, subsequent adoption and use and the formation of perceptions about performance as influenced by the confirmation, determining the level of satisfaction with a purchase and subsequent repurchase (Bhattacharjee 2002). The focus on the continued usage construct in this research is in line with a core body of previous information systems research (Legris *et al.* 2003).

Frequency of usage refers to how often the product or service is used, regardless of the product or service functions used, or the different applications for which the product or service is used. Thus, frequency of usage is identified in the existing literature as analogous to the depth of usage of a particular product or service (Gatignon & Robertson 1985). Karjaluoto *et al.* (2002), based on consumers frequency of technology usage, categorised non-users, low frequent users (one to three times per month) and high frequent users (more than three times per month). In another study, Curran *et al.* (2003) grouped self-service technology users as infrequent users (less than 25% of the time) and regular users (more than 25%). In the present study, consumers continued usage and frequency of usage are the dependent variables on which the influence of technology, channel, social and value for money factors will be examined.

2.16 RESISTANCE TO INNOVATION

Since the present research will obtain data from internet banking non-users from the qualitative open-ended questions included in the questionnaire, it is important to understand the existing literature on barriers to consumers' adoption of internet banking. The open-ended questions relating to the qualitative data were developed for the purpose of the present research alongside the quantitative scales. Most of the theoretical perspectives which emerged from internet banking research were a result of quantitative studies involving testing of the questionnaires. A comparison of quantitative and qualitative research in the internet banking research is presented in Table 2.14.

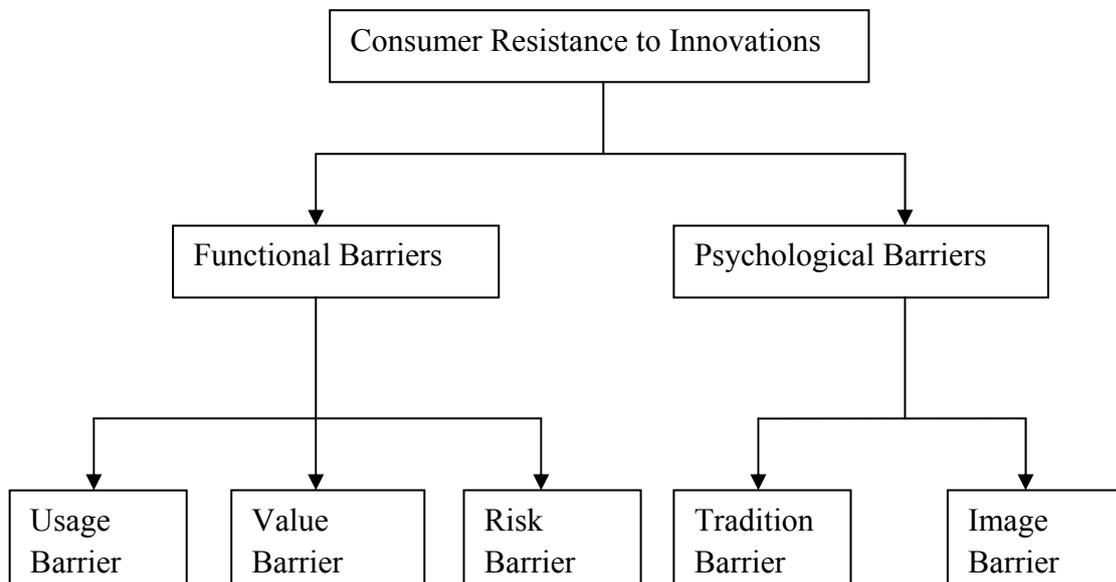
Table 2.14: Quantitative versus Qualitative Studies Existing in Internet Banking Research

Years	1998-2000	2001-2003	2004-2006	Total
Quantitative	6 (85.7%)	22 (73.3%)	18 (94.1%)	46 (85.2%)
Qualitative	1 (14.3%)	6 (26.7%)	1 (5.9%)	8 (14.8%)
Total	7 (100%)	30 (100%)	17 (100%)	54 (100%)

Source: Shao 2007

From the table it is evident that there exists a notable gap between the quantitative and qualitative approaches taken so far in the internet banking research. Therefore, the present study makes an attempt to include the qualitative component in the questionnaire.

For the purpose of the present study, internet banking is identified as a service innovation. In the existing literature, non-adoption of a specific innovation by consumers is related to innovation resistance theory. Innovation resistance is defined as resistance offered by consumers to an innovation, either because it poses potential changes from a satisfactory status quo or because it conflicts with consumers' belief structure (Ram & Sheth 1989). Innovation resistance is also determined as 'a preference for existing, familiar products and behaviours over novel ones' and is often considered as a special form of resistance to change (Arnould *et al.* 2004, p.722). The non-adoption of an innovation in the literature has been explained through functional and psychological barriers (Ram & Sheth 1989). These are displayed in Figure 2.6.



Source: Ram & Sheth (1989)

Figure 2.6: Consumer Resistance to Innovations

Functional barriers refer to usage, value and risk barriers, whereas psychological barriers refer to tradition and image barriers (Ram & Sheth 1989). The usage barrier is related to the usability and required changes of an innovation from the consumers (Chircu & Kauffman 2000). The value barrier is related to the monetary value component attached to an innovation, and the risk barrier refers to the perceived risk associated with an innovation (Fain & Roberts 1997). The tradition barrier is associated with the consumer's social values and social norms, while the image barrier originates from stereotyped thinking about an innovation (Ram & Sheth 1989).

If the factors hindering the use of internet banking are strong enough, frequently cited benefits of internet banking do not seem to materialise as the value of the internet banking cannot be realised. In the adoption studies, convenience has been identified as an important adoption factor (Thornton & White 2001). Consumers who resisted internet banking believed that they did not need high levels of convenience (Chung & Paynter 2002). Also, lack of prior use of internet banking inhibited consumers from the actual use of the service (Chung & Paynter 2001). Many consumers were simply unaware of internet banking and its unique benefits (Sathye 1999). Non-users considered internet banking to be difficult, inconvenient, have poor relative advantage and slow to use (Kuisma *et al.*

2007). If internet banking fails to offer any functions not previously available to the consumers, the degree of use of the service is relatively low (Fain & Roberts 1997). Lack of experience can inhibit consumer usage of internet banking service as it can be perceived as resulting in improper banking transactions (Speece 2000).

Concerns associated with the private information and context confidentiality may hinder consumers from using internet banking eliciting the importance of issues related to privacy and security (Gerrard *et al.* 2006; Pavlou 2003). Moreover, consumers necessarily do not identify a need to use a new channel and are reluctant to shift from their traditional banking practices (Gerrard *et al.* 2006). Consumers may have a negative image of computers in general and the internet service delivery channel in particular (Fain & Roberts 1997). Usage of internet banking could be restricted if there is a lack of consumer trust. Three reasons for which consumers do not trust internet technology relate to security of the system, distrust of service providers, and worries about the reliability of internet services (Lee & Turban 2001; Min and Galle 1999). Reputation is also considered to be important, as distrust of the service provider is a related factor (Jarvenpaa *et al.* 1999).

The risk associated with the service is also a frequently cited reason for non-usage of internet banking (Gerrard *et al.* 2006). Risk is related to reliability and system failure (Walker *et al.* 2002). Risk usually arises from the uncertainty when consumers cannot foresee the consequences of their usage of a certain product or service (Walker *et al.* 2002). Demographics may be relevant in understanding the usage patterns of internet banking. Recent studies confirm the difficulties of attracting mature age group consumers towards internet banking usage (Ilett 2005). Studies reported that gender also may be a relevant factor in influencing consumer resistance to use internet banking, as women regarded privacy protection and ethical standards more seriously than men (Shergill & Li 2005).

The present study makes an attempt to elicit the key factors that are hindering consumers' usage of internet banking in the Australian context. Furthermore, available literature with various contributing theories in this area attracts for a strong foundational basis and a need to enhance service oriented knowledge (Romano & Fjermestad 2003; Zuboff & Maxmin 2003).

2.17 TOWARDS A CONCEPTUAL MODEL

2.17.1 Gaps in the Literature

The following eight areas are identified as the specific relevant gaps in existing literature that helped to shape the focus for the present research. First, the existing literature in the context of internet banking was shown to focus heavily on factors affecting consumers' intention to adopt and their actual adoption of internet banking. Other streams of research, though to a lesser extent in comparison to adoption studies, investigated factors that hinder consumers' adoption of internet banking. Thus the existing research focuses almost exclusively on consumers' pre-adoption behaviour. It is evident from the literature that there exists a lack of proper understanding of consumers' usage patterns of internet banking. Therefore, the present study aims to examine consumers' continued usage and frequency of usage of internet banking, two areas of research that concentrate on consumers' post-adoption behaviour. Moreover, the study also intends to examine the potential factors that might influence consumers' continued usage and frequency of usage of internet banking.

Second, the studies related to consumers' intention to adopt, adoption and non-adoption of internet banking relate to the pre-adoption and adoption stages of the decision-making process. It has been identified from the existing literature that consumers' decision-making and their subsequent evaluation of the products and services under consideration differ in the post-adoption stage in comparison with pre-adoption and adoption stages. Therefore the present study focuses on consumers' continued usage and frequency of usage of internet banking which are specifically related to the post-adoption stage of consumer decision-making behaviour.

Third, since the literature pertaining to the consumer's usage of internet banking is scarce, the present study investigates antecedents to consumers' continued usage and frequency of usage of internet banking.

Fourth, the existing literature on internet banking research reviews internet banking from the consumer perspective either through theoretical models of the technology acceptance or the application of diffusion of innovations theory. There are only a few studies that have applied a combination of behavioural theories and diffusion of innovations theory to assess the consumer's adoption of internet banking. It is only recently that researchers have begun to understand the importance of integrating different

theoretical perspectives within an investigation. The present study integrates theoretical models of technology acceptance and diffusion of innovations theory to understand consumers' post-adoption behaviour.

Fifth, the influence of certain sub-dimensions of channel and value factors was far from conclusive in many studies. Thus, the present study examines the relationships between technology, channel, social and value for money factors as they explain consumers' usage patterns of internet banking on a continual and frequent basis in order to identify relevant antecedents.

Sixth, there are not many existing studies on internet banking research that examine a logically-specified hierarchical ordering of antecedent influences on relevant dependent variables. The present study specifies the hierarchical order preferred by consumers based on the theoretical and logical grounds identified from the literature in order to examine consumers' continued usage and frequency of usage of internet banking.

Seventh, existing internet banking research is quantitatively oriented, usually through survey data obtained from consumers. The present study uses a triangulated methodology employing both quantitative and qualitative components thus enriching the results and findings.

Lastly, since most of the reviewed theories were developed in the cultural context of the USA, questions can logically be raised concerning the generalisation of these theories and their conceptualisations to different cultural contexts. Therefore, this research seeks to empirically clarify the dimensionality of each of the reviewed theories and constructs in an Australian context.

2.17.2 Overall Conceptual Framework

The conceptual framework shown in Figure 2.7 has a predictive intent. The demographic characteristics include gender, age, level of education, level of income, ethnicity and occupation. During the quantitative phase of the research, it will be important to avoid the potentially confounding and spurious effect of the demographic characteristics of respondents in the study. Therefore, as the first step in the hypothesis process, their influence will be statistically controlled for by partialling out any relationship they have with relevant dependent variables. These variables are identified in Figure 2.7 simply to clarify their role and positioning within the overall conceptual framework.

Each of the major constructs in the model, apart from the demographic variables, has a previously theorised dimensional structure. However, in the Australian context, these theorised dimensions will need to be clarified for suitability. Technology factors theoretically encompass relative advantage, compatibility, complexity, trialability and result demonstrability components. Channel factors theoretically comprise perceived self-efficacy, perceived risk, perceived trust and perceived personalisation components. Social factors theoretically consist of subjective norm and interpersonal influence components. Value for money factors theoretically consist of perceived benefits and perceived costs components. Technology, channel, social and value for money factors are all theorised to be predictive, in a specifically ordered manner, of both consumers' continued usage of internet banking and frequency of usage of internet banking.

The specific order of entry of the predictor variables was based on the theoretical and logical considerations. Demographic characteristics are not of research interest as their influence has been widely acknowledged in the existing research. Therefore, demographic characteristics will be statistically controlled for in order to avoid any confounding effects they might exert on the predictor variables. This will be accomplished by entering the demographic set of variables first in the hierarchical predictive model. Technology factors related to the context of internet banking will be entered into the model at the second step and are expected to significantly predict consumers' continued usage and frequency of usage of internet banking over and above the variability explained by the demographic set. Technology-related factors were considered to be important, as consumers, during their post-adoption, tend to be more confident with the use of the technology-enabled internet banking service delivery channel. In the third step, channel factors will be entered to significantly predict consumers' continued and frequency of usage of internet banking over and above the influence exerted by the demographic characteristics set and technology factors. The order of entry of channel-related factors was based on the theoretical foundations and the role attributed to the consumers' psychographics in the existing literature (Black *et al.* 2002). In the fourth step, social factors will be entered in to the model and will be expected to significantly predict variability in the criterion variables over and above the previously entered demographics set, technology and channel factors. The order of entry of the social factors was of theoretical importance, asserted to the influence of the peers, friends and family members in influencing consumers' behaviour, once the consumer

encompasses contextual and psychological factors. Finally, value for money factors will be entered into the model expected to significantly predict the criterion variables over and above those of previously entered predictor variables.

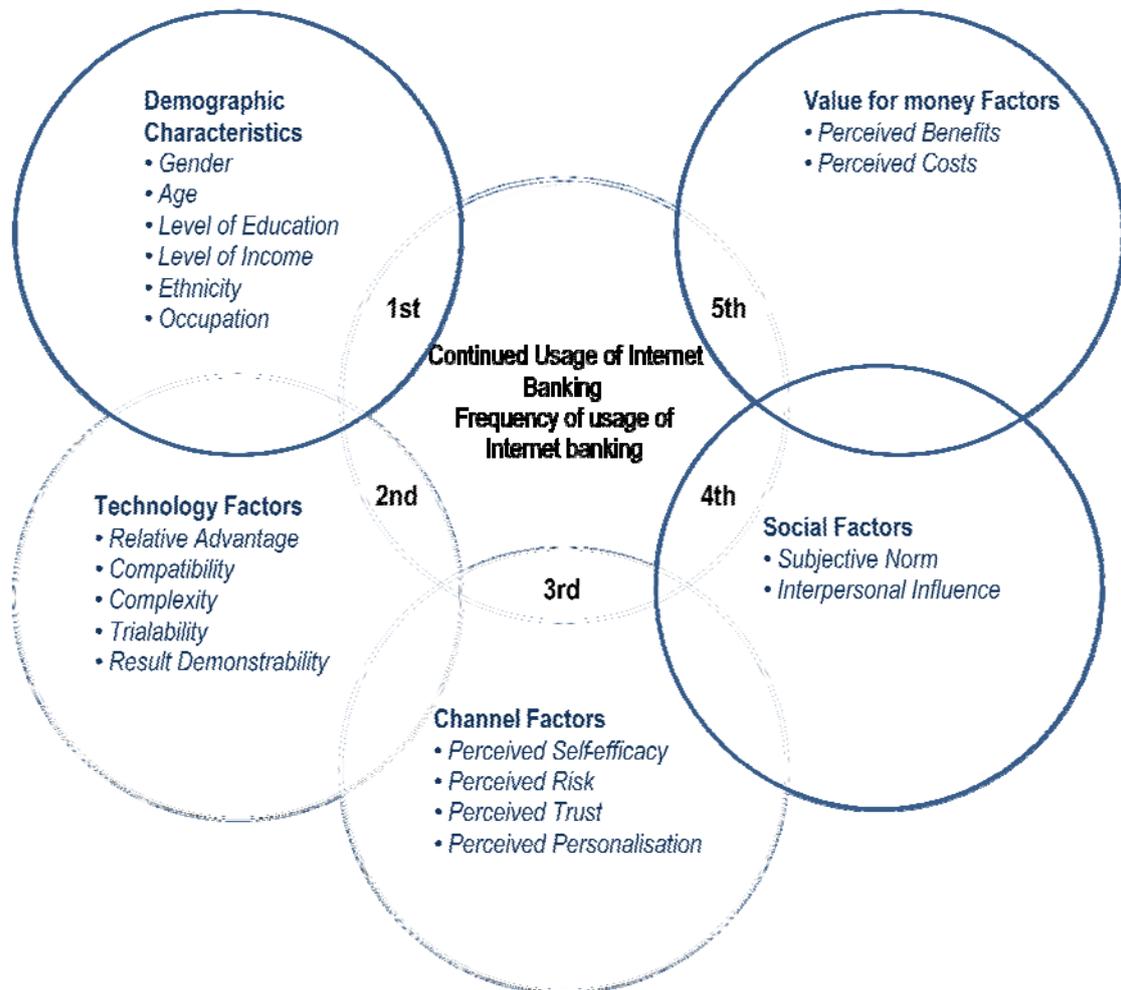


Figure 2.7: Overall conceptual framework showing the order in which variables sets will be considered in the prediction of Continued Use of Internet Banking and Frequent Use of Internet Banking

[Note that the Figure 2.7 is representational only; the sizes of the overlaps or absences of overlaps between variable sets are not intended to be meaningful in this representation. The numbered overlap areas are the key to the research hypotheses.]

2.18 RESEARCH QUESTIONS

From the above research objectives numerous hypotheses have been developed in order to explore the questions that arise from those research objectives. Based on the synthesis of the available literature in the internet banking research context, the following research questions will be tested in the present study. The research questions below are

stated in the form of research hypotheses. Technology, channel, social and value for money factors will be hypothesised to explore the significance in terms of their ability to predict consumers' continued usage and frequency of usage of internet banking. As demographic characteristics are not central to the research objectives, their influence will be statistically controlled for in order to provide more reliable tests of the other research hypotheses. The influence of demographic characteristics on consumers' acceptance, intention to adopt and adoption of internet banking and internet shopping were discussed in the previous sections of this chapter (see Section 2.5). However, for the purpose of the present research, demographic characteristics will be statistically controlled for in terms of their influence in the prediction model to achieve more powerful tests of the theoretical variables of interest. Prior to any hypothesis testing, each theoretical construct will be subjected to factor analysis in order to identify and clarify their dimensionality and structure in the Australian context. Therefore, based on the previous discussion of literature the following research hypotheses will be explored in the thesis.

H_{1A}: Identified technology factors will significantly predict continued usage of internet banking over and above the influence of the demographic control variables.

H_{1B}: Identified technology factors will significantly predict frequency of internet banking usage over and above the influence of the demographic control variables.

The stated hypotheses H_{1A} and H_{1B} are based on the discussion on the technology factors and the overall conceptual framework (see Section 2.11 and Section 2.17).

H_{2A}: Identified channel factors will significantly predict continued usage of internet banking over and above the influence of the demographic control variables and technology factors.

H_{2B}: Identified channel factors will significantly predict frequency of internet banking usage over and above the influence of the demographic control variables and technology factors.

The aforementioned hypotheses H_{2A} and H_{2B} are based on the discussion on the channel related factors and the overall conceptual framework (see Section 2.12 and Section 2.17).

H_{3A}: Identified social factors will significantly predict continued usage of internet banking over and above the influence of the demographic control variables, technology and channel factors.

H_{3B}: Identified social factors will significantly predict frequency of internet banking usage over and above the influence of the demographic control variables, technology and channel factors.

The hypotheses H_{3A} and H_{3B} relate to the earlier discussion on the social factors and the

overall conceptual framework (see Section 2.13 and Section 2.17).

H_{4A}: Identified value for money factors will significantly predict continued usage of internet banking over and above the influence of the demographic control variables, technology, channel and social factors.

H_{4B}: Identified value for money factors will significantly predict frequency of internet banking usage over and above the influence of the demographic control variables, technology, channel and social factors.

The abovementioned hypotheses H_{4A} and H_{4B} are based on the discussion about value factors and the overall conceptual framework (see Section 2.14 and Section 2.17).

2.19 SUMMARY

This chapter reviewed a diverse range of research findings on the subject of internet banking from areas of consumer behaviour, services marketing, information systems research and financial services marketing. Theoretical models of technology acceptance, diffusion of innovations theory and the consumers' decision-making process in the context of consumer post-adoption behaviour were reviewed and finally an assessment of the various theories was presented. Literature related to the potential factors of technology, channel, social and value, encompassing various theorised sub-dimensions, were explicated through meaningful interpretations. A brief description of the criterion variables was provided. The importance of qualitative studies in the context of internet banking research was highlighted and a review of consumers' resistance to innovation was presented. Gaps in the literature were identified, leading to the development of the conceptual framework and several research hypotheses were presented at the end of this chapter to be tested in Chapter Four. Next, Chapter Three sets out the research methodology by operationalising the various constructs identified as important in this chapter.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

In Chapter Two the existing literature and research carried out with regard to the main concepts such as technology, channel, social and value factors associated with the continued and frequent use of internet banking were discussed. The conceptual framework for the research and its associated research hypotheses were set out at the end of Chapter Two. This chapter outlines the research methodology used for the collection of the primary data necessary for addressing the research questions. The chapter describes the research design, followed by a discussion of the sampling procedure, the operationalising of the various theoretical constructs used in the study and a discussion of the quantitative and qualitative data analysis approaches. Details pertaining to the questionnaire design, data collection techniques and approaches to analysing the quantitative and qualitative data are also described.

3.2 RESEARCH PARADIGM

A paradigm may be viewed as a set of beliefs that deal with ultimate or first principles (Guba & Lincoln 1994). A paradigm serves as a guide to the professionals in a discipline, for it indicates what the important problems and issues are which confront the discipline and develops an explanatory scheme (i.e., models and theories) which can place these issues and problems in a framework that will allow practitioners to try to solve them. A paradigm also establishes the criteria for the appropriate 'tools' (i.e., methodologies, instruments and types and forms of data collection) to use in solving these disciplinary puzzles; provides specific criteria by which the quality of research, carried out under its guidance, can be judged; and provides an epistemology in which the preceding tasks can be viewed as organising principles for carrying out the 'normal work' of the discipline. Paradigms not only allow a discipline to 'make sense' of different kinds of phenomena but provide a framework in which these phenomena can be identified as existing in the first place (Filstead 1979, p. 34).

The researcher's goals, in conjunction with the nature of the research topic to be investigated, profoundly influence the research paradigm alignment (Collis & Hussey 2003). The present study attempted to test theoretical propositions using operationally defined constructs measured via survey methodology (Arnold *et al.* 2005). This aligned

the research with the general tradition of objectivism and positivism (Church & Waclawski 1998). The intention was to evaluate the explanatory contributions of specific sets of antecedent constructs in a hierarchical fashion so that each construct could be seen in light of its ability to predict the usage patterns of consumers using internet banking.

3.3 RESEARCH FRAMEWORK

The research framework adopted for this study was presented in Table 1.1 in Chapter One based on the hypothetico-deductive methodology (Sekaran 2003). A literature review helped to identify the measures of various potential factors. The key objective of the research design was to assess consumer beliefs and attitudes as they related to the continued and frequent use of internet banking. The most universally adapted tool to collect data on consumer beliefs and attitudes is the self-reporting technique, in the form of a self-administered questionnaire (De Vaus 2002; Malhotra *et al.* 1996). Based on the literature review and available scales, a cross-sectional survey questionnaire was developed and distributed to intercepted respondents who agreed to participate in the study in the foyer of a busy shopping mall in Sydney, Australia. A few open-ended questions were added to the survey to obtain rich qualitative data in addition to quantitative measures, in an attempt to realise some degree of convergence triangulation (Creswell & Plano Clark 2007, p. 106). A cross-sectional survey was found to be useful, partly because of the advantages associated with this method such as the low costs involved in implementation, as well as the relatively low demands it places on the respondents (Malhotra *et al.* 1996; Zikmund 2003). Furthermore, implementation of this method can generally yield increased response rates relative to other data gathering strategies enhancing the prospects of achieving a larger sample size, which is a high priority for multivariate statistical analyses (Zikmund 2003).

3.4 SURVEY DEVELOPMENT

3.4.1 Survey Research and Survey

Survey methodology is used ‘to answer questions that have been raised, to solve problems that have been posed or observed, to assess needs and set goals, to determine whether or not specific objectives have been met, to establish baselines against which future comparisons can be made, to analyse trends across time, and generally, to describe what exists, in what amount, and in what context’ (Isaac & Michael 1997, p. 136). It

embodies a data collection tool for carrying out the research. By definition a survey is a ‘means for gathering information about the characteristics, actions, or opinions of a large group of people’ (Pinsonneault & Kraemer 1993, p. 77).

3.4.2 Questionnaire Development

The survey instrument consisted of questions pertaining to respondent’s general banking habits and internet usage, demographic characteristics, scale items and open-ended questions, organised into logical sections. Questions related to general banking behaviour, internet usage and demographic characteristics were incorporated in the questionnaire irrespective of the respondent’s internet banking usage pattern. To begin with, the questionnaire consisted of an open-ended question asking the non-users of internet banking to give the reasons why they do not use internet banking. If respondents did not use internet banking they were thanked for their participation and then screened out of the survey. The questionnaire then goes on to obtain answers from internet banking users, which contained items on technology, channel, social, value for money and continued use factors. All the five scales representing the major variables were well established scales whose validity and reliability had been established in previous studies. Furthermore, the survey also had an open-ended qualitative section included at the end in order to collect the respondent’s opinions about their internet banking patterns from the users of internet banking.

3.4.3 Operationalisation of the Constructs

In order to test a theoretically-derived hypothesis, it is necessary to develop measures of the constituent concepts. This process is often referred to as ‘the operationalisation of the constructs’ (Sekaran 2003). The following is a discussion about how the constructs for the survey were operationalised.

3.4.3.1 General Banking Behaviour

The existing literature indicates that customer knowledge of banking products and services, customer resources, as well as customer information reception and processing capabilities all have an impact on the consumer’s adoption of electronic banking channels (Polatoglu & Ekin 2001; Karjaluoto *et al.* 2002; Gerrard & Cunningham 2003). Therefore, in order to understand the general banking patterns of the respondents, certain background questions were included in the questionnaire. Questions B1 and B2 included

in the questionnaire (see Appendix B) asked the respondents about the banking products that they were currently using and other banking products that they were likely to use in the next six months. Both questions allowed the respondents to tick as many responses as appropriate.

Question B1 asked which of the following banking products are the respondents currently using. Options consisted of the following categories: (1) Savings Account, (2) Current Account, (3) Credit Card, (4) Debit Card, (5) Foreign Exchange Trading, (6) Personal Loan, (7) Mortgage, (8) Insurance, (9) Car Loan, (10) Securities Trading, (11) Overdraft, (12) Investment Fund, (13) Others (with respondents requested to specify). Question B2 asked, apart from the products that respondents are currently using, which other banking products are they likely to use in the next six months. Categories included were similar to those incorporated in question B1: (1) Savings Account, (2) Current Account, (3) Credit Card, (4) Debit Card, (5) Foreign Exchange Trading, (6) Personal Loan, (7) Mortgage, (8) Insurance, (9) Car Loan, (10) Securities Trading, (11) Overdraft, (12) Investment Fund, (13) Others (with respondents requested to specify). Question B3 asked the respondents how many different bank services they are currently using. The question consisted of five categories: (1) One, (2) Two, (3) Three, (4) Four, (5) Five and Over.

Internet banking is an advanced technology dependent on computer networks and often consumers tend to use a new technology when the relationship between the new and previous technology is complementary (Bayus 1987). Experience with using ATM, teletext and prior computer experience such as use of the internet and email, making electronic payments etc., were found to significantly influence electronic banking usage (Karjaluoto *et al.* 2002; Igbaria *et al.* 1995). Also, heavy users of banking services might adopt and further use internet banking as a convenient option that can save time and effort (Lee & Lee 2001). From the existing literature it is evident that there exists a substantive relationship between the electronic connectivity and the rate of internet banking adoption (Igbaria *et al.* 1995). Therefore, questions B4 to B7 included in the questionnaire (see Appendix B) ask the respondents about their general internet usage, type of internet connectivity and place of accessing the internet.

Question B4 asked the respondents about how long have they been using the internet and consisted of the following categories: (1) Less than 6 months, (2) 6 months –

Less than 1 year, (3) 1 year – Less than 2 years, (4) 2 years - Less than 3 years, (5) 3 years – Less than 5 years, (6) Above 5 years. Question B5 asked the respondents how many hours they spend on the internet on an average per day and the following categories were included: (1) Less than 1 hour, (2) 1 hour – Less than 2 hours, (3) 2 hours – Less than 3 hours, (4) 3 hours – Less than 4 hours, (5) 4 hours – Less than 5 hours, (6) More than 5 hours. Question B6 asked the respondents about the type of internet connectivity that they have: (1) Broadband, (2) Dial up, (3) Others (with respondents requested to specify). Question B7 asked the respondents where they access the internet: (1) Office, (2) Home, (3) Public Library, (4) Internet centre/café, (5) Others (with respondents requested to specify). Information pertaining to questions B1 to B7 was collected from both the users and non-users of internet banking, whereas, questions B8 to B11 consisted of information relevant to internet banking users only and asked them about their access to and frequency of using internet banking transactions.

Question B8 asked internet banking users where they access the internet for performing their banking transactions: (1) Home, (2) Office, (3) Public Library, (4) Internet centre/café, (5) Others (with respondents requested to specify). Question B9 asked the respondents how frequently they use internet banking on an average per week: (1) Fewer than once, (2) Once a week, (3) 2 times a week, (4) 3 times a week, (5) 4 times a week, (6) 5 times a week, (7) More than five times a week. Question B10 asked the respondents to rank the different banking types based on their frequency of use (1 for the most frequently used bank type) and consisted of the options bank branch, ATM, telephone banking, internet banking, mobile banking and others (with respondents requested to specify). Question B11 asked the respondents to indicate the range of internet products or services they were currently using: (1) Account information, (2) Balance inquiry, (3) Electronic bill payments, (4) Funds transfer, (5) Loan application, (6) Securities trading, (7) Cheque book application/cancellation, (8) Others (with respondents requested to specify).

3.4.3.2 Demographic Characteristics

Previous research indicated inconsistent results with regard to the impact of demographic characteristics on the adoption of internet banking by consumers. With regard to the gender, females were found to exhibit greater computer anxiety compared to males, while others found no gender differences (Teo 2001; Igbaria & Chakrabarti 1990;

Parasuraman & Igarria 1990). Young, affluent and highly educated consumers generally accepted changes more readily and favoured internet banking acceptance (Gan *et al.* 2006; Polatoglu & Ekin 2001). Level of education was found to positively influence the adoption of internet banking. Consumers with a higher level of education were found to readily adopt internet banking (Hernandez & Mazzon 2007). Employment level was found to significantly and positively influence the consumer's adoption of electronic banking (Gan *et al.* 2006). High income consumers were found to use electronic banking less while pursuing complex transactions and dealing with large sums of money and often preferred to have personal contact with the bank staff (Gan *et al.* 2006). On the contrary, in another study, internet banking was found to be attractive to those consumers in higher income brackets (Gartner 2003b; Kolodinsky *et al.* 2000). Consumers' ethnic background was an influential factor in influencing their adoption rate (Katz & Aspden 1997). The present study collected the following demographic data from the respondents.

- Gender: consisted of two categories (1) Male and (2) Female
- Age: represented in seven ordinal categories (1) 18–21 (2) 22–25 (3) 26–30 (4) 31–40 (5) 41–50 (6) 51–60 (7) 61 or over
- Highest level of education: (1) Primary school, (2) Secondary (or high) school, (3) Vocational education and training (TAFE), (4) Higher education (university).
- Personal gross annual income: (1) \$20 000 and under (2) \$20 001-\$35 000 (3) \$35 001–\$50 000 (4) \$50 001-\$65 000 (5) \$65 001-\$80 000 (6) \$80 001 and over.
- Ethnicity: (1) Anglo-Australian, (2) Asian, (3) English, (4) Middle Eastern, (5) New Zealand, (6) Others (with respondents requested to specify).
- Occupation: (1) Manager, (2) Professionals, (3) Academic, (4) Student, (5) Self-employed, (6) Executive, (7) Technician, (8) Retiree, (9) Housewife, (10) Others (with respondents requested to specify).

Data relating to the demographic characteristics were collected using six items, D1 to D6 included in section two of the main survey questionnaire.

3.4.3.3 Non-users of Internet Banking

In order to identify the actual reasons that inhibit consumers' internet banking transactions as well as non-users' preferences for other service delivery channels in the Australian context, the following questions were included in the questionnaire. Section three of the questionnaire consists of three questions NU1, NU2 and NU3.

Question NU1 asked the respondents whether they were current users of internet banking or not: (1) Internet banking users (respondents whose answer would be ‘Yes’), (2) Internet banking non-users (respondents whose answer would be ‘No’). Question NU2 was intended only for non-users of internet banking, asking them which other channel they use to conduct their banking transactions if they were not internet banking users. Four options were presented: (1) Bank branch, (2) ATM, (3) Telephone banking, (4) Mobile banking. Question NU3 was included in section three as an open-ended question ‘Could you please tell us your reasons for not using internet banking to perform your banking transactions?’

3.4.3.4 Technology Factors

Technology factors included in the present study were operationalised in a manner consistent with previous internet banking studies in other research contexts (Hernandez & Mazzon 2007; Chan & Lu 2004; Tan & Teo 2000; Moore & Benbasat 1991). For this study, technology factors were measured using a 17 item scale consisting of five sub-dimensions (Moore & Benbasat 1991). Data were collected from the respondents who were current internet banking users, using 17 items from TD1 to TD17, which used a six-point Likert scale defined as (1) Strongly Agree, (2) Agree, (3) Neither Agree nor Disagree, (4) Disagree, (5) Strongly Disagree, and (6) Unable to Rate. As shown in Table 3.1, the sub-dimensions measured with regard to the technology factors included:

- Relative Advantage: consisted of five items (TD1, TD2, TD3, TD4 and TD10)
- Compatibility: consisted of three items (TD6, TD7 and TD8)
- Complexity: consisted of three items (TD5, TD9 and TD11)
- Trialability: consisted of three items (TD12, TD13 and TD14)
- Result Demonstrability: consisted of three items (TD15, TD16 and TD17)

All the items included within the theorised sub-dimensions were obtained from scales already validated in the literature by carefully analysing the items to be included in the questionnaire.

Table 3.1: Technology Factors including Theorised Sub-dimensions and Various Items

Theorised sub-dimensions	Items included	Item numbers	Reverse coding required
Relative Advantage	Internet banking makes it easier for me to conduct my banking transactions.	TD1	No
Relative Advantage	Internet banking gives me greater control over my finances.	TD2	No
Relative Advantage	Internet banking allows me to manage my finances more efficiently.	TD3	No
Relative Advantage	Internet banking is a convenient way to manage my finances.	TD4	No
Complexity	Internet banking can be frustrating.	TD5	Yes
Compatibility	Internet banking is compatible with my lifestyle.	TD6	No
Compatibility	Using internet banking fits well with the way I like to manage my finances.	TD7	No
Compatibility	Using the internet to conduct banking transactions fits into my working style.	TD8	No
Complexity	Internet banking requires a lot of mental effort.	TD9	Yes
Relative Advantage	Internet banking is useful for managing my financial resources.	TD10	No
Complexity	Internet banking is an easy way to conduct banking transactions.	TD11	No
Trialability	Prior to the actual adoption, internet banking is available for me to use on a trial basis.	TD12	No
Trialability	I am able to use internet banking to see what it can do for me prior to the actual adoption.	TD13	No
Trialability	I have a great deal of opportunity to try internet banking before the actual adoption.	TD14	No
Result Demonstrability	The results of using internet banking are apparent to me.	TD15	No

Table 3.1: Technology Factors including Theorised Sub-dimensions and Various Items

Theorised sub-dimensions	Items included	Item numbers	Reverse coding required
Result Demonstrability	I believe I could communicate to others the consequences of using internet banking.	TD16	No
Result Demonstrability	I would have difficulty explaining to others why using internet banking may be beneficial.	TD17	Yes

In an earlier study, Hernandez & Mazzon (2007) reported that the uni-dimensionality of constructs was investigated by means of an exploratory factor analysis. The principal components extraction method was adopted and the results were subjected to the varimax rotation method (Devellis 2003). Relative advantage, result demonstrability, compatibility and trialability dimensions were identified and entered into the subsequent analysis. The study used a large sample of 300 internet banking users, 150 internet/non-internet banking users and 150 non-internet/non-internet banking users from Brazil. The resulting Cronbach's alpha coefficient values were higher than 0.7 for all the constructs identified (Nunnally 1978).

Another study by Tan & Teo (2000) examined the factors that influence the adoption of internet banking by consumers in Singapore. A web based questionnaire was administered to collect data from personalised emails or data from newsgroups, public mailing lists and hyperlinks. Data were collected from a total of 454 sets. Relative advantage, compatibility, complexity and trialability were the dimensions that were identified and entered into further analysis. All the items loaded above the cut off value of 0.4 (Hair *et al.* 2006). The reported Cronbach's coefficient alpha values were from 0.6254 to 0.9406 and the constructs were identified to have adequate reliability and discriminant validity.

It is evident from the existing adoption studies related to internet banking that the sub-dimensions relative advantage, compatibility, trialability and result demonstrability exhibited a positive and significant influence (Hernandez & Mazzon 2007; Chan & Lu 2004; Tan & Teo 2000; Cooper & Zmud 1990; Holak & Lehmann 1990; Tornatzky & Klein 1982). The complexity dimension with regard to the adoption studies indicate that

the more complex a service is perceived by the consumers, the less likely it is to be adopted (Tan & Teo 2000; Cooper & Zmud 1990).

3.4.3.5 Channel Factors

Channel factors were operationalised in accordance with work by Hernandez & Mazzon (2007), Chan & Lu (2004), Tan & Teo (2000), Rhee & Riggins (1997), Bhimani (1996), Cockburn & Wilson (1996) and Lee (1996). For the purpose of this study, channel factors were measured using the 15 item scale consisting of four sub-dimensions (Hernandez & Mazzon 2007; Tan & Teo 2000). Data were collected from the respondents who were current internet banking users, using 15 items from CD1 to CD15, which used a six-point Likert scale defined as (1) Strongly Agree, (2) Agree, (3) Neither Agree nor Disagree, (4) Disagree, (5) Strongly Disagree, and (6) Unable to Rate. As shown in Table 3.2, the sub-dimensions measured with regard to the channel factors included:

- Perceived Self-efficacy: consisted of five items (CD1, CD2, CD3, CD4 and CD5)
- Perceived Risk: consisted of four items (CD6, CD7, CD8 and CD9)
- Perceived Trust: consisted of three items (CD10, CD11 and CD12)
- Perceived Personalisation: consisted of three items (CD13, CD14 and CD15)

The items included in the sub-dimensions were obtained from scales already validated in the existing literature related to the adoption, intention to adopt and internet banking contexts. The items included in the perceived self-efficacy, perceived risk, perceived trust and perceived personalisation sub-dimensions were identified from the existing literature associated with work by Chan & Lu (2004), Gan *et al.* (2006), Herington & Weaven (2007) and Srinivasan *et al.* (2002).

Table 3.2: Channel Factors including Theorised Sub-dimensions and Various Items

Theorised sub-dimensions	Items included	Item numbers	Reverse coding required
Perceived Self-efficacy	I am confident of using internet banking even if there is no one around to show me how to use it.	CD1	No
Perceived Self-efficacy	I am confident of using internet banking if I have built-in online “help” function for assistance.	CD2	No

Table 3.2: Channel Factors including Theorised Sub-dimensions and Various Items

Theorised sub-dimensions	Items included	Item numbers	Reverse coding required
Perceived Self-efficacy	I am confident of using internet banking even if have only the online instructions for reference.	CD3	No
Perceived Self-efficacy	I am confident of using internet banking if I see someone else using it before I try it myself.	CD4	No
Perceived Self-efficacy	I am confident of using internet banking if I could call someone for help if I got stuck.	CD5	No
Perceived Risk	I am confident that internet banking in Australia is secure.	CD6	No
Perceived Risk	Information concerning my internet banking transactions can be accessed by others.	CD7	Yes
Perceived Risk	Performing internet banking transactions makes me feel psychologically uncomfortable.	CD8	Yes
Perceived Risk	Internet banking transactions could lead to an inefficient use of my time.	CD9	Yes
Perceived Trust	Internet banking is trustworthy.	CD10	No
Perceived Trust	I trust in the ability of internet banking to protect my privacy.	CD11	No
Perceived Trust	Using internet banking is financially secure.	CD12	No
Perceived Personalisation	Performing internet banking makes me feel that I am a unique customer.	CD13	No
Perceived Personalisation	Internet banking websites provide information that is tailor-made for me.	CD14	No
Perceived Personalisation	The promotional offers that I receive through internet banking transactions are attractive to me.	CD15	No

The items included in the self-efficacy sub-dimension were adapted from previous studies (Hernandez & Mazzon 2007; Chan & Lu 2004; Tan & Teo 2000; Compeau & Higgins 1995). In a study by Tan & Teo (2000), self-efficacy was found to influence the

adoption of internet banking in Singapore (N = 454). Cronbach's coefficient alpha values were computed to test for construct reliability and were identified as adequate (0.8767). The factor analysis conducted satisfactorily and met the conditions of convergent and discriminant validity with a minimum reported factor loadings of 0.4. In another study comprised of a sample of 183 internet banking users in Hong Kong by Chan & Lu (2004), the maximum likelihood method was employed using the varimax rotation. All the items exhibited factor loadings of more than 0.8 and a construct reliability of 0.938. In a study by Hernandez & Mazzon (2007) involving a Brazilian sample, the self-efficacy measure was validated by means of exploratory factor analysis using principal components extraction and varimax rotation. The communalities extracted from all the items were higher than 0.7 and there were no cross-loadings superior to 0.3. Bartlett's Sphericity test was significant at one percent and the resulting Cronbach's alpha coefficients were more than 0.7.

The items included for the perceived risk dimension were obtained from existing studies (Gan *et al.* 2006; Tan & Teo 2000; Rhee & Riggins 1999; Bhimani 1996; Lee 1996; Cockburn & Wilson 1996). Gan *et al.* (2006) examined the factor structure of the perceived risk sub-dimension using a maximum likelihood factor analysis. In that study, consistent with Zeithaml & Bitner's (2003) study of the theoretical framework related to the consumer decision-making process related to the services, Gan *et al.* (2005) found that all the items included under the perceived risk dimension exhibited satisfactory internal consistency reliability with a Cronbach's alpha value of 0.6 and above. Gabriel & Nyshadham (2008) studied the risk characteristics as well as perceived risks associated with USA consumers using factor analysis with varimax rotation. Reliability was assessed on the basis of the internal consistency by obtaining the Cronbach's alpha coefficients (more than 0.8).

Items included in the trust sub-dimension were obtained from well established scales used in the existing literature (Herington & Weaven (2007); Ribbink *et al.* (2004); Mukherjee & Nath 2003; Wang *et al.* 2003; Black *et al.* 2001; Hoffman *et al.* 1999; Sathye 1999). In a study by Herington & Weaven (2007), the impact of online service quality on the level of customer relationship development was explored using a convenience sample of 200 Australian respondents and using an online banking trust component measured with items previously used by Ribbink *et al.* (2004). A single factor

was to represent the trust measure which explained 55 percent of the variance. In a study in Doha, Qatar using the trust-relationship commitment model and its influence on internet banking, Kassim & Abdulla (2006) used 276 bank customer responses. The research focused on Gronroos (2001) theoretical framework and employed confirmatory factor analysis. The reliability, convergent and discriminant validity were estimated by Cronbach's alpha coefficient, composite reliability and average variance. Cronbach's alpha values obtained were adequate (> 0.70) and factor loadings obtained were relevant except for one item which was subsequently dropped from further analysis.

The items included in the perceived personalisation construct were obtained from the existing studies (Huang & Lin 2005; Coner 2003; Srinivasan *et al.* 2002; Winsor *et al.* 2002; Mittal & Lassar 1996). In a study related to customer-oriented financial service personalisation by Huang & Lin (2005), the items included in the perceived personalisation construct were confirmed by adopting a Delphi study. In another study by Mittal & Lassar (1996) focusing on the role of personalisation in service encounters, data obtained from USA respondents ($N = 233$) were subjected to factor analysis for validation of the scale items. Factor analysis of four items of personalisation yielded a single factor with eigenvalues greater than one. This single factor captured 73.9 percent of the variance. Factor loadings reported for the four items were greater than 0.75 and Cronbach's alpha value was greater than 0.90.

3.4.3.6 Social Factors

Social factors were operationalised consistent with work by Chan & Lu (2004), Venkatesh & Davis (2000), Tan & Teo (2000) and Taylor & Todd (1995). In this study, social factors were measured using the six item scale consisting of two sub-dimensions. Data were collected from the respondents, who are current internet banking users, using six items from SD1 to SD6, which used a six-point Likert scale defined as (1) Strongly Agree, (2) Agree, (3) Neither Agree nor Disagree, (4) Disagree, (5) Strongly Disagree, and (6) Unable to Rate. As shown in Table 3.3, the sub-dimensions measured with regard to the social determinants included:

- Subjective Norm: consisted of three items (SD1, SD2, and SD3)
- Interpersonal Influence: consisted of three items (SD4, SD5 and SD6)

The items included in the sub-dimensions were obtained from scales validated in previous studies (Tan & Teo 2000) related to the adoption, intention to adopt and internet banking contexts.

Table 3.3: Social Factors including Theorised Sub-dimensions and Various Items

Theorised sub-dimensions	Items included	Item numbers	Reverse coding required
Subjective Norm	My decision to use internet banking is influenced by my friends.	SD1	No
Subjective Norm	My decision to use internet banking is influenced by my family members.	SD2	No
Subjective Norm	My decision to use internet banking is influenced by my colleagues.	SD3	No
Interpersonal Influence	I frequently gather information from friends about internet banking before I actually perform any transactions.	SD4	No
Interpersonal Influence	I often check with others to make sure that I am properly using internet banking.	SD5	No
Interpersonal Influence	I often observe how others conduct their banking transactions before I actually perform any transactions.	SD6	No

In a study related to the adoption of internet banking by Hernandez & Mazzon (2007) with a sample of 300 internet banking users from Brazil, items related to the subjective norm construct were defined according to the influence that friends, family and workmates may have on the adoption of internet banking. The uni-dimensionality of the items was investigated by means of exploratory factor analysis. The principal components extraction method was adopted and results were submitted to the varimax rotation method. The Cronbach's alpha coefficient values reported were greater than 0.70 which indicates that the items had adequate internal consistency and reliability.

In an attempt to understand the internet banking adoption and use behaviour by Chan & Lu (2004) with a large sample of 499 university students in Hong Kong, items related to social determinants were subjected to exploratory and confirmatory factor analyses. Items included in the sub-dimension subjective norm reported significant factor

loadings of 0.92, 0.86 and 0.95. Cronbach's alpha values were found to be greater than 0.70 and the results indicated that all the scale items are reliable. In a study related to information technology adoption across time by Karahanna *et al.* (1999) involving a sample of 268, the items included in subjective norm and informational influence constructs when subjected to exploratory factor analysis exhibited good reliabilities with alpha values greater than 0.80.

3.4.3.7 Value for money Factors

Value for money factors were operationalised in accordance with work by Thomas & Sullivan (2005), Keen *et al.* (2004), Petrick (2002), Zeithaml *et al.* (2002), Sweeney & Soutar (2001) and Cronin & Taylor (1992). In this study, value for money factors were measured using the eight item scale consisting of two sub-dimensions. Data were collected from the respondents who were current internet banking users, using eight items from VD1 to VD6, which used a six-point Likert scale defined as (1) Strongly Agree, (2) Agree, (3) Neither Agree nor Disagree, (4) Disagree, (5) Strongly Disagree, and (6) Unable to Rate. As shown in the Table 3.4, the sub-dimensions measured with regard to the value for money factors included:

- Perceived Benefits: consisted of five items (VD1, VD2, VD3, VD5 and VD6)
- Perceived Costs: consisted of three items (VD4, VD7 and VD8)

The items included in the sub-dimensions were obtained from validated scales derived from previous studies (Petrick 2002; Zeithaml *et al.* 2002) related to the adoption, intention to adopt, internet banking and internet shopping contexts.

Table 3.4: Value for money Factors including Theorised Sub-dimensions and Various Items

Theorised sub-dimensions	Items included	Item numbers	Reverse coding required
Perceived Benefits	Internet banking is very reliable.	VD1	No
Perceived Benefits	Internet banking is of outstanding quality.	VD2	No
Perceived Benefits	Internet banking provides easy access to information.	VD3	No

Table 3.4: Value for money Factors including Theorised Sub-dimensions and Various Items

Theorised sub-dimensions	Items included	Item numbers	Reverse coding required
Perceived Costs	I am happy with the price charges for performing internet banking.	VD4	No
Perceived Benefits	Internet banking has a good reputation in Australia.	VD5	No
Perceived Benefits	Internet banking transactions can be performed with very little effort.	VD6	No
Perceived Costs	Performing internet banking transactions is the right decision when price and other expenses are considered.	VD7	No
Perceived Costs	Internet banking transactions are economical.	VD8	No

In a study by Roig *et al.* (2006) related to customer perceived value in banking services involving 200 customers of financial entities in Spain, in order to validate the scale items confirmatory factor analysis was carried out. Sub-dimensions identified relate to perceived benefits and costs associated with the value factor. The factor loadings reported were higher than 0.5, the probabilities associated with the chi-squared statistic were all higher than 0.05 and the composite reliabilities of each construct were close to unity. In another study by Zeithaml *et al.* (2002), the value of the consumer was recognised as a trade-off between perceived benefits and the sacrifices made in the form of perceived costs. All the items, when subjected to factor analysis, reported adequate factor loadings as well as alpha values.

3.4.3.8 Continued Use Factors

Continued use factors were operationalised consistent with work by Hernandez & Mazzon (2007), Chan & Lu (2004), Tan & Teo (2000) and Venkatesh & Davis (2000). In this study, continued use factors were measured using a three item scale without any sub-dimensions. Data were collected from the respondents who were current internet banking users, using three items from UD1 to UD3, which used a six-point Likert scale defined as (1) Strongly Agree, (2) Agree, (3) Neither Agree nor Disagree, (4) Disagree, (5) Strongly Disagree, and (6) Unable to Rate.

Table 3.5: Items included for Continued Use Factors

Items included	Item numbers	Reverse coding required
Internet banking usage is a positive experience for me.	UD1	No
I intend to use internet banking regularly to perform my banking transactions.	UD2	No
I intend to increase my use of internet banking transactions in future.	UD3	No

The items included were derived from adoption and intention to adopt internet banking studies (Chan & Lu 2004; Tan & Teo 2000) and subsequently modified to suit continued usage and frequency of using internet banking. In a study related to understanding internet banking adoption and use behaviour in Hong Kong by Chan & Lu (2004), intention to adopt or continual usage was used as a dependent variable. Items included in the scale subjected to initial factor analysis yielded factor loadings greater than 0.80 and all the factor loadings reported were significant at an alpha level of 0.01. In another study focusing on the factors influencing the adoption of internet banking in Singapore by Tan & Teo (2000), factor analysis was performed to validate the scale items. All the items included in the study exhibited factor loadings greater than 0.4 with eigenvalues greater than one. Cronbach's alpha coefficient value reported was more than 0.60.

3.4.3.9 Respondents Opinions

At the end of the questionnaire, in section nine, three open-ended questions (see Appendix C) were asked to obtain the opinions of the respondents towards internet banking patterns and their experience towards the use of internet banking in their own words. Specifically, the three items were:

- O1. As an internet banking user, under what circumstances do you use other ways to conduct your banking transactions?
- O2. Are the electronic banking methods offered by banks oriented towards the customer's needs and wants?
- O3. Would you like to offer any further comments about your experiences with internet banking?

These items formed a small qualitative component of the research, intended to enhance the credibility of the quantitative findings and perhaps provide insights which the construct definitions and/or measurements may have missed. The advantages associated with the inclusion of open-ended questions relate to the possibility of discovering the responses that respondents give spontaneously and avoiding the bias that may result from suggesting responses to the respondents (Reja *et al.* 2003).

3.4.4 Information Confidentiality and Ethics Approval

The University of New England's (UNE) Human Research Ethics Committee (HREC) granted approval for the project to be conducted by the researcher on 23/05/2008 with an approval number HE08/078. The approval was granted to the project, based on a submission of the background and aims of the research to be undertaken, along with a preliminary draft of the survey.

3.4.5 Pretesting the Questionnaire

The survey instrument was pretested and modified prior to its actual administration to the respondents. Pretesting was considered to be a very important part of the questionnaire construction process and involved testing the research instrument on a small sample of respondents under conditions as similar as possible to those envisaged for the actual data collection stage.

3.4.5.1 Purpose of pretesting

In survey research, pretesting is considered as an essential step as it almost invariably brings to light item ambiguities and other sources of bias and error (Couper 2005; Converse & Presser 1986). Pretesting the questionnaire helps:

- To identify problems in question content, wording and sequencing.
- To test the layout of the questions, difficulty in answering the questions, if any, and instructions.
- To increase the likelihood that respondents will complete the survey.
- To discover ways to raise participant interest.
- To explore ways to increase the quality of the survey data.

Pretesting was done by following the collaborative approach (Bryman & Bell 2003). During the pre-test process, the questionnaire was distributed to several

postgraduate (PhD) students and faculty members (25) in the School of Business, Economics and Public Policy at the University of New England who are internet banking users. A short covering letter was provided along with the questionnaire which introduced the purpose of the survey. A debriefing procedure was allowed after completion of the questionnaire, during which respondents were then encouraged to describe the meaning of each question, explain their answers, and to state any problems they encountered while answering the questionnaire. The following questions were included at the end of the pre-test questionnaire for respondents' feedback on the physical appearance, layout, clarity of wording, face validity of the instrument, time to complete and overall content of the survey questionnaire.

- Do you think the questionnaire is too lengthy?
- Have you experienced any difficulty in providing answers to any questions included in the questionnaire?
- Is the questionnaire time demanding?
- Does the questionnaire consist of any words that are not easily understood?
- Is there any difficulty in reading the questions exactly as worded?
- Are design and layout of the questionnaire pleasant?
- Do any of the questions touch sensitive issues?
- Is the flow of the questions logical?
- Do you think any changes are required to the structure of the questionnaire?
- Are any questions seemingly repeated?
- Is the space provided for the open-ended questions sufficient?
- Are the instructions provided in the questionnaire understood easily?
- Are any questions missing in the questionnaire according to your expectations on the topic?

Based on the pre-test results the following changes were recommended by the respondents which would increase the clarity of the questionnaire (see Appendix C).

With regard to question B10 in section one, which asked the respondents to rank various methods of banking types based on their frequency of use, respondents suggested providing more space for their answers. Therefore, extra space was provided in the main survey questionnaire to fit in the respondent's answers. In the demographics questions in section two, question D6 asked the respondents about their occupation based on the

Australian Occupation Codes (ASCO 2008) by providing categories (1) Manager, (2) Professional, (3) Academic, (4) Student, (5) Self-employed, (6) Executive, (7) Technician, (8) Retiree, (9) Housewife, (10) Others (with respondents requested to specify). However, the majority of the respondents suggested that it would be better to rephrase occupation as an open-ended question. As such, the occupation variable was displayed as an open-ended question in the final questionnaire. In the instructions provided before every section of the questionnaire, a majority of the respondents asked the researcher to underline or highlight the word 'tick'. The word 'tick' was highlighted in the final questionnaire.

Questions TD12, TD13 and TD14, representing the trialability sub-dimension of the technology factors, were modified in the final questionnaire based on the feedback obtained from the pre-test. TD12 was changed from 'Internet banking is available for me to use on a trial basis' to 'Prior to the actual adoption, internet banking is available for me to use on a trial basis'. TD13 was modified from 'I am able to use internet banking to see what it can do for me' to 'I am able to use internet banking to see what it can do for me prior to the actual adoption'. TD14 was changed from 'I have a great deal of opportunity to try internet banking' to 'I have a great deal of opportunity to try internet banking before the actual adoption'. In section six some of the respondents had problems with the wording of SD5. Therefore in the final version of the questionnaire the wording of the scale item has been changed from 'I often consult others to make sure that I am properly using internet banking' to 'I often check with others to make sure that I am properly using internet banking'.

The scale defining the response number format consisting of the Likert-scale items 'Strongly Agree', 'Agree', 'Neither Agree nor Disagree', 'Disagree', 'Strongly Disagree' and 'Unable to Rate' was provided separately above the tables consisting of scale items related to technology, channel, social, value and continued usage factors. Based on the feedback obtained from the pre-test, the scale defining the response number format was integrated to correlate with the tables containing the various scale items.

3.4.6 Main Survey Questionnaire

Before responding to the main survey questionnaire the respondents were asked to sign the consent form and an information sheet (see Appendix A and Appendix B) was provided to them. The information sheet provided details about the purpose of the study, anticipated completion date of the research, eligibility criteria for participation, method of survey administration and mode of data collection. Moreover, the information sheet reinforced the respondent's right to participate voluntarily. Also, it informed respondents that they could withdraw at any time from the survey and stressed the fact that any information they provided would be kept confidential to the researcher and her supervisors and their name would not be associated with any responses they provided. A time estimate of twenty minutes (20) to complete the questionnaire was provided on the information sheet based on the pre-test undertaken. Details related to the researcher and her supervisors in the form of contact numbers and email addresses were provided on the information sheet as well as on the consent form so that respondents could follow up queries if they had any. The final survey was comprised of seventy (70) items made up of forty-nine (49) Likert-scale items, eleven (11) general banking behaviour items, six (6) demographic items and four (4) open-ended items (see Appendix C). The respondents took approximately twenty (20) to twenty-five (25) minutes to complete the survey.

3.5 MODE OF DATA COLLECTION

The present research involved testing a proposed conceptual framework. Primary data were collected from users as well as non-users of internet banking by a cross-sectional mall intercept survey.

3.5.1 Procedures for Data Collection

Once the survey instrument was refined with the help of supervisors, the researcher sought approval from the University of New England's Human Research Ethics Committee (HREC). The researcher's application to the HREC included an information sheet and a consent form apart from the survey questionnaire. The information sheet (see Appendix B) was a letter to the respondents willing to participate in the survey. This information sheet explained the purpose of the survey, participation eligibility criteria and the method of survey administration and collection. It also provided information related to the purpose of the research and how the data collected would be

handled and stored. The information sheet provided to the respondents clearly explained how the data obtained would be analysed and reported. Moreover, the information sheet informed the respondents of their right to voluntarily participate or withdraw at any time, and highlighted the fact that their participation would be kept confidential and anonymous. Respondents who agreed to participate in the survey were asked to sign the consent to participate form (see Appendix A).

After receiving HREC's approval, the researcher contacted the various shopping malls operating in Sydney using emails, telephone and fax. The literature suggests that usually data from marketing studies involving survey questionnaires in the banking context is obtained either by conducting the survey within the bank premises or in the foyer of a busy shopping mall (Baker 1999; Malhotra *et al.* 1996). Due to security issues the mall intercept survey was found to be more feasible for the researcher than conducting the survey on the bank premises. Out of the various shopping malls that were contacted in Sydney, only two of them in the Western Sydney region allowed the researcher to conduct the survey. The researcher obtained permission to conduct the survey within the foyer of their shopping mall from the authorities in the Western Sydney region. The questionnaire was administered by the researcher to potential respondents who were either entering or exiting the shopping mall. Upon approaching the potential respondents and obtaining their consent to fill out the questionnaire, the researcher checked whether they were customers of the retail banks operating in Australia and are current users of internet banking or not. Accordingly the questionnaires were distributed to both users and non-users of internet banking. The respondents filled out the questionnaires within the area provided to the researcher for conducting the survey by the shopping mall authorities. The questionnaires from the survey were collected over a four month period from June 2008 to September 2008 in order to obtain a valid sample.

3.5.2 Sampling

As mentioned earlier, the study aimed at obtaining relevant research data from users and non-users of internet banking. The researcher was interested in identifying potential factors influencing consumers continued usage and frequency of usage of internet banking in an Australian context. The researcher was also interested in whether factors influencing consumers' pre-adoption of internet banking, which have emerged mostly from American studies, are relevant in the Australian context and whether or not

the same factors are responsible for influencing consumers' post-adoption behaviour such as continued usage and frequency of usage of internet banking. The issue of generalisability of American approaches has been raised by other researchers (Yousafzai *et al.* 2005). Moreover, existing marketing literature recently pointed towards the distinctions between consumers' adoption, their continued usage and frequency of usage of internet banking (Kasheir *et al.* 2009; Eriksson & Nilsson 2007).

Sampling is the process of selecting a number of individuals for a study in such a way that they represent the larger group from which they were selected (Gay & Airasian 2000). All willing volunteer respondents thus formed the total sample. The present research was conducted in the Sydney region, as it is a financial centre in Australia, as well as the location where a majority of the retail banks conduct their operations. The questionnaire was distributed to both the users and non-users of internet banking. Out of the 1308 respondents intercepted in the foyer of the shopping mall, 698 respondents answered the survey questionnaire. Of these questionnaires obtained, only 683 questionnaires were valid with complete responses, thus indicating 52.5 percent of the response rate. Among the 683 usable questionnaires, 372 were completed by users and the remaining 311 by non-users of internet banking.

3.6 APPROACHES TO DATA ANALYSIS

Data analysis is concerned with sensitising social researchers to the use, interpretation and evaluation of relevant data, rather than with the more formal understanding of statistics (Sekaran 2003). Raw data collected typically reaches the researcher either in quantitative or qualitative forms. Quantitative research seeks to quantify the data and typically applies some form of statistical analysis. On the other hand, qualitative research is a field of inquiry and is surrounded by a complex, interconnected family of terms, concepts and assumptions. The following section sets out various quantitative and qualitative data analysis approaches that are appropriate to answer the research goals established in the present study.

3.6.1 Quantitative Data Analysis Approaches

3.6.1.1 Data Preparation

Initially all questionnaires obtained were checked for completeness. Vetting of the questionnaires obtained was done by the researcher with the objective of increasing

accuracy and precision. Vetting was done by screening the questionnaires to identify illegible, incomplete, inconsistent and ambiguous responses. A coding process was followed involving the assignment of a code to represent a specific response to a specific question along with the data record and column position that code will occupy. Data coding is the process of assigning numbers to the levels of each variable. Whilst performing data coding it was ensured that all the data were numeric, each variable for each respondent occupied the same column in the SPSS data editor, all the codes assigned for a variable were mutually exclusive, each variable was coded in order to obtain maximum information and coding rules were applied consistently for all respondents (Cohen *et al.* 2003). Coded data were entered from the questionnaires to SPSS 17.0 computer program (SPSS 2008). The SPSS data records were checked thoroughly and extensively for consistency and missing responses as part of the data cleaning process.

3.6.1.2 Initial Approach to Analysis of the Quantitative Data

The initial screening of the data was accomplished by subjecting the data to descriptive statistical analysis in SPSS. Descriptive statistics describe patterns and general trends in a data set. Descriptive statistics are a bridge between measurement and understanding (Bonett 2002), and are used in the initial phase of statistical analysis to identify relationships in the data and to determine directions for further analysis. Descriptive statistics often use pictorial or graphical representation of the data or computation of a number designed to summarise a particular characteristic of a data sample. Descriptive statistics look for missing data patterns and attempt to establish that no variable is missing in more than four percent of cases (Wright 2002).

Frequency tabulation provides a convenient counting summary for a set of data and thus facilitates further interpretation. Display of frequency tabulation for a set of data is often referred to as the frequency distribution. A frequency distribution table presents the frequency data, usually in order of size. Usually the frequencies may be summarised as percentages and percentile values. A detailed description of the sample characteristics is provided in Chapter Four. Frequency distributions were obtained for all the demographic data. The data were checked for its normality assumptions. In order to make the data suitable for further analysis, data transformations were performed in the form of logarithmic transformations.

Based on the theoretical and empirical guidelines, the study used exploratory factor analysis for data reduction and summarisation. Factor analysis is an interdependence technique and each variable is expressed as a linear combination of underlying factors (Cooksey 2007). Assessment of suitability of the data for further analysis needs to take into consideration two main issues: determining whether a particular data set is suitable for factor analysis sample size, and the strength of the relationship among the variables or items. Tabachnick & Fidell (2001, p. 588) suggest that 'it is comforting to have at least 300 cases for factor analysis'. Some authors suggest that it is not the overall sample size that is of concern but rather the ratio of subjects to items. Nunnally (1978) recommends a total ten to one ratio, that is, ten cases for each item to be factor analysed, and others suggest that five cases for each item is adequate in most cases (Tabachnick & Fidell 2001). A second issue to be addressed concerns the strength of the inter-correlations among the items. Tabachnick & Fidell (2001) recommend an inspection of the correlation matrix of evidence of coefficients greater than 0.3. Two statistical measures that help to assess the factorability of the data are the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of Sphericity (Kaiser 1970, 1974; Bartlett 1954). KMO measure of sampling adequacy varies between zero and one, and values closer to one are better. A value of 0.6 is a suggested minimum. Bartlett's test of Sphericity tests the null hypothesis and further represents that the correlation matrix is an identity matrix.

In order to obtain more interpretable solutions, rotation is to be specified. With an oblique rotation, such as promax rotation, the factors are permitted to be correlated with one another (Widerman 1993). Promax rotations produce pattern matrix, factor structure matrix and factor correlations matrix (Cooksey 2007). The factor pattern matrix represents the linear combination of the variables with coefficients typically ranging between -1.0 and +1.0. The factor structure matrix represents the Pearson correlations between the variables and the factors and is often called the factor loading matrix (Pett *et al.* 2003). The factor correlation matrix provides the estimation of the degree of correlation that might exist between the factors (Raubenheimer 2004).

Eigenvalues summarise the variance explained by each factor in the variables out of the total available. Scree plots provide a rough indication of the number of factors to be interpreted. A scree test involves plotting each of the eigenvalues of the factors and

interpreting the plot to find a point at which the shape of the curve changes direction and becomes horizontal (Catell 1966). Only factors, whose eigenvalues are greater than one are to be accepted for further analysis (Afifi & Clark 1996). Communalities represent the proportion of each variable's variance that can be explained by the factors. It is the sum of the squared factor loadings for the variable. Stevens (1992) and Field (2000) recommend interpreting only factor loadings with an absolute value more than 0.4.

The variables used to operationally define each major construct were factor analysed separately (technology, channel, social, value for money and continued use factors). Once the factors were identified, Cronbach's alpha internal consistency reliability coefficients were computed for each identified factor. Respondents were given scores on each identified factor by averaging the scores for the item comprising each factor (a unit-weighted factor scoring scheme). Categorical variables, prior to their use as predictors in multiple regression analyses, were dummy coded (Thompson 2006).

Hierarchical multiple regression was chosen as the appropriate method for analysing the power of the predictors (e.g., demographics, technology, channel, social and value for money factors) to explain variance in the continued use of internet banking by Australian consumers. The demographic variables were entered first into the regression model, thereby controlling their influence on continued use of internet banking. Hierarchical logistic regression was chosen as the relevant statistical tool for analysing the frequency of using internet banking by Australian consumers in the context of the various predictor variables,

3.6.1.3 Hierarchical Multiple Regression

A sequential or hierarchical analysis of a set of independent variables may produce the coefficients necessary to answer the research questions at hand. In its simplest form, in a prespecified sequence, the k sets of independent variables were entered sequentially and the change in R^2 and partial regression and correlation coefficients were assessed as each set of independent variables joins the others (Reja *et al.* 2003). A full hierarchical procedure for k sets of independent variables conceptually consists of a series of k regression analyses, each with one more variable set than its predecessor. The choice of entering independent variables in a particular sequence was made in advance, dictated by the purpose and logic of the research (Greene 1990). Some of the basic principles underlying the hierarchical order for entry were causal or temporal

priority and the removal of the confounding relationships, research relevance, and structural properties of the research factors being studied. The relationship between any variable and Y (dependent variable) may be partly or entirely spurious. Thus, each variable in the investigation was entered only after other variables that may be a potential source of a spurious relationship had been entered. This led to a sort of ordering of the variables that reflects their presumed causal or temporal priority. Thus, no independent variable set entered later would be a presumptive cause of an independent variable that had been entered earlier.

Overall, the hierarchical multiple regression analysis will assess if the successive addition of technology, channel, social and value for money factors will improve the prediction of continued use of internet banking by Australian consumers beyond that afforded by demographic characteristics and all other previously entered predictor sets. The specific order of entry of the predictor sets was as follows:

- Demographic characteristics
- Technology factors
- Channel factors
- Social factors
- Value for money factors

The logical development of this prespecified order of the predictor sets is based on the entry of more stable and logically prior individual characteristics to more general and dynamic contextual factors. Thus, demographic characteristics whose effects are to be controlled for were entered first into the model, followed by contextual factors such as technology, channel, social and value for money factors based on the theoretical importance. When a set of predictors comprising more than one predictor is exhibiting a significant contribution to prediction, partial F -tests for the regression coefficients for each individual variable in that set will be used as a quasi post-hoc test for assessing the contribution of each individual variable. The individual partial F -tests for predictors entered at that step would give the best indication of that predictor's potential, assuming the set as a whole achieves significance when entered (Cooksey 2007). Thus the R^2 values, F change and significance values obtained would give the best indication of the predictor's potential.

Focusing on tests of squared semi-partial correlations; at each step of the hierarchical multiple regression models, the set of independent variables of interest was entered. Then (a) the R^2 change at that step was evaluated using a partial F -test; and (b) if the R^2 for the set was identified to be significant, individual variables inside the set would be evaluated for their contribution to the prediction system. For tests of individual independent variables contributions within a set, the Part Correlations (semi-partial correlations) will be tested using a partial F -test. This process will be repeated for each step as it treats single independent variable tests within a set as post-hoc tests conditional on establishing the significance of the set as a whole first (Cohen *et al.* 2003).

An F -test was evaluated as significant if $p < 0.05$ and marginally significant if $0.05 < p \leq 0.10$ based on the resulting output. The choice of error term for all model Partial F - tests is Model II error free of any systematic contributions, at the cost of having the least degrees of freedom for the residual or error term (Cohen *et al.* 2003). Model I errors, which is a standard used by SPSS in all regression F and t -tests, may be contaminated by systematic variance yet to be removed at a later step.

Inferences about sets of variables in hierarchical regression need adjustments as all potential variables do not enter the equation at the same time, sample R^2 is not distributed as F , and the variance may be misleading as the F ratio reflects a Model I error rate in excess of alpha. Thus the calculation of Model II errors for squared semi-partial correlations using partial F -test formula is often recommended (Cohen *et al.* 2003).

$$Partial\ F = \frac{R^2_{change} / df_{change}}{(1 - R^2_{last\ step}) / df_{residual\ last\ step}}$$

Where the F for each independent variables set (F) is based on R^2 change (variance explained by the variable set added at that step), the degrees of freedom for the variables in the set being tested, R^2 at the final step (when all independent variable sets have been entered), and the residual degrees of freedom from the final step.

In order to test the contribution of each individual variable, measured by sr^2 (part or semi-partial correlation) using Model II error, the following formula was used to calculate partial F :

$$Partial F_i = \frac{sr^2/1}{(1 - R^2_{last\ step}) / df_{residual\ last\ step}}$$

where the F_i for each independent variable (F_i) is based on sr^2 (the squared semi-partial or part correlation for the variable at the step of entry), the multiple R^2 at the final step, and residual degrees of freedom from the final step.

3.6.1.4 Hierarchical Logistic Regression

Logistic regression is used to predict a dependent variable on the basis of continuous and/or categorical independents and to determine the percent of variance in the dependent variable explained by the independents, to rank the relative importance of independents, to assess interaction effects and to understand the impact of covariates as control variables (Hosmer & Lemeshow 2000). The impact of predictor variables is usually explained in terms of odds ratios. Logistic regression combines the independent variables to estimate the probability that a particular event will occur. Logistic regression does not make any assumptions of normality, linearity and homogeneity of variance for the independent variables (Jaccard 2001).

The minimum number of cases per independent variable is ten and the preferred case-to-variable ratio is twenty to one for simultaneous and hierarchical logistic regression and fifty to one for stepwise logistic regression (Menard 2002). Hierarchical method of logistic regression was followed in which control variables were entered in the analysis before the predictors whose effects were of primary concern. The number of cases being 372, the minimum requirement for conducting the hierarchical logistic regression was passed. Logistic regression uses maximum-likelihood estimation to compute the coefficients and the overall measure of the model fit is estimated by the likelihood value which is similar to the residual or error sum of squares value for multiple regressions. The significance test for the hierarchical logistic regression by addition of the predictor variables is based on the block chi-square in the omnibus tests of model coefficients (Allison 1999).

The output for logistic regression begins with no independent variables as Block 0: Beginning Block, and reports the initial -2 Log likelihood as a measure of the error associated trying to predict the dependent variable without using any information from

the independent variables (O'Connell 2005). The difference between ending and beginning -2 Log likelihood is the model chi-square that was used in the test of overall statistical significance. Logistic regression computes correlation measures to estimate the strength of the relationship (pseudo R² measures such as Nagelkerke R²). The Nagelkerke measure adapts the Cox-Snell measure so that it varies from zero to one (Pampel 2000). However, the abovementioned correlation measures do not actually depict much about the accuracy of errors associated with the model.

A more useful measure to assess the utility of a logistic regression is classification accuracy. It compares predicted group membership based on the logistic model to the actual (McKelvey & Zavoina 1994). Omnibus tests of model coefficients support the existence of a relationship between the independent and dependent variables. The test of significance for the relationship between an individual independent variable and the dependent variable is determined by the significance test of Wald statistic. The individual coefficients represent change in the probability of being a member of the modelled category. The Exp (B) represents the change in the odds of the modelled event associated with a one unit change in the independent variable.

As the research question concerns the predictive power of a set of predictor variables on a dichotomous outcome variable, the hierarchical logistic regression model was employed to test the research hypotheses stated in Chapter Two (Tabachnick & Fidell 2001). According to the binary logistics model, the probability of a consumer choosing to perform internet banking 'less than or equal to once a week' or 'more than once a week' can be modelled as a nonlinear function of the linear combination of main effects as,

$$\text{Probability of consumers' frequent use of internet banking} = e^Y / (1+e^Y)$$

Where,

$$Y = b_0 + b_1X_1 + b_2X_2 + \dots + b_kX_k \quad \dots \dots \dots (1)$$

and X₁, X₂,X_k are predictors, and b₁, b₂,b_k are the corresponding coefficients with b₀ as the constant. The predictors represent the main effects of the hypothesised variables. This linear regression transforms to the following logit model,

$$\text{Log (Probability of consumers' frequent use of internet banking)} =$$

$$\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k \dots \dots \dots (2)$$

The decision to perform internet banking frequently was hypothesised to be a function of technology, channel, social and value for money factors controlling for the demographic characteristics. Demographic characteristics include gender, age, level of education, level of income, ethnicity and occupation. The variable sets were entered into the logistic regression hierarchically in the same sequence as that followed in the hierarchical multiple regression mentioned earlier to predict continued use of internet banking. The discrete dependent variable frequency of using internet banking measures whether an individual is a more frequent or less frequent user of internet banking. The probabilities of the Wald statistic and their Exp (B) representing the change in the odds of the modelled event would predict the frequency of using internet banking by Australian consumers.

3.6.2 Qualitative Data Analysis Approaches

3.6.2.1 Data Preparation

All the responses to each open ended question within the questionnaire will be categorised into a series of conceptually-clustered matrix displays. The responses will be transcribed by hand and systematically assessed for thematically similar words and phrases. Frequency tables will be produced and each thematic cluster obtained will then be reviewed for similarities and differences, if any, by demographic characteristics such as gender, age, and ethnicity based on the categories of importance. Italics will be used to identify verbatim comments given by the respondents in their own words.

3.6.2.2 Approaches to Analysis of the Qualitative Data

Qualitative data obtained from open-ended survey responses in research often elicit new information about an experience or topic, to explain or clarify quantitative findings, and permits one to explore different dimensions of the respondent's experiences (Jackson & Trochim 2002). Open-ended questions included in the survey offer greater anonymity to respondents and more honest responses might be provided to the researcher (Erickson & Kaplan 2000). Moreover, they can also capture diversity in responses and provide alternate explanations to those that closed-ended survey questions are less able to capture (Miles & Huberman 1994; Pothas *et al.* 2001). Despite the advantages offered by the open-ended responses, they generate a challenging type of text to analyse.

The qualitative component of the research will be examined using thematic matrix display tables (Miles & Huberman 1994). The thematic matrix display tables will be presented to show responses which belong together in a conceptual sense. The frequencies of the appearance of a particular theme will also be displayed. The results of the qualitative component of the research will be presented in tables displaying counts of specific themes with a possibility of classifying them further into several micro themes. Micro themes identified will subsequently build on to macro themes.

3.6.2.3 Thematic Matrix Displays

Qualitative data analysis by thematic matrix display tables involves the four stages of data collection, data reduction, data display and data conclusion (Miles & Huberman 1994).

- **Stage 1-Data collection:** Qualitative data will be collected from the respondents with the help of the four open-ended questions included in the questionnaire. Qualitative data will be obtained from both the users and non-users of internet banking.
- **Stage 2-Data reduction:** In qualitative data analysis, the data reduction stage is often regarded as a continuous process in which data will be reduced to categories that are meaningful. Data reduction typically means summarising or coding large amounts of text into smaller amounts of text and often involves selecting, focusing, simplifying, abstracting and transforming the raw data into summaries organised around themes or patterns based on the research objectives (Miles & Huberman 1994). Qualitative data obtained will be reduced to specific themes of importance relevant to the research.
- **Stage 3-Data display:** Data display is defined as ‘an organised assembly of information’ that allows conclusions to be drawn and actions to be taken (Miles & Huberman 1994, p. 23). Matrices, graphs, networks and charts are used frequently to present information in compact forms for the purpose of the data accessibility. At this stage, thematic matrix display tables will be used to display data in order to support further illustrations and conclusions.
- **Stage 4-Data conclusion:** Data conclusion refers to the process of deciding what things mean, noting themes, patterns, regularities and explanations (Miles & Huberman 1994). Preliminary conclusions will be drawn at this stage.

The present study focuses on the aspect that qualitative data analysis will be a continuous and iterative process. It helps the researcher to classify the key themes and relationships that emerged from the analysis. For further meaningful interpretation of the data under consideration, an interactive model will be developed which will permit comparisons of the findings obtained from the qualitative data analysis with the findings obtained from the quantitative data analysis.

3.7 SUMMARY

This chapter has presented the research methodology adopted in testing the proposed conceptual framework. The research paradigm was also discussed. The variables and the different constructs used in the study were operationalised and specific attention was given to the pre-test of the survey instrument, a self-administered questionnaire, and justifying the types of questions and scales used in it. The sampling plans, desired sample size, design of the questionnaire, various data collection tools and different analytical approaches to handle quantitative and qualitative data were also described. Exploratory factor analysis with principal component analysis and promax rotation was identified to be relevant to obtaining the emergent components of the study. Quantitative techniques, hierarchical multiple regression and hierarchical logistic regression were identified to be statistically relevant to answer the research goals established for this investigation. Thematic matrix display tables were identified to be appropriate for qualitative data analysis. Sample characteristics and model testing results of the quantitative data obtained by using a hierarchical multiple regression and hierarchical logistic regression will be discussed and interpreted in the next chapter.

CHAPTER 4: SAMPLE CHARACTERISTICS AND QUANTITATIVE DATA ANALYSIS

4.1 INTRODUCTION

This chapter presents the results and findings of the quantitative data analysis. The main survey was designed to answer all of the research objectives and hypotheses stated in the methodology chapter. It describes the data-screening procedure, descriptive statistics summarising the respondents' demographic profile and the construction of scales using exploratory factor analysis. This chapter also summarises the results of the hierarchical multiple regression and hierarchical logistic regression analyses. These analyses are performed to predict the consumer patterns of continued and frequent use of internet banking from technology, channel, social and value for money factors, controlling for demographic characteristics.

4.2 PRELIMINARY DATA SCREENING

An assessment of the adequacy of the data obtained was made through statistical assumptions underlying the estimation methods before evaluation of the hierarchical multiple regression and hierarchical logistic regression analyses. The application of a number of univariate and multivariate statistics were useful in this regard. Thus, basic descriptive statistical analysis in SPSS helped to accomplish the initial screening criteria of the data obtained. The data screening looked for poorly completed surveys and attempted to establish accuracy in data.

4.3 DESCRIPTIVE STATISTICS OF THE SAMPLE

The frequencies and valid percent (percent excluding any missing responses) of internet banking users and non-users from the total respondents are presented in Table 4.1. The overall response rate obtained from the survey was 52.5 percent. Completed surveys were received from 683 respondents of which 372 were internet banking users (54.5%) and 311 were non-users of internet banking (45.5%).

Table 4.1: Frequencies of the Internet Banking Users and Non-users

Item	Characteristic	Frequency	Percentage
Internet Banking	Users	372	54.5
	Non-users	311	45.5
	Total	683	100.0

4.3.1 Demographic Profile of Users and Non-users of Internet Banking

The demographic profile of the participants who responded to the survey as internet banking users and non-users of internet banking is shown in Table 4.2. From the table it is evident that there were more males (53.8%) in the sample of internet banking users than females. Among the non-users of internet banking there were more females (65.9%) than males. Maximum numbers of the respondents identified were within the age range of 31 to 40 years as internet banking users and non-users represented as 28.2% and 22.5% respectively. The majority of the internet banking users had attained a higher education level, whilst for the majority of non-users of internet banking the highest level of education was at the vocational education and training level (45.7%). Internet banking users (21.2%) were within the income range of \$80 001 and over, and non-users of internet banking (28.6%) were within the income range of \$50 001- \$65 000. Most internet banking users were of Asian ethnicity (23.7%) and most non-users were Anglo-Australians (22.8%) in the sample. Maximum numbers of the respondents as internet banking users were derived from the managerial occupation (30.1%). The maximum number of respondents as internet banking non-users was reported from the managerial (18.6%) and administration (18.3%) categories. The differences in the demographic profile of the users and non-users of internet banking are elicited in Figures 4.1 to 4.6.

Table 4.2: Demographic Characteristics of the Users and Non-users of Internet Banking

Item	Characteristic	Internet Banking Users		Non-users of Internet Banking	
		Frequency	Percentage	Frequency	Percentage
Gender	Male	200	53.8	106	34.1
	Female	172	46.2	205	65.9
Age	18-21	16	4.3	4	1.3
	22-25	50	13.4	35	11.3
	26-30	65	17.5	57	18.3
	31-40	105	28.2	70	22.5
	41-50	80	21.5	61	19.6
	51-60	37	9.9	36	11.6
	61 or over	19	5.1	48	15.4
Education	Primary School	1	0.3	2	0.6
	Secondary School	65	17.5	66	21.2
	Vocational Education and Training	67	18.0	142	45.7
	Higher Education	239	64.2	101	32.5
Income	\$20 000 and under	44	11.8	14	4.5
	\$20 001-\$35 000	46	12.4	70	22.5
	\$35 001-\$50 000	70	18.8	87	28.0
	\$50 001-\$65 000	66	17.7	89	28.6
	\$65 001-\$80 000	67	18.0	48	15.4
	\$80 001 and over	79	21.2	3	1.0
Ethnicity	Anglo Australian	76	20.4	71	22.8
	Asian	88	23.7	64	20.6
	English	71	19.1	50	16.1
	Middle Eastern	53	14.2	48	15.4
	New Zealand	39	10.5	49	15.8
	Others	45	12.1	29	9.3
Occupation	Student	58	15.6	21	6.8

Table 4.2: Demographic Characteristics of the Users and Non-users of Internet Banking

Item	Characteristic	Internet Banking Users		Non-users of Internet Banking	
		Frequency	Percentage	Frequency	Percentage
	Manager	112	30.1	58	18.6
	Self-employed	15	4.0	34	10.9
	Administration	41	11.0	57	18.3
	Retiree	11	3.0	22	7.1
	Doctor	17	4.6	11	3.5
	Public servant	36	9.7	18	5.8
	Housewife	11	3.0	21	6.8
	Teacher	20	5.4	11	3.5
	Academic	28	7.5	17	5.5
	Community services	14	3.8	25	8.0
	Analyst	9	2.4	16	5.1

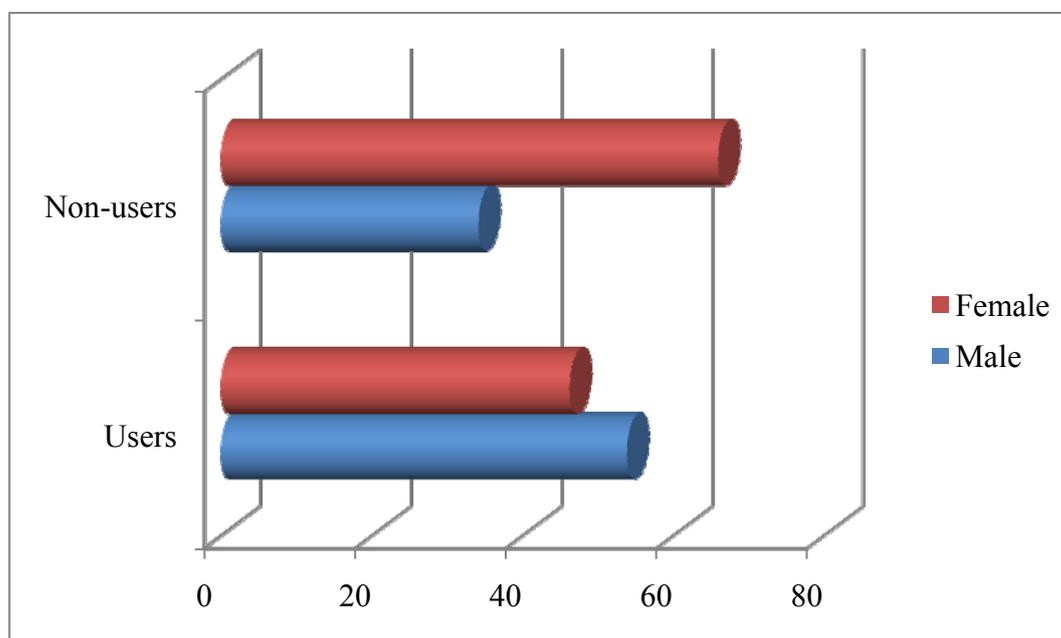


Figure 4.1: Gender-Wise Percentage Distribution of Users and Non-Users of Internet Banking

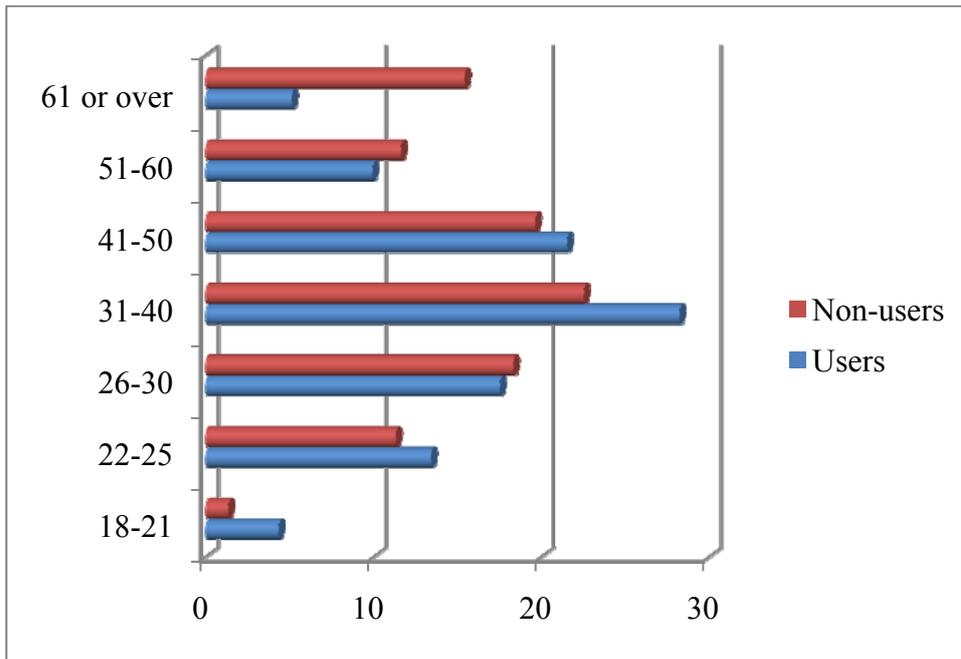


Figure 4.2: Age-Wise Percentage Distribution of Users and Non-Users of Internet Banking

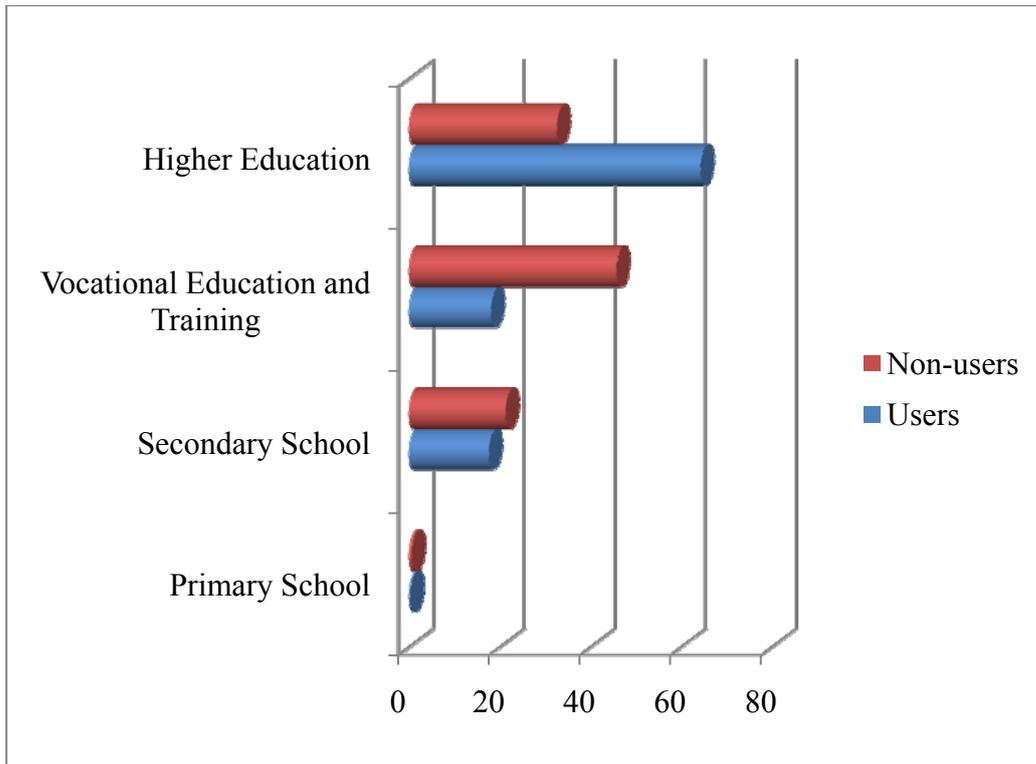


Figure 4.3: Education-Wise Percentage Distribution of Users and Non-Users of Internet Banking

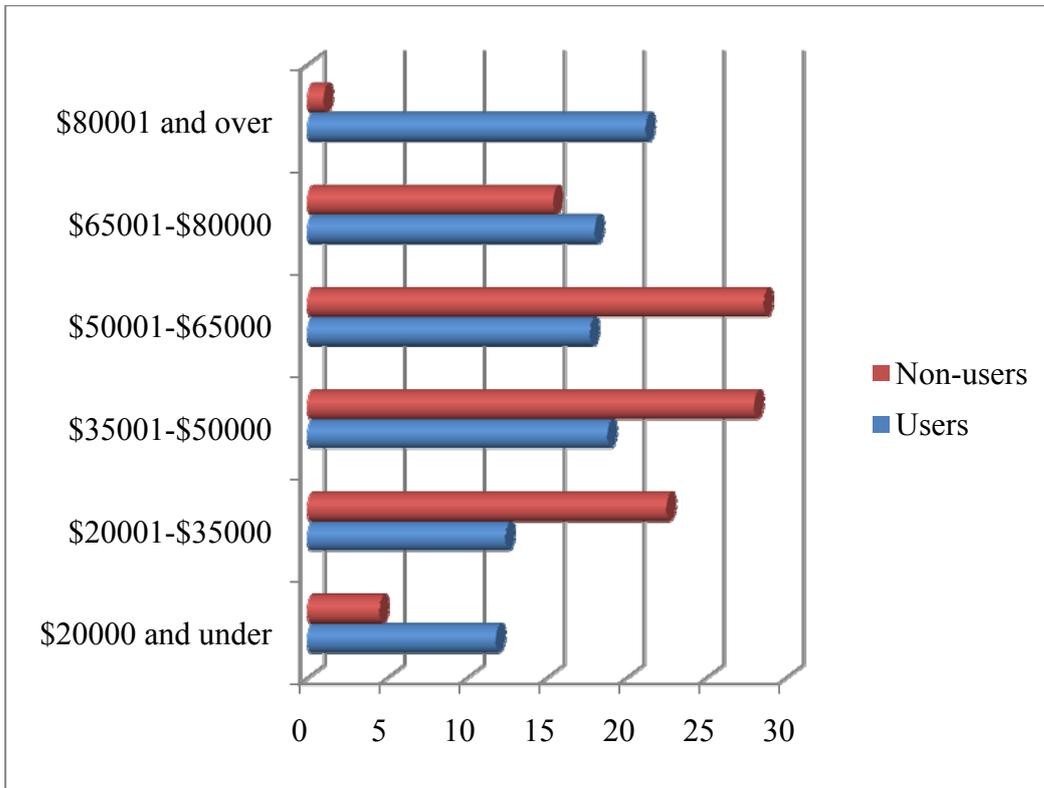


Figure 4.4: Income-Wise Percentage Distribution of Users and Non-Users of Internet Banking

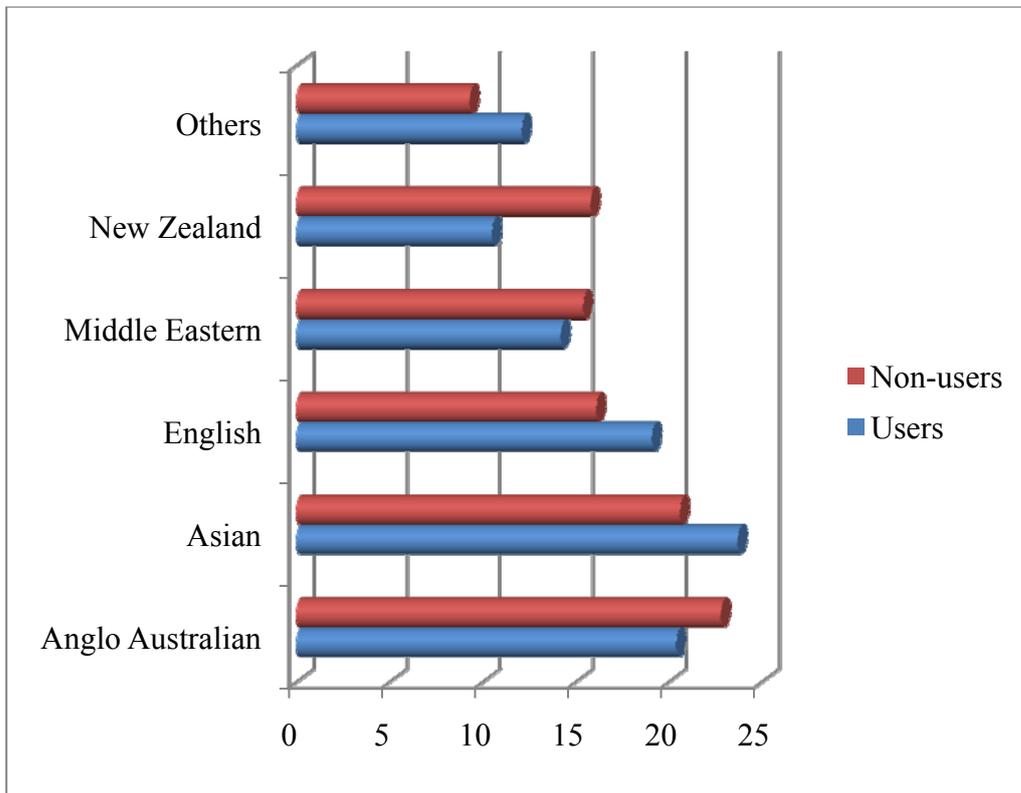


Figure 4.5: Ethnicity-Wise Percentage Distribution of Users and Non-Users of Internet Banking

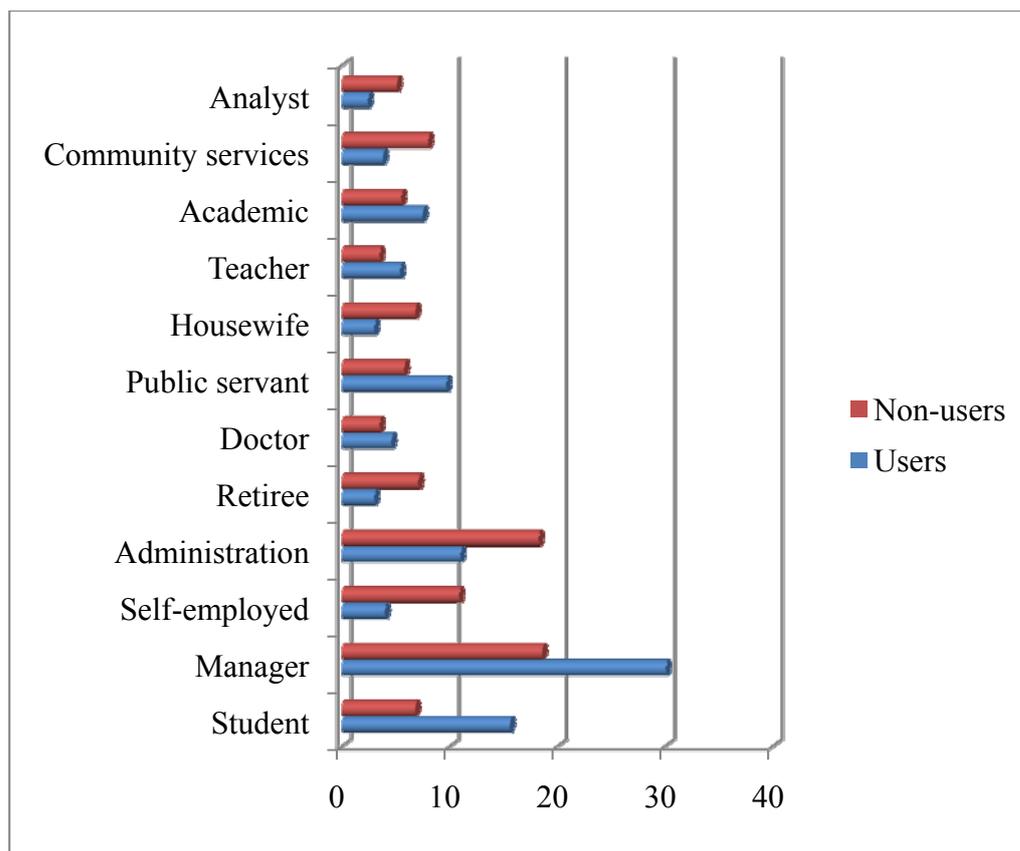


Figure 4.6: Occupation-Wise Percentage Distribution of Users and Non-Users of Internet Banking

4.3.2 General Banking Patterns: Descriptive Statistics

General banking information was collected from the respondents irrespective of whether they did or did not use internet banking. The information collated focused on the respondents' preferred banking products that they currently use and their intention to use various banking products in the next six months.

The banking products that were currently in use by internet banking users and non-users are shown in Table 4.3. From this table it is inferred that saving accounts were the product held by most of the respondents irrespective of their internet banking use. The current account was mostly preferred by the internet banking users (53.2%), more than the non-users (13.5%). Proportionately more internet banking users (89.8%) preferred to use their credit card compared to non-users of internet banking (59.8%). On the other hand, a debit card was extensively used by non-users of internet banking (88.4%) compared to internet banking users (68.5%). Foreign exchange trading was used proportionately to a greater extent by internet banking users (13.4%) compared to non-

users of internet banking (9.6%). A personal loan option was used to a greater extent by non-users of internet banking (21.2%) than internet banking users (14.2%). A larger proportion of internet banking users had a mortgage (37.4%) loan compared to non-users of internet banking (16.4%). Compared to the internet banking non-users (12.5%), the option of insurance was preferred to a maximum extent by the internet banking users (20.4%). Car loans were preferred by 14.0 percent of the internet banking users and 9.0 percent of the internet banking non-users. The knowledge of securities trading was minimal for internet banking non-users (2.9%), compared to the internet banking users (16.7%). The overdraft facility and the investment fund option were used more by the internet banking users (15.1% and 15.1%) compared to the internet banking non-users (3.9% and 2.9%). Other products were preferred to an extent of 3.8 percent by the internet banking users.

With regard to the banking products that are likely to be used in the next six months by the internet banking users and non-users, it is inferred that a majority of the respondents were reluctant to possess a current account in the future, irrespective of their internet banking usage pattern. About 18.8 percent of the internet banking users expressed their interest in possibly using foreign exchange trading in the next six months. However, 20.4 percent of the internet banking users and 8.7% of the internet banking non-users preferred to use the option of personal loan in the future. Whereas, 13.7 percent of the internet banking users expressed their interest in utilising the option of a mortgage compared to only 8.7 percent of the internet banking non-users. About 13.5 percent of the internet banking users preferred to use the option of insurance in the next six months compared to 9.3 percent of the internet banking non-users. Internet banking users, to a maximum extent (46.0%), indicated their preference to use a car loan in the future. The option of securities trading to be utilised in the near future was evident by the frequencies of the internet banking users (48.1%). The option of an overdraft was also preferred to a maximum extent by the internet banking users (59.9%), compared to the internet banking non-users (3.9%). An investment fund was preferred to a minimal extent by both internet banking users (0.5%) and non-users (4.2%).

Table 4.3: General Banking Patterns of Users and Non-users of Internet Banking

Banking Product		Banking Products currently using				Banking products likely to use in the next six months			
		Users		Non-users		Users		Non-users	
		No.	%	No.	%	No.	%	No.	%
Current Account	Yes	198	53.2	42	13.5	17	4.6	0	0
	No	174	46.8	269	86.5	355	95.4	311	100
Credit Card	Yes	334	89.8	186	59.8	14	3.8	0	0
	No	38	10.2	125	40.2	358	96.2	311	100
Debit Card	Yes	255	68.5	275	88.4	18	4.8	0	0
	No	117	31.5	36	11.6	354	95.2	311	100
Foreign Exchange Trading	Yes	50	13.4	30	9.6	70	18.8	16	5.1
	No	322	86.6	281	90.4	302	81.2	295	94.9
Personal Loan	Yes	53	14.2	66	21.2	76	20.4	27	8.7
	No	319	85.8	245	78.8	296	79.6	284	91.3
Mortgage	Yes	139	37.4	51	16.4	51	13.7	27	8.7
	No	233	62.6	260	18.6	321	86.3	284	91.3
Insurance	Yes	76	20.4	39	12.5	50	13.4	29	9.3
	No	296	79.6	272	87.5	322	86.6	282	90.7
Car Loan	Yes	52	14.0	28	9.0	171	46.0	21	6.8
	No	320	86.0	283	91.0	201	54.0	290	93.2
Securities Trading	Yes	62	16.7	9	2.9	179	48.1	15	4.8
	No	310	83.3	302	97.1	193	51.9	296	95.2
Overdraft	Yes	56	15.1	12	3.9	223	59.9	12	3.9
	No	316	84.9	299	96.1	149	40.1	299	96.1
Investment Fund	Yes	56	15.1	9	2.9	2	0.5	13	4.2
	No	316	84.9	302	97.1	370	99.5	298	95.8
Others	Yes	14	3.8	0	0	2	0.5	0	0
	No	358	96.2	311	100	370	99.5	311	100

It could be inferred from the Table 4.3 that internet banking users are exposed to a wider range of financial products compared to the non-users of internet banking. Internet

banking customers either possessed the banking product included in the study or expressed their preference to use it in the near future, irrespective of the simplicity or complexity of the banking product. On the other hand, non-users of internet banking were more cautious and conservative in their banking product preferences.

4.3.3 General Internet Usage Trends: Descriptive Statistics

Internet usage trends of the respondents were collected irrespective of their use of the internet to perform banking transactions in order to find out whether significant differences existed between the two groups. Frequencies and percentages were drawn from the variables focusing on the longevity of internet use, time spent on the internet on an average day, type of internet connectivity and place of internet access. General internet usage trends are displayed in Table 4.4.

More internet banking users (52.2%) had used the internet for more than five years. However, non-users of internet banking (35%) reported that they had used the internet (not for the banking purposes) for two years to less than three years. Most respondents, irrespective of their internet banking usage or non-usage, indicated that they spent about one hour to less than two hours browsing the internet on average per day. Broadband internet connectivity is prominent among the users (91.9%) and dial-up internet connectivity is prominent among the non-users (90.7%) of internet banking. Among the internet banking users, the majority access the internet from home (89.0%). However, a majority of non-users of internet banking (95.2%) access the internet from their office. These findings show that respondents with more internet experience were more frequent and continuous users of internet banking. Respondents possessing broadband type internet connectivity were prominent users of internet banking. Respondents accessing internet from their home were more frequent and continuous users of internet banking. However, time spent on the internet on an average per day was not significantly different between the users and non-users with regard to their use of internet banking either continuously or frequently.

Table 4.4: General Internet Usage Trends of the Users and Non-users of Internet Banking

Item	Characteristic		Internet Banking Users		Non-users of Internet Banking	
			Frequency	Percent	Frequency	Percent
Experience of using internet	Less than 6 months		5	1.3	20	6.4
	6 months – Less than 1 year		3	0.8	30	9.6
	1 year – Less than 2 years		21	5.6	65	20.9
	2 years – Less than 3 years		31	8.3	109	35.0
	3 years – Less than 5 years		118	31.7	82	26.4
	Above 5 years		194	52.2	5	1.6
Time spent on internet on an average per day	Less than 1 hour		92	24.7	24	7.7
	1 hour – Less than 2 hours		111	29.8	154	49.5
	2 hours – Less than 3 hours		72	19.4	94	30.2
	3 hours – Less than 4 hours		25	6.7	21	6.8
	4 hours – Less than 5 hours		35	9.4	17	5.5
	More than 5 hours		37	9.9	1	0.3
Type of internet connectivity	Broadband		342	91.9	29	9.3
	Dial up		22	5.9	282	90.7
	Others		8	2.2	0	0
Place of internet access	Office	Yes	306	82.3	296	95.2
		No	66	17.7	15	4.8
	Home	Yes	331	89.0	295	94.9
		No	41	11.0	16	5.1
	Public Library	Yes	19	5.1	7	2.3
		No	353	94.9	304	97.7

Table 4.4: General Internet Usage Trends of the Users and Non-users of Internet Banking

Item	Characteristic		Internet Banking Users		Non-users of Internet Banking	
			Frequency	Percent	Frequency	Percent
Internet Centre/Café	Yes		4	1.1	8	2.6
	No		368	98.9	303	97.4
Others	Yes		4	1.1	0	0
	No		368	98.9	311	100

4.3.4 Ranking the Service Delivery Channels based on the Frequency of Usage

Information pertaining to ranking the different service delivery channels based on the respondent's frequency of use is displayed in Table 4.5. It is evident from the results that proportionately 58.9 percent of the internet banking users ranked internet banking as their most preferred service delivery channel for conducting their banking transactions. The ATM was ranked in second place by 33.9 percent of the internet banking users. Telephone banking (5.1%) and bank branch banking (1.6%) were ranked in the third and fourth places by internet banking users. Mobile banking was used to a minimal extent (0.3%) by internet banking users. Non-users of internet banking ranked ATM (41.8%) as their most preferred service channel, followed by telephone banking (31.8%) and bank branch banking (26.0%). These findings show that respondents who preferred internet banking service delivery channel use it more frequently and continuously to perform their banking transactions. However, non-users of internet banking preferred ATMs to a larger extent to conduct their banking transactions.

Table 4.5: Ranking the Banking Service Delivery Channels by Internet Banking Users versus Non-users

Service delivery channel	Respondents	Rank					
		1	2	3	4	5	6
Internet Banking Users							
Bank branch	Number	6	30	195	129	12	0
	Percent	1.6	8.1	52.4	34.7	3.2	0
ATM	Number	126	201	28	16	1	0
	Percent	33.9	54.0	7.5	4.3	0.3	0
Telephone banking	Number	19	28	108	206	11	0
	Percent	5.1	7.5	29.0	55.4	3.0	0
Internet banking	Number	219	110	25	9	9	0
	Percent	58.9	29.6	6.7	2.4	2.4	0
Mobile banking	Number	1	8	10	338	15	0
	Percent	0.3	2.2	2.7	90.9	4.0	0
Others	Number	8	3	1	2	1	357
	Percent	2.2	0.8	0.3	0.5	0.3	96.0
Non-users of Internet Banking							
Bank branch	Number	81	135	95			
	Percent	26.0	43.4	30.5			
ATM	Number	130	112	69			
	Percent	41.8	36.0	22.2			
Telephone banking	Number	99	65	147			
	Percent	31.8	20.9	47.3			

4.3.5 Services of the Different Banks Utilised by the Users and Non-users

Data has been collected from the respondents with regard to the services of the different banks utilised by both the users and non-users of internet banking and is presented in Table 4.6. The results show that, irrespective of the internet banking usage, the majority of respondents indicated that they were clients of at least two banks. A small percentage of respondents among the internet banking users were utilising the services of

four (3.5%) or five (2.7%) banks. Among non-users of internet banking none reported the utilisation of the services offered by more than three banks.

Table 4.6: Services of the Different Banks Utilised by Users versus Non-users

Item		Characteristic			
		Internet banking users		Non-users of Internet banking	
		Frequency	Percentage	Frequency	Percentage
Client of how many banks	One	90	24.2	114	36.7
	Two	204	54.8	159	51.1
	Three	55	14.8	38	12.2
	Four	13	3.5	0	0
	Five and over	10	2.7	0	0

4.3.6 Information Pertaining to Internet Banking Usage from the Users

Information regarding the place they access their banking transactions, the frequency of internet banking usage on an average per week and the internet banking products and services that are currently used by internet banking users is presented in Table 4.7. The table revealed that a majority of the internet banking users access the internet from home (86.8%) followed by the office (73.9%) to perform their banking transactions. Places such as the public library (1.6%) and internet centre/café (0.3%) were used very infrequently by the users to perform their banking transactions. Internet banking users reported that they used internet banking for account information (94.4%), funds transfer (93.3%), balance inquiry (91.1%) and electronic bill payments (90.3%) in order of importance. Facilities such as loan applications (8.9%), securities trading (7.0%) and cheque book applications/cancellation (7.0%) were utilised by internet banking users to a lesser extent. Internet banking users mostly preferred to use internet banking once a week (32.0%), followed by twice a week (20.2%).

Table 4.7: Internet Banking Information from the Users

Item	Characteristic	Yes/No	Frequency	Percent
Place of accessing the internet for performing banking transactions	Office	Yes	275	73.9
		No	97	26.1
	Home	Yes	323	86.8
		No	49	13.2
	Public Library	Yes	6	1.6
		No	366	98.4
	Internet Centre/Café	Yes	1	0.3
		No	371	99.7
	Others	Yes	3	0.8
		No	369	99.2
Internet banking products or services that are in current use	Account Information	Yes	351	94.4
		No	21	5.6
	Balance Inquiry	Yes	339	91.1
		No	33	8.9
	Electronic Bill Payments	Yes	336	90.3
		No	36	9.7
	Funds Transfer	Yes	347	93.3
		No	25	6.7
	Loan Application	Yes	33	8.9
		No	339	91.1
	Securities Trading	Yes	26	7.0
		No	346	93.0
	Cheque Book Application/Cancellation	Yes	26	7.0
		No	346	93.0
Others	Yes	6	1.6	
	No	365	98.1	
Frequency of using internet banking on an average per week	Fewer than once		40	10.8
	Once a week		119	32.0
	2 times a week		75	20.2
	3 times a week		58	15.6

Table 4.7: Internet Banking Information from the Users

Item	Characteristic	Yes/No	Frequency	Percent
	4 times a week		27	7.3
	5 times a week		18	4.8
	More than 5 times a week		35	9.4

4.4 PREPARING LIKERT TYPE-RATING VARIABLES FOR FURTHER ANALYSIS

The Likert type-rating variables were prepared for further analysis by the following processes. Initially, reverse scored scale items were recoded. Data was further checked for the presence of any extreme values by obtaining means and standard deviations. Moreover, the distribution of data was checked for the presence of any skewness.

4.4.1 Recoding the Reverse Scale Items

Once missing data had been dealt with, the summary scores of the interval data were computed, including several scale items. Usually good measures included in the questionnaires contain a mixture of positively and inversely keyed-in items. Therefore, according to Schumacher and Lomax (2004), recoding of the reverse scored scale items is an essential pre-requisite. Without reverse scoring, the statistical combining of items to form aggregated scale scores will be misleading. Of the different independent variables included in the study only technology and channel constructs have reverse scored scale items. Table 4.8 presents the original, as well as the recoded reverse scored scale items, of the technology factors.

Table 4.8: Recoding the Reverse Scale Items of the Technology Factors

Original scale items	Recoded reverse scale items
TD5 Internet banking can be frustrating	Internet banking is not frustrating
TD9 Internet banking requires a lot of mental effort	Internet banking does not require a lot of mental effort
TD17 I would have difficulty explaining to others why using internet banking may be beneficial	I would not have any difficulty in explaining to others why using internet banking may be beneficial

Table 4.9 shows the original and reverse scored scale items of the channel factors.

Table 4.9: Recoding the Reverse Scale Items of the Channel Factors

Original scale items	Recoded reverse scale items
CD7 Information concerning my internet banking transactions can be accessed by others	Information concerning my internet banking transactions cannot be accessed by others
CD8 Performing internet banking transactions makes me feel psychologically uncomfortable	Performing internet banking transactions does not make me feel psychologically uncomfortable
CD9 Internet banking transactions could lead to an inefficient use of my time	Internet banking transactions does not lead to an inefficient use of my time

4.4.2 Data Distribution

Mean and standard deviation values were computed for technology, channel, social, value for money and continued use factors. Results indicate that the mean values and the standard deviation values were influenced by the presence of extreme data values, indicating the presence of a positive skewness in the distribution of the data.

4.4.3 Normal Distribution

Knowing the distribution of data is essential in selecting the right statistical method. Many statistical procedures assume that the variables are normally distributed, including those that will be employed in this study: factor analysis and multiple regressions. A significant violation of the assumption of normality can seriously distort the values of correlations as well as the outcomes of statistical inference tests, depending on the nature of the analysis and the non-normality (Argyrous 2005). If the variables in the data obtained are substantially non-normal, more objective assessment of normality can range from simple examination of skewness and kurtosis to inferential tests of normality such as the Kolmogorov-Smirnov test (K-S test) and adaptations to this test (Zimmerman 1995, 1998).

The Kolmogorov-Smirnov test is used to test for 'goodness of fit' between a sample distribution and another distribution, which is often normal distribution. In brief, a K-S test looks at whether the distribution as a whole deviates from a comparable normal

distribution. It compares the scores in the sample to a normally distributed data set of scores with the same mean and standard deviation. In an SPSS output, if the value in the significance column is less than 0.05 then data cannot be considered as normally distributed (Jacoby 1998). The results obtained by subjecting the technology, channel, social, value for money and usage factors to a K-S test reported high significance indicating a non-normal data distribution. The results of a K-S test with means and standard deviations are presented in Table 4.10.

Table 4.10: Mean, Standard Deviations and K-S Test Scores for Technology, Channel, Social, Value for money and Continued Use Factors

Factors	Mean	Standard Deviation	K-S value	Factors	Mean	Standard Deviation	K-S value
Technology Factors				Channel Factors			
TD1	1.37	0.59	7.92	CD1	1.60	0.73	5.67
TD2	1.63	0.74	5.84	CD2	2.11	0.97	4.48
TD3	1.57	0.71	6.42	CD3	1.90	0.83	5.13
TD4	1.49	0.67	6.99	CD4	2.63	1.25	4.07
TD5	2.31	1.07	5.25	CD5	2.38	1.13	4.97
TD6	1.61	0.71	5.76	CD6	2.10	0.93	5.89
TD7	1.61	0.72	5.86	CD7	3.67	1.04	4.46
TD8	1.66	0.81	5.47	CD8	4.02	0.91	5.21
TD9	1.93	0.88	5.43	CD9	4.15	0.84	5.24
TD10	1.84	0.71	5.28	CD10	2.13	0.83	5.71
TD11	1.59	1.05	5.85	CD11	2.19	0.91	5.64
TD12	2.23	1.03	5.67	CD12	2.23	0.97	5.25
TD13	2.15	1.05	5.37	CD13	3.47	0.98	3.95
TD14	2.12	1.05	5.32	CD14	2.98	1.05	3.87
TD15	1.80	0.81	4.97	CD15	3.73	1.04	3.70
TD16	2.03	0.95	5.61				
TD17	1.95	0.89	5.39				
Social Factors				Value for money Factors			
SD1	3.42	1.19	4.85	VD1	1.92	0.71	5.61
SD2	3.22	1.26	4.71	VD2	2.04	0.79	5.29
SD3	3.39	1.25	4.84	VD3	1.76	0.63	5.96

Table 4.10: Mean, Standard Deviations and K-S Test Scores for Technology, Channel, Social, Value for money and Continued Use Factors

Factors	Mean	Standard Deviation	K-S value	Factors	Mean	Standard Deviation	K-S value
SD4	3.46	1.26	4.52	VD4	2.15	0.97	5.21
SD5	3.47	1.21	3.95	VD5	2.09	0.94	5.68
SD6	3.99	0.94	4.45	VD6	1.73	0.64	5.94
				VD7	1.89	0.78	5.18
				VD8	1.90	0.84	5.39
Continued Usage Factors							
UD1	1.64	0.66	5.36				
UD2	1.59	0.61	5.81				
UD3	1.97	0.86	4.12				

4.4.4 Data Transformations

Data transformations usually involve a nonlinear mathematical conversion of the raw scores (Keller 2006). A log transformation was employed to stretch out the lower end and compress the upper end of variable distributions, with the result that positively skewed data will tend to become more symmetrical in shape (De Vaus 2002).

Technology, channel, social and value for money factor items were subjected to logarithmic transformations.

4.5 EXPLORATORY FACTOR ANALYSIS

Exploratory factor analysis provides a class of techniques useful for condensing many variables into a smaller, manageable and more reliable subset of dimensions or factors (Fabrigar *et al.* 1999). Principal component analysis, in particular, attempts to identify linear combinations of correlated items which form measurement scales. Principal component analysis is the most appropriate tool to explicitly combine variables in a weighted manner to form components that account for the maximum amount of variability in the variables scores (Cooksey 2007; Habing 2003). Furthermore, the use of principal component analysis provides more robust results whilst dealing with the missing data patterns and the results obtained are similar to using common factor analysis.

Exploratory factor analysis was performed using principal components and promax rotation as explained in Chapter Three. Certain scale items were deleted from entering further analysis as they did not meet the essential criteria such as low factor loading values, less eigenvalues or low item-to-total correlations (Hair *et al.* 2006). The log transformed scale items LTD5, LTD11 and LTD17 of technology factors were deleted from the original scale due to the presence of factor loadings with an absolute value of less than 0.4. Similarly, the LCD8 scale item was deleted from the channel factors due to the presence of low loading values. A refined exploratory factor analysis was performed excluding the scale items that did not satisfy the assumptions of the exploratory factor analysis.

4.5.1 Principal Component Analysis Output for the Technology Factors

The principal component analysis method and a promax rotation of the technology determinants constituting fourteen scale items was conducted on a random sample (N = 372) of Australian internet banking users and is presented in Table 4.11. The KMO measure of sampling adequacy (0.819) was satisfied indicating that the present data were suitable for principal component analysis. Similarly, Bartlett’s test of Sphericity was significant ($p < 0.001$), indicating sufficient correlations between the variables to proceed with the analysis. A two component solution provided the clearest extraction, using the Kaiser-Guttman retention criterion of eigenvalues of more than one. The component correlation matrix indicates that the two components emerged from the technology factors to be positively correlated (0.427) at a moderate level and are fairly well discriminated. Table 4.11 presents the fourteen scale items, communality estimates and eigenvalues.

Table 4.11: Summary of Principal Component Analysis for Technology Factors Measure (N = 372)

Scale items	Factors	
	1	2
LTD3 Internet banking allows me to manage my finances more efficiently	0.71	
LTD2 Internet banking gives me greater control over my finances	0.70	
LTD6 Internet banking is compatible with my lifestyle	0.70	
LTD7 Using internet banking fits well with the way I like to manage	0.68	

Table 4.11: Summary of Principal Component Analysis for Technology Factors Measure (N = 372)

Scale items	Factors	
	1	2
my finances		
LTD4 Internet banking is a convenient way to manage my finances	0.67	
LTD8 Using the internet to conduct banking transactions fits into my working style	0.65	
LTD10 Internet banking is useful for managing my financial resources	0.53	
LTD1 Internet banking makes it easier for me to conduct my banking transactions	0.51	
LTD16 I believe I could communicate to others the consequences of using internet banking	0.46	
LTD17 I would have no difficulty explaining to others why using internet banking may be beneficial	0.41	
LTD9 Internet banking does not require a lot of mental effort	0.45	
LTD12 Prior to the actual adoption, internet banking is available for me to use on a trial basis		0.84
LTD14 I have a great deal of opportunity to try internet banking before the actual adoption		0.79
LTD13 I am able to use internet banking to see what it can do for me prior to the actual adoption		0.76
Eigenvalues	3.932	2.069

Factor Correlation Matrix

	Factor 1	Factor 2
Factor 1	1.000	0.427
Factor 2	0.427	1.000

The two technology factors components were labelled based on a review of the thematic content of the different items of their defining items.

Component 1: Perceived Usability

This component consists of items relating to the consumer's extent of ease and convenience with internet banking, compatibility with their personal and professional lifestyles and the extent to which they could communicate the benefits of internet banking usage to others. Therefore the component represents the perceived usability of internet banking.

Component 2: Perceived Trialability

This component relates to the extent to which customers can actually try internet banking or any add on features with regard to internet banking on a limited basis before they actually consume the service. Customers are often comfortable with the trialability nature of internet banking as it can remove any technology apprehensions that persist with the customers. The component was thus labelled perceived trialability.

4.5.2 Principal Component Analysis Output for the Channel Factors

The results of the principal component analysis output for the channel factors are presented in Table 4.12. It is evident from the table that the KMO measure of sampling adequacy (0.773) and Bartlett's test of Sphericity ($p < 0.001$) were satisfied. Using the Kaiser-Guttman retention criterion of eigenvalues greater than one, a two component solution provided the clearest extraction. These two components accounted for 36.593 percent of the total variance. The two component model was deemed to be the best solution because of its conceptual clarity and ease of interpretation. Also, the component correlation matrix reveals that the two emerged components of the channel-related factors to be moderately positively correlated (0.341) and are well discriminated.

Table 4.12: Summary of Principal Component Analysis for Channel Factors Measure (N = 372)

Scale items	Factors	
	1	2
LCD10 Internet banking is trustworthy	0.70	
LCD11 I trust in the ability of internet banking to protect my privacy	0.66	

**Table 4.12: Summary of Principal Component Analysis for Channel Factors
Measure (N = 372)**

Scale items	Factors	
	1	2
LCD12 Using internet banking is financially secure	0.62	
LCD1 I am confident of using internet banking even if there is no one around to show me how to use it	0.62	
LCD3 I am confident of using internet banking even if I have only the online instructions for reference	0.58	
LCD9 Internet banking transactions does not lead to an inefficient use of my time	0.55	
LCD6 I am confident that internet banking in Australia is secure	0.53	
LCD7 Information concerning my internet banking transactions cannot be accessed by others	0.43	
LCD5 I am confident of using internet banking if I could call someone for help if I got stuck		0.74
LCD4 I am confident of using internet banking if I see someone else using it before I try it myself		0.67
LCD14 Internet banking websites provide information that is tailor-made for me		0.54
LCD2 I am confident of using internet banking if I have the built-in online “help” function for assistance		0.49
LCD13 Performing internet banking makes me feel that I am a unique customer		0.44
LCD15 The promotional offers that I receive through internet banking transactions are attractive to me		0.40
Eigenvalues	3.425	1.698

Factor Correlation Matrix

	Factor 1	Factor 2
Factor 1	1.000	0.341
Factor 2	0.341	1.000

The two channel factors components were labelled based on a review of the thematic content of the different items of their defining items. Considering the different scale items aligned to each component, the components were labelled as following.

Component 1: Perceived Safety

This component relates to the safety of internet banking with regard to the risk, security and trust associated by the consumers with internet banking as a service delivery channel. Moreover, the component included items related to the internal component of self-efficacy, indicating that internet banking users were confident that they can perform their transactions without any help. The component was thus labelled as perceived safety.

Component 2: Perceived Specialty

This component is related to the personalisation component perceived by the consumers as unique and special customers due to internet banking. Also the component consists of the external component of self-efficacy, indicating less confidence associated with the internet banking consumers without the presence of a role model or online help functions. Thus the component was labelled as perceived specialty.

4.5.3 Principal Component Analysis Output for the Social Factors

The results obtained from the principal component analysis for the social factors are presented in Table 4.13. The table shows that the minimum standard was attained before the data were subjected to the actual principal component analysis by satisfying the KMO measure of sampling adequacy (0.898) and Bartlett’s test of Sphericity ($p < 0.001$) indicating sufficient correlation between the variables. The Kaiser-Guttman retention criterion of eigenvalues greater than one, provided the clearest extraction of a one component solution. The resultant single component accounted for 64.725 percent of the total variance.

Table 4.13: Summary of Principal Component Analysis for Social Factors Measure (N = 372)

Scale items	Factor
LSD1 My decision to use internet banking is influenced by my friends	0.72
LSD2 My decision to use internet banking is influenced by my family	0.63
LSD3 My decision to perform internet banking is influenced by my colleagues	0.70

LSD4 I frequently gather information from friends about internet banking before I actually perform any transactions	0.73
LSD5 I often check with others to make sure that I am properly using internet banking	0.67
LSD6 I often observe how others conduct their banking transactions before I actually perform any transactions	0.41
Eigenvalues	3.883

Principal component analysis for the social factors construct resulted in an extraction of a single solid component consisting of the scale items related to the influence exerted on the customer to use internet banking by the friends, family members and colleagues.

4.5.4 Principal Component Analysis Output for the Value for money Factors

Table 4.14 shows the principal component analysis solution for the value for money factors construct. It is evident that the KMO measures of sampling adequacy (0.824) and Bartlett's test of Sphericity ($p < 0.001$) as prerequisites for running the principal component analysis were satisfied. The Kaiser-Guttman retention criterion of eigenvalues greater than one, provided the clearest extraction of one solid component solution. The resultant component accounted for 38.193 percent of the total variance.

Table 4.14: Summary of Principal Component Analysis for Value for money Factors Measure (N = 372)

Scale items	Factor
LCPV1 Internet banking is very reliable	0.46
LCPV2 Internet banking is of outstanding quality	0.43
LCPV3 Internet banking provides easy access to information	0.48
LCPV4 I am happy with the price charges for performing internet banking	0.42
LCPV5 Internet banking has a good reputation in Australia	0.58
LCPV6 Internet banking transactions can be performed with very little effort	0.59
LCPV7 Performing internet banking transactions is the right decision when price and other expenses are considered	0.47
LCPV8 Internet banking transactions are economical	0.69
Eigenvalues	3.055

The principal component analysis solution for the value for money factors resulted in the extraction of a single component consisting of the scale items representing the trade-off between the benefits and costs associated by the customer with the use of internet banking as a service delivery channel.

4.5.5 Principal Component Analysis Output for the Continued Use Factors

Table 4.15 displays the summary of principal component analysis for continued use factors measure. It is evident from the table that for the continued usage factor measure, the KMO measures of sampling adequacy (0.617) and Bartlett's test of Sphericity ($p < 0.001$) as prerequisites for running the principal component analysis were satisfied. The Kaiser-Guttman retention criterion of eigenvalues greater than one, provided the clearest extraction of a single solid component solution. The resultant component accounted for 57.397 percent of the total variance.

Table 4.15: Summary of Principal Component Analysis for Continued Usage Factors Measure (N = 372)

Scale items	Factor
LUD1 Internet banking usage is a positive experience for me	0.61
LUD2 I intend to use internet banking regularly to perform my banking transactions	0.66
LUD3 I intend to increase my use of internet banking transactions in future	0.45
Eigenvalues	1.722

Principal component analysis of the continued usage factor extracted a single component. The resultant component consists of scale items related to the customer's associations with internet banking, intention to perform banking transactions through the internet regularly, and their intentions to increase the use of internet banking in future.

4.5.6 Reliability Analysis

Reliability is the correlation of an item, scale, or instrument with a hypothetical one which truly measures what it is supposed to. Cronbach's alpha is the most common form of internal consistency reliability coefficient. By convention, a lenient cut-off of 0.60 is common in exploratory research; alpha should be at least 0.70 or higher to retain an item in an 'adequate scale', and a cut-off of 0.80 is required for a 'good scale' (Graham 2006). In the present study, an approach guided by a lenient cut-off of 0.60 is considered to be appropriate. The reliability statistics for the scales identified via principal components analysis are presented in Table 4.16. In all cases, Cronbach's alpha exceeded at least 0.60. For all subsequent analyses, respondents were given scores on each identified component or scale by averaging the scores on the items that defined that scale.

Table 4.16: Reliability Statistics

Variable	Sub-scale	Number of items	Cronbach's alpha
Technology factors	Perceived usability	11	0.81
	Perceived trialability	3	0.75
Channel factors	Perceived safety	8	0.73
	Perceived specialty	6	0.60
Social factors		6	0.89
Value for money factors		8	0.76
Usage factors		3	0.62

4.6 DUMMY CODING OF THE VARIABLES

In preparation for the hierarchical regression analyses, the information in any categorical predictor variables has to be correctly coded. Dummy coding is one such transformation process. In such coding, a categorical variable with k levels will be transformed into $k-1$ variables (Thompson 2006). One category (the choice is arbitrary) is chosen as the reference category and is always coded as 0. One dummy coded variable is then created for each of the remaining $k-1$ categories, where a value of 1 is given if a respondent falls into a specific category under consideration (Bond & Fox 2001).

All the demographic variables were dummy coded before use as predictors in regression analyses. 'Males' were assigned the value of 0 and 'Females' were assigned a value of 1 for the gender predictor. The demographic categorical variable age was dummy coded with three predictors; this involved combining some adjacent age categories in order to reduce the total number of predictors. The age level less than or equal to 30 years was treated as the reference category. The first predictor coded respondents whose age was 'less than or equal to 30 years' (combining respondents from 18-21, 22-25 and 26-30 categories from the original questionnaire); the second predictor coded respondents whose age was between '31 to 50 years' (combining the 31-40 and 41-50 categories represented in the original questionnaire) and the third predictor coded respondents whose age was 'above 50 years' (combining the 51-60 and 61 and over categories from the original questionnaire).

The demographic categorical variable level of education was dummy coded with three predictors; this involved combining some adjacent education level categories in order to reduce the total number of predictors. The high school level of education was thus treated as the reference category. The first predictor coded respondents whose level of education was 'high school' (combining respondents from primary school and high school categories from the original questionnaire); the second predictor coded respondents whose level of education was 'vocational education and training' (representing the vocational education and training category in the original questionnaire) and the third predictor coded respondents whose level of education was 'higher education' (representing the higher education category in the original questionnaire).

The demographic categorical variable level of income was dummy coded with three predictors; this involved combining some adjacent income level categories in order to reduce the total number of predictors. Thus the low income level was treated as the reference category. The first predictor coded respondents whose level of income was 'low' (combining respondents from \$20 000 and under and \$20 001-\$35 000 categories from the original questionnaire); the second predictor coded respondents whose level of income was 'middle' (combining respondents from \$35 001-\$50 000 and \$50 001-\$65 000 categories in the original questionnaire) and the third predictor coded respondents whose level of income was 'high' (combining respondents from \$65 001-\$80 000 and \$80 001 and over from the original questionnaire).

Ethnicity variable was dummy coded into 'non-western' and 'western' categories. Non-western category includes respondents from Asian, Middle Eastern and Others. The western category includes Anglo-Australians, English and New Zealanders. 'Non-western' categories were assigned a value of 0 and 'western' categories were assigned a value of 1 for the ethnicity predictor. Occupation as an open ended question in the questionnaire resulted in broad categories such as student, manager, self-employed, administration, retiree, doctor, public servant, house wife, teacher, academic, community services and analyst. The occupation variable was dummy coded as 'non-professional' and 'professional' categories. The non-professional category includes students, self-employed, administration personnel, retiree, public servants, house wives and personnel from community services. The professional category includes managers, doctors, teachers, academics and analysts. 'Non-professional' categories were assigned the value of 0 and 'professional' categories were assigned a value of 1 for the occupation predictor.

The dependent variable frequency of internet banking usage was dummy coded with two predictors. This involved combining some adjacent categories in order to reduce the total number of predictors. The first predictor coded respondents whose frequency of internet banking usage was 'less than or equal to once a week' (combining fewer than once a week and once a week categories from the original questionnaire). The second predictor coded respondents whose frequency of internet banking usage was 'more than once a week' (combining 2 times a week, 3 times a week, 4 times a week, 5 times a week and more than 5 times a week). These variables were reduced to two categories to simplify the data analysis. Moreover, the differences between respondents' frequency of internet banking usage between 2 times a week, 3 times a week, 4 times a week, 5 times a week and more than 5 times a week were not really meaningful to analyse and interpret.

4.7 HIERARCHICAL MULTIPLE REGRESSION ANALYSIS

Hierarchical multiple regression (HMR), a variant of the basic multiple regression procedure, allows the researcher to specify a fixed order of entry for variables in order to control for the effects of covariates or to test the effects of certain predictors over and above the influence of others (Pedhazur 1997). In HMR, the independent variables are entered into the analysis in a sequence of blocks, or groups, which may contain one or more variables. A more common HMR specifies a set of control variables entered in the first block and a set of predictor variables entered in the second and subsequent blocks.

Control variables are often demographic measures which are thought to make a difference in scores on the dependent variable. As a reasonably large number of predictors need to be analysed in a specific order, HMR was chosen as the most appropriate strategy (Cohen *et al.* 2003; Cooksey 2007).

The main objective of the present research was to explain the continued usage of internet banking by the consumers as a function of technology, channel, social and value for money factors, taking into account that the aforementioned would assist in supporting the conceptual model proposed in Chapter Two. The following section presents the results of the hierarchical multiple regression analyses undertaken to examine the relationships between demographic characteristics, technology, channel, social, value for money and continued use factors of internet banking.

4.7.1 Testing of Assumptions

The minimum ratio of valid cases to independent variables for multiple regressions is five to one. For the planned hierarchical multiple regression analyses, there were thirteen independent variables (7 demographic characteristics, 2 technology factors, 2 channel factors, 1 social factor and 1 value factor) for 372 cases, thus satisfying the minimum requirement (Coakes & Steed 2003, p. 163; Tabachnick & Fidell 2001).

Each continuous predictor was tested for satisfying the assumptions of normality, linearity, homoscedasticity and multicollinearity. Residual scatter plots obtained provided a visual test of the assumptions of normality, linearity and homoscedasticity between the dependent variable continued usage of internet banking and errors of prediction. Detailed visual examination of the histograms and normal P-P plots of regression standardised residuals confirmed that the data conformed to the required assumptions. No outliers among the cases were identified with the application of $p < 0.001$ criterion for Mahalanobis distance. The data were free from multicollinearity, singularity or substantive deviations from normality.

4.7.2 Logic Behind the Use of Hierarchical Multiple Regression Analyses

The main aim of the research was to predict the power of the continued use of internet banking to influence a specific order of independent variable sets, thus assessing the unique contribution of each set of independent variables. Such a task is ideally suited to the statistical analysis of hierarchical multiple regression (Cooksey 2007). The specific

order of entry of the independent variable sets was based both on logical and theoretical considerations (Kasheir *et al.* 2009; Black *et al.* 2002, 2001), resulting in a parsimonious model (Miles & Shevlin 2001). Demographic variables were entered at the beginning of the analyses based on the logical consideration to control for their influence. The order of entering the technology, channel, social and value for money factors was based on the theory discussed in Chapter Two. Hierarchical multiple regression analyses was important as ‘semi-partialling’ or ‘the statistical removal of the influence of one or more variables from the correlational relationship between two variables’ (Cooksey 1997, p. 78-79). Thus, the partialling set of variables to be controlled for are considered first, followed by the actual predictor variables of interest which are added subsequently.

Table 4.17 summarises the different independent variable sets and their constituent predictor variables in the order in which the sets would be entered into the hierarchical regression model. Data intended to be subjected to hierarchical regression analysis were obtained from computed average scores on the two confirmed components of technology factors, two confirmed components of channel factors, one solid component of social factor and one resultant component of value for money factor, as identified earlier.

Table 4.17: Variable sets and their constituent Predictors included in the Hierarchical Regression Analyses

Variable sets	Variables
Demographic characteristics	Gender Age Level of Education Level of Income Ethnicity Occupation
Technology factors	Perceived Usability Perceived Trialability
Channel factors	Perceived Safety Perceived Specialty
Social factors	Social factors
Value for money factors	Value for money factors

The data pertaining to all the variables in Table 4.17 were examined through the SPSS 17 program for data accuracy, normality and assumptions of multivariate analyses prior to the actual hierarchical regression analyses. Then list wise deletion method was considered to be the safest and most appropriate option from a statistical estimation perspective since there were minimal missing data.

4.7.3 Explanation of the Model Predicting the Continued Use of Internet Banking

Hierarchical multiple regression analysis was employed to test for the effects of all independent variable sets in predicting the continued use of internet banking as the dependent variable. Table 4.18 displays the different variable sets entered in their sequential order, the R^2 change and its associated degrees of freedom, the F change (partial F -test) and associated p -value. The resultant regression weights obtained from the hierarchical multiple regression analysis are based on the log transformations of the independent variables. The right-hand portion of Table 4.18 lists the p -values for the individual independent variable sets contributing to the predictor variable at that step, relating to the variables analysed, the part (semi-partial) correlation, partial F , and sig. p -value.

The Durbin-Watson statistic was used to test for the presence of serial correlation among the residuals that is the assumption of independence of errors, which requires that the residuals or errors in prediction do not follow a pattern from case to case (Meyers *et al.* 2006). The value of the Durbin-Watson statistic ranges from 0 to 4. As a general rule of thumb, the residuals are not correlated if the Durbin-Watson statistic is approximately two, and an acceptable range is 1.50-2.50 (Wilcox 1997). For the present research, the Durbin-Watson statistic of 2.105 falls within the acceptable range. The tolerance values for all the independent variables were larger than 0.10, indicating that multicollinearity was not a problem in progressing with the proposed regression analysis (Cleveland 1984).

Table 4.18 displays a summary of the hierarchical multiple regression analysis with five models listed. At the end of each step model R^2 was significantly different from zero. In the final model, with all the independent variable sets in the equation, the overall regression model was significant ($R^2 = 0.424$, adjusted $R^2 = 0.395$, $F = 20.34$, $p < 0.001$). Thus, with all variable sets entered, nearly 43 percent of the variance in continued use of internet banking was explained.

In Model 1, the demographic characteristics set of variables did not contribute significantly to the prediction of continued use of internet banking (R^2 Change = 0.014, F Change = 0.857, $p = 0.527$). At Model 1, the demographic characteristics set were entered first in order to control for their influence. Demographic characteristics were examined to make sure that the effects attributed to later independent variable sets entered into the hierarchical multiple regression analysis were not due to demographic differences, thus removing their potential contaminating influence, if any. All other variable sets (i.e., technology, channel, social and value factors) were entered from Model 2 to Model 5.

In Model 2, the technology factors contributed significantly to the prediction of continued use of internet banking over and above what the demographic characteristics set could predict (R^2 Change = 0.232, F Change = 55.873, $p < 0.001$). Thus, the technology factors set uniquely accounted for 23 percent of the variance in continued use of internet banking over and above the previously entered set. Among the technology factors set, the perceived usability component ($sr^2 = 0.458$, Partial F = 10.043, $p < 0.001$) and perceived trialability component ($sr^2 = 0.189$, Partial F = 2.383, $p < 0.001$) were significant in the explanation of the variance in continued use of internet banking at this step. Increases in perceived usability and perceived trialability were predictive of an increase in consumers' continued use of internet banking.

In Model 3, the channel factors contributed significantly to the explanation of variance in continued use of internet banking over and above what the demographic characteristics and technology factors set could predict (R^2 Change = 0.132, F Change = 38.319, $p < 0.001$). Thus, the channel factors set uniquely accounted for 14 percent of the variance of continued use of internet banking over and above the previously entered sets. Among the channel factors set, perceived safety ($sr^2 = 0.236$, Partial F = 5.693, $p < 0.001$) and perceived specialty ($sr^2 = 0.199$, Partial F = 4.793, $p < 0.001$) components were significant in the explanation of the variance in continued use of internet banking. Increases in perceived safety and perceived specialty were predictive of an increase in consumers' continued use of internet banking. Thus, respondents who strongly agreed on perceived safety and perceived specialty components of the channel factors were associated with a significant increase in their continued use of internet banking.

In Model 4, the social factors set did not add significantly to the prediction of continued use of internet banking (R^2 Change = 0.001, F Change = 0.192, $p < 0.001$).

Thus, respondents did not consider social factors as significant predictors in determining their continued use of internet banking.

In Model 5, the value for money factors contributed significantly to the explanation of variance in continued use of internet banking over and above what the demographic characteristics, technology, channel and social factors could predict (R^2 Change = 0.056, F Change = 35.491, $p < 0.001$). Thus, the value for money factors set uniquely accounted for 6 percent of the variance of continued use of internet banking over and above the previously entered sets. Thus, respondents who strongly agreed on the value for money factors also tended to strongly agree on their significant increase in continued use of internet banking.

Table 4.18: Hierarchical Multiple Regression Model Summary

Model	Variable Set	R ² Change	df	F Change	Sig. F Change	Variable	sr ²	Partial F	Sig.
1	Demographic Characteristics	0.014	6	0.857	0.527	NS			
2	Technology Factors	0.232	2	55.873	< 0.001*	Perceived Usability	- 0.458	10.043	< 0.001*
						Perceived Trialability	0.189	2.383	< 0.001*
3	Channel Factors	0.132	2	38.319	< 0.001*	Perceived Safety	0.236	5.693	< 0.001*
						Perceived Specialty	0.199	4.793	< 0.001*
4	Social Factors	0.001	1	0.192	0.661	NS			
5	Value for money Factors	0.056	1	35.491	< 0.001*	Value for money Factors	0.236	35.491	< 0.001*
Overall Model R ² = 0.424, adjusted R ² = 0.395, F = 20.34, < 0.001*									
*≤ 0.05 considered significant									
0.05 < p ≤ 0.10 considered marginally significant									

Table 4.19 provides the hypotheses testing outcomes of the hierarchical multiple regression analyses performed with continued use of internet banking as a dependent variable.

Table 4.19: Hypotheses Testing Outcomes

Hypothesis	Result
H_{1A} : Identified technology factors will significantly predict continued use of internet banking over and above the influence of the demographic control variables.	Supported
H_{1Aa} : Identified perceived usability component of the technology factors will significantly predict continued use of internet banking over and above the influence of the demographic control variables.	Supported
H_{1Ab} : Identified perceived trialability component of the technology factors will significantly predict continued use of internet banking over and above the influence of the demographic control variables.	Supported
H_{2A} : Identified channel factors will significantly predict continued use of internet banking over and above the influence of the demographic control variables and technology factors.	Supported
H_{2Aa} : Identified perceived safety component of the channel factors will significantly predict continued use of internet banking over and above the influence of the demographic control variables and technology factors.	Supported
H_{2Ab} : Identified perceived specialty component of the channel factors will significantly predict continued use of internet banking over and above the influence of the demographic control variables and technology factors.	Supported
H_{3A} : Identified social factors will significantly predict continued use of internet banking over and above the influence of the demographic control variables, technology and channel factors.	Not Supported
H_{4A} : Identified value for money factors will significantly predict continued use of internet banking over and above the influence of the demographic control variables, technology, channel and social factors.	Supported

4.8 HIERARCHICAL LOGISTIC REGRESSION ANALYSIS

Logistic regression, a variant of an ordinary multiple regression procedure, handles prediction of and modelling responses to a categorical dependent variable using

any properly encoded predictors (Cooksey 2007). Hierarchical logistic regression allows the researcher to test the effects of certain predictors over and above the influence of others by specifying the order of entry of variables included in the study in a series of blocks (Cooksey 2007). Similar to hierarchical multiple regression, in hierarchical logistic regression the independent variable sets are entered into the analysis in blocks or groups that may contain one or more variables. Hierarchical logistic regression specifies a set of control variables entered in the first block and a set of predictor variables entered in the second and subsequent blocks. Demographic measures are often regarded as control variables due to the possible differences in scores that they attribute to the dependent variable.

The dependent variable is usually represented at either the nominal or ordinal scale with two categories (Cohen *et al.* 2003; Cooksey 2007). One of the objectives of the present research was to explain the frequent use of internet banking by consumers as a function of technology, channel, social and value for money factors which would assist in supporting the conceptual model proposed in Chapter Two. The subsequent sections present the results obtained from hierarchical logistic regression analyses in order to examine the relationships between demographic characteristics, technology, channel, social, value for money factors and consumers' frequent use of internet banking.

4.8.1 Testing of Assumptions

Logistic regression restricts to the binary dependent variable. In the present research, the dependent variable, frequent use of internet banking, consisted of two categories 'less than or equal to once a week' and 'more than once a week', thus satisfying the logistic regression requirement (Tabachnick & Fidell 2001). Logistic regression predicts the odds of an event occurring based on the probability.

The assumptions of normality, linearity, homoscedasticity and multicollinearity for each continuous predictor were satisfied. Residuals obtained followed a binomial distribution. Logistic regression does not assume homoscedasticity and the normality of the variables is not a stringent requirement. The data obtained were free from multicollinearity.

4.8.2 Logic Behind the Use of Hierarchical Logistic Regression

One of the main aims of the research was to predict the power of frequency of internet banking usage in terms of how it is influenced by a specific order of independent variable sets; the purpose being to assess the unique contribution of each set of independent variables on a binary coded categorical dependent variable, a task ideally suited for hierarchical logistic regression (Cohen *et al.* 2003; Cooksey 2007). The entry of independent variable sets in a specific order was based on logical and theoretical considerations (Black *et al.* 2002; Yousafzai *et al.* 2005) thus resulting in a parsimonious model (Miles & Shevlin 2001). The demographic characteristics set was entered at the beginning of the analyses based on the logical considerations, as their influence was to be controlled for. Based on the theoretical perspective discussed in Chapter Two, the order of entering technology, channel, social and value for money factors was specified.

Logistic regression was important to predict the probability that any observation will fall into one or the other category of the dependent variable from a set of predictors. However, the overall logic of the hierarchical logistic regression process relates to testing of the regression weights produced for significance as well as testing the overall quality of the prediction model using a variation of R^2 measure. The different independent variable sets and their constituent predictor variables were entered into the hierarchical logistic regression model in the same order as specified while performing the hierarchical multiple regression presented in Table 4.17. The data relating to all the variables were examined through the SPSS 17 program for data accuracy, normality and assumptions of multivariate analyses prior to the actual hierarchical logistic regression analyses.

4.8.3 Explanation of the Model Predicting the Frequent Use of Internet Banking

Hierarchical logistic regression is used to test for the effects of all independent variable sets in predicting the probability that each observation in a sample belongs to the dependent variable category coded as 1. All predictions were therefore expressed in terms of probabilities, rather than actual scores (Cooksey 2007). Table 4.20 displays the different variable sets entered in a series of blocks of predictors, -2 Log likelihood, Cox & Snell R Square, the Pseudo- R^2 measure called Nagelkerke R Square, and an overall classification prediction rate. The resultant hierarchical logistic regression weights are based on the log transformations of the independent variables. Table 4.21 lists the

significance values for the individual variable sets contributing to the prediction of the probability of belonging to the dependent variable at that step, B containing the estimated regression weights for each predictor, Wald Statistic testing the regression coefficient and Exp (B) relating to the transformation of each regression weight into a statement of the odds.

Table 4.20: Model Summary

Step	Variable Sets	Log likelihood criterion		R ² like criterion		Classification accuracy criterion
		-2 Log likelihood	Sig.	Cox & Snell R Square	Nagelkerke R Square	Overall Classification Results (Percent)
1	Demographic Characteristics	494.305	NS	0.036	0.119	59.4
2	Technology Factors	473.464	< 0.001*	0.151	0.134	67.2
3	Channel Factors	468.799	< 0.001*	0.200	0.248	72.0
4	Social Factors	468.419	NS	0.201	0.249	72.5
5	Value for money Factors	443.142	< 0.001*	0.283	0.368	82.4

Logistic regression offers three criteria for assessing the relative predictability of models incorporating a number of different predictor variables (Field 2000; Hair *et al.* 2006; Tabachnick & Fidell 2001). The first criterion is the existence of a significant increase or decrease in -2 Log likelihood, from the model with the more or fewer variables to the model with the fewer or more variables. The second criterion is that any changes in the size of Cox & Snell R Square and Nagelkerke R Square may derive from the addition or removal of certain variables. The third criterion reflects that the improvement or deterioration of the classification results derives from the addition or removal of certain variables (Gounaris & Koritos 2008). Following a hierarchical approach, all variables were entered in a series of blocks of predictors. All the variables included in the demographic control set were dummy coded so that the logistic regression procedure would correctly assign '0' and '1' values to their categories and the recoded versions were used in this analysis.

Table 4.21: Hierarchical Logistic Regression

Step	Variable sets and variables	B	S.E.	Wald	df	Sig.	Exp (B)
1	Demographic Characteristics						
	Education	2.029	0.573	11.103	1	0.001*	7.653
	Income	1.393	0.447	9.118	1	0.002*	4.056
2	Technology Factors						
	Perceived Usability	1.015	0.141	40.018	1	<0.001*	2.672
	Perceived Trialability	0.697	0.101	41.786	1	<0.001*	2.027
3	Channel Factors						
	Perceived Safety	0.651	0.083	28.437	1	<0.001*	1.678
	Perceived Specialty	0.509	0.739	1.738	1	0.152	0.623
4	Social Factors	0.501	0.853	1.934	1	0.324	0.783
5	Value for money Factors	0.412	0.072	9.832	1	0.001*	1.527

At Step 1, demographic control variables were entered into the hierarchical logistic regression analysis. Table 4.20 shows the value for the Nagelkerke R Square as 0.119, thus predicting about 11 percent of the variability in probabilities for belonging in the frequency of internet banking category coded as ‘1’ (more than once a week). This value reported for the Nagelkerke R Square was not statistically significant. The overall correct classification prediction rate was 59.4 percent at Step 1. Table 4.21 shows the contribution of each individual predictor entered in the logistic regression model. At Step 1, among the demographic control set, only the variables, level of education and level of income, were significant. The significant regression weight for level of education is positive and indicates that respondents with a higher level of education are associated with a greater likelihood of being in the ‘1’ category for frequent use of internet banking

(more than once a week). The exact odds of being in the '1' category for frequent use of internet banking, for high education levels, are 7.65 to 1 (over 7 times as likely). Similarly, the significant regression weight for level of income is positive and indicates that respondents with a high level of income are associated with a greater likelihood of being in the '1' category for frequent use of internet banking (more than once a week). Therefore, the exact odds of being in the '1' category for frequent use of internet banking, for high levels of income, are 4.05 to 1 (over 4 times as likely).

At Step 2, technology factors were entered into the hierarchical logistic regression analysis in order to predict frequency of internet banking usage over and above the demographic control variables. Table 4.20 shows the value for the Nagelkerke R Square as 0.134, thus predicting about 13 percent of the variability in probabilities for belonging to category coded as '1' for frequent use of internet banking (more than once a week). This value for the Nagelkerke R Square is statistically significant at $p < 0.001$. The classification accuracy criterion, represented as overall correct classification prediction rate, was 67.2 percent. Table 4.21 displays the contribution of every individual predictor entered in the logistic regression model. At Step 2, among the technology factors variable set, perceived usability and perceived trialability variables were significant. The significant regression weight for the perceived usability variable is positive and indicates that higher scores on perceived usability are associated with a greater likelihood of being in the '1' category for frequent use of internet banking. Therefore, the exact odds of being in the '1' category for frequent use of internet banking, for higher perceived usability scores, are 2.67 to 1 (over twice as likely). Similarly, the significant regression weight for the perceived trialability variable is negative and indicates that higher scores on perceived trialability are associated with a greater likelihood of being in the '1' category for frequent use of internet banking. The exact odds of being in the '1' category for frequent use of internet banking, for higher perceived trialability scores, are 2.02 to 1 (over twice as likely).

At Step 3, channel factors were entered into the hierarchical logistic regression analysis in order to predict frequent use of internet banking over and above the demographic control set of variables and channel factors variable set. Table 4.20 shows the value for the Nagelkerke R Square as 0.248, thus predicting about 25 percent of the variability in probabilities for belonging to category coded as '1' for frequent use of

internet banking (more than once a week). This value for the Nagelkerke R Square is statistically significant at $p < 0.001$. The classification accuracy criterion represented as the overall correct classification prediction rate was 72.0 percent. Table 4.21 displays the contribution of every individual predictor entered in the logistic regression model. At Step 2, among the channel factors variable set, perceived safety was significant and the perceived specialty variable was non-significant. The significant regression weight for the perceived safety variable is positive and indicates that higher scores on perceived safety are associated with a greater likelihood of being in the '1' category for frequent use of internet banking. Therefore, the exact odds of being in the '1' category for frequent use of internet banking, for higher perceived usability scores, are 1.67 to 1 (over 1.6 times more likely).

At Step 4, social factors were entered into the hierarchical logistic regression analysis in order to predict frequent use of internet banking over and above the demographic control set of variables, and the technology and channel factors variable sets. Table 4.20 displays the value for the Nagelkerke R Square as 0.247, thus predicting about 25 percent of the variability in probabilities for belonging to the category coded as '1' for frequent use of internet banking (more than once a week). This value for the Nagelkerke R Square is statistically non-significant. The classification accuracy criterion represented as an overall correct classification prediction rate was 72.5 percent.

At Step 5, value for money factors were entered into the hierarchical logistic regression analysis in order to predict frequent use of internet banking over and above the demographic control set of variables, and technology, channel, social and value for money factors variable sets. Table 4.20 shows the value for the Nagelkerke R Square as 0.352, thus predicting about 36 percent of the variability in probabilities for belonging to the category coded as '1' for frequent use of internet banking (more than once a week). This value for the Nagelkerke R Square is statistically significant at $p < 0.001$. The classification accuracy criterion represented as an overall correct classification prediction rate was 82.4 percent. The significant regression weight for the value for money factors variable set is positive and indicates that higher scores on perceived usability are associated with a greater likelihood of being in the '1' category for frequent use of internet banking. Therefore, the exact odds of being in the '1' category for frequent use of

internet banking, for higher perceived usability scores, are 1.52 to 1 (over 1.5 times as likely).

Table 4.22 summarises the hypothesis testing outcomes of the hierarchical logistic regression performed with frequent use of internet banking as a dependent variable.

Table 4.22: Hypotheses testing outcomes

Hypothesis	Result
H_{1B} : Identified technology factors will predict frequent use of internet banking over and above the demographic control variables.	Supported
H_{1Ba} : Identified perceived usability component of the technology factors will predict frequent use of internet banking over and above the demographic control variables.	Supported
H_{1Bb} : Identified perceived trialability component of the technology factors will predict frequent use of internet banking over and above the demographic control variables.	Supported
H_{2B} : Identified channel factors will predict frequent use of internet banking over and above the demographic control variables and technology factors.	Supported
H_{2Ba} : Identified perceived safety component of the channel factors will predict frequent use of internet banking over and above the demographic control variables and technology factors.	Supported
H_{2Bb} : Identified perceived specialty component of the channel factors will predict frequent use of internet banking over and above the demographic control variables and technology factors.	Not Supported
H_{3B} : Identified social factors will predict frequent use of internet banking over and above the demographic control variables, technology and channel factors.	Not Supported
H_{4B} : Identified value for money factors will predict frequent use of internet banking over and above the demographic control variables, technology, channel and social factors.	Supported

4.9 DISCUSSION OF THE FINDINGS FROM THE QUANTITATIVE DATA ANALYSIS

The main findings of the quantitative data analysis relative to consumers' continued and frequent use of the internet banking service delivery channel that are important to the Australian retail banking context were discussed in this section. Based on

the quantitative data analysis, the process that consumers go through from their internet banking adoption to its continued and frequent use relating to the consumer's post-adoption process was analysed. Factors influencing consumers' continued and frequent use of internet banking specific to the Australian context in a hierarchically specified order were identified. Figure 4.7 outlines this in diagrammatic form, eliciting the factors and their components that significantly influence consumers' continued and frequent use of internet banking based on the quantitative data analysis.

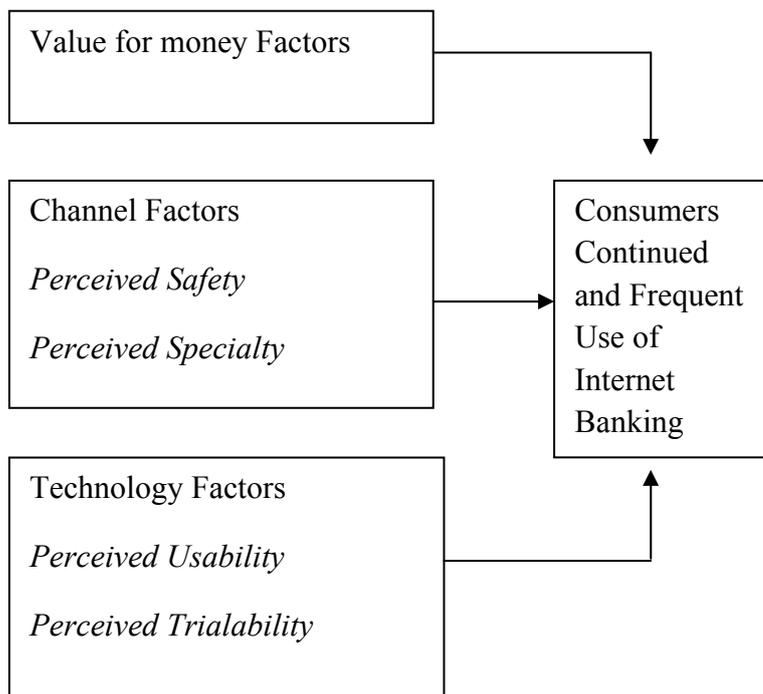


Figure 4.7: Diagrammatic representation of the factors influencing consumers' continued and frequent use of internet banking in Australian context

Descriptive statistics obtained with regard to the demographic profile of the users and non-users of internet banking indicate that significant differences were evident among the aforementioned categories with regard to gender, level of education and level of income variables. The abovementioned was consistent with the existing internet banking-related empirical studies. These studies in the existing literature identified that internet banking users usually had high levels of education and income there were proportionately more males than the females. However, ethnicity and occupation variables did not exhibit any significant differences between the users and non-users of internet banking. Non-users of internet banking were predominantly females. Also, non-users of internet banking were mostly with vocational education and training and were

proportionately dominated by low and middle income categories. These findings indicate that there exists a potential for the internet banking marketers and retail bank managers to target non-users of internet banking by employing segmentation strategies based on gender, level of education and level of income variables. Thus retail bank management need to motivate these segments by identifying various means such as advertising, special promotions, offering discounts, coupons and the like and elicit the advantages associated with the use of internet banking.

Descriptives obtained on general banking patterns of the users and non-users of internet banking noticeably show that the awareness, use and exposure levels of internet banking users to a wider range of financial products were comparatively higher than the non-users of internet banking. Thus there exists a scope for the retail bank management and marketing professionals to enhance the knowledge and awareness levels of the non-users of internet banking with regard to the various banking products and services currently available. Retail banks may need to specifically advertise the micro online channel aspects indicating the ease of use and convenience associated with the use of internet channels, promptness in rectifying the problems if any, and the presence of online personal help apart from the macro retail bank brand image.

Also, the descriptive statistics obtained from the general internet usage trends of the users and non-users of internet banking depict that more experience with the general internet significantly influences internet banking users' continued and frequent use. Retail bank management may conduct training sessions that are of a user-friendly nature to increase the level of internet using skills of the non-users. Time spent on the internet on an average per day did not show any significant differences between the users and non-users of internet banking. Type of internet connectivity exhibited significant differences between the users and non-users of internet banking. Most of the users possessed broadband connectivity. On the other hand, a major proportion of the non-users of internet banking possessed dial-up connectivity. Retail bank management, in conjunction with the internet service providers, may offer plans that create high customer and business value. Respondents accessing internet from home were found to use internet banking continuously and frequently. Bank management needs to comfort consumers that internet banking is safe to perform anywhere and anytime, which enhances consumers' internet banking transactions irrespective of the place of internet access.

Ranking the various service delivery channels based on the users and non-users of internet banking exhibited significant differences with regard to their frequency of usage. Obviously internet banking users ranked the internet banking service delivery channel as their most preferred option to perform their banking transactions followed by the use of ATMs. However, non-users of internet banking indicated the use of ATMs as their first preferred option to conduct their banking transactions followed by telephone banking. Retail bank management therefore needs to indicate the significant differences and similarities between the various banking service delivery channels available to the consumers and highlight the cost-effectiveness associated with the internet banking service delivery option in order to attract the non-users of internet banking to adopt and use it.

Irrespective of their internet banking usage, the major proportion of the users and non-users utilised the services of, and were clients of, at least two banks. However, a relatively small proportion of internet banking users were clients of three or four banks. Thus it is evident that the majority of the consumers utilise services of at least two banks in order to compare and contrast the different offerings and limits their switching behaviour.

Descriptive statistics, with regard to the users' internet banking usage indicate that a major proportion of them perform their banking transactions on the internet at home followed by the office. Public places like libraries and internet cafes were used less frequently by internet banking users to perform their internet banking transactions. Public places pose a threat to perform internet banking transactions. Retail bank professionals need to constantly reach out to mass consumers by indicating that internet banking is safe and secure. Also, internet banking users mostly use internet banking transactions for accessing their account information, funds transfer, balance inquiry and electronic bill payments. Other available facilities such as loan applications, securities trading and cheque book applications/cancellations were used less frequently. The aforementioned noticeably shows that only simple banking transactions were being performed by internet banking users. Retail bank management needs to organise to enhance the skill levels of their consumers in performing complex transactions online by providing online-based or bank-based training sessions.

The major proportion of internet banking users indicated that they perform internet banking either once a week or twice a week. At this juncture, initiation of special incentives to enhance consumers' frequent use of internet banking by bank management is essential. For every \$100 internet-based transactions, retail banks may take measures to offer \$1 cash back that can be accumulated and cumulatively used by the consumers after spending the certain specified amount. Retail banks can offer reward points to consumers who perform internet banking transactions in conjunction with other merchants.

Exploratory factor analysis performed for data reduction resulted in perceived usability and perceived trialability components of technology factors, perceived safety and perceived specialty components of channel factors and a single solid social and value factors. These results obtained from the principal component analysis evidently show that internet banking consumers predominantly look for the ease in using the technology-based service delivery option, its convenience, and its compatibility with their lifestyle, apart from their ability to communicate to others the benefits associated with the use of internet banking. The importance of the trialability nature with regard to consumers' continued and frequent use enhances their comfort in performing technology-based transactions, specifically with any add-on features, and acts as a catalyst in increasing consumers' actual use. Existing literature with regard to pre-adoption and adoption studies identified components such as relative advantage, compatibility, complexity, trialability and result demonstrability as influential in consumers' acceptance of internet banking. The present study identified perceived usability and perceived trialability components as influential to consumers' post-adoption behaviour.

The perceived safety and perceived specialty components identified as channel-related factors were associated with the importance that consumers relate to the risk, security, trust, self-efficacy and personalisation aspects of the internet banking service delivery channel. The emergence of the social factor as a single solid factor indicates that the influence of the subjective norm and interpersonal influence evident in consumers' pre-adoption process were of no significance in their post-adoption. Similarly, the emergence of the value for money component as a single solid factor depicts that the influence of the perceived benefits and perceived costs associated with consumers' pre-adoption and adoption of internet banking was not obvious in their post-adoption process.

The results obtained from the hierarchical multiple regression show the influence of value for money, channel and technology factors on consumers' continued use of internet banking. As the researcher was interested in variables of theoretical importance, demographic variables were controlled. As such demographic variables did not exert any influence on consumers' continued use of internet banking. Similarly, social factors did not exert any significant influence on consumers' continued use of internet banking as the comfort levels of the consumers' increases from their pre-adoption and adoption processes. Therefore, social channels were identified to be less important during the consumers' post-adoption process. In the pre-specified hierarchical order of importance, value for money, channel and technology factors were identified to exert significant impact on consumers' continued use of internet banking. Thus, during the consumers' post-adoption process, consumers' perceptions of the value for money component play a pivotal role by taking into consideration the economic value of the internet banking service delivery channel, its cost effectiveness and its service quality. Moreover, consumers who experienced internet banking as safe, special, secure, convenient and easy tend to perform internet banking transactions on a continuous basis, thus indicating the importance of channel and technology factors.

In line with the aforementioned discussion, the results obtained from the hierarchical logistic regression show the influence of value for money, channel and technology factors on consumers' frequent use of internet banking. The more consumers' value internet banking as cost effective and as of better quality, the more frequently they use it to perform their banking transactions. With regard to the channel-related components and their subsequent influence on consumers' frequent use of internet banking, their perceptions of internet banking as safe is directly proportional to consumers' frequent use. In the post-adoption process, consumers' frequent use of internet banking was not related to their perceptions of the specialty component of internet banking; however, consumers' perceptions of internet banking as useful and trialable significantly influence their frequent use of internet banking. There was no significant relationship between the social factor and its influence on consumers' frequent use of internet banking. Despite entering demographic variables into the analysis as control variables, level of education and level of income of the consumers significantly influenced their frequent use of internet banking.

Thus, during the consumers' post-adoption process, retail bank marketers and professionals need to exert more emphasis on increasing consumers' value for money, channel and technology-related perceptions. In comparison to other banking service delivery channels, retail bank management need to continuously strive to associate the cost effective and economic value aspects of internet banking in influencing consumers' uptake of internet banking on a continuous and frequent basis. Constant improvement in the provision of a safe and secure service to the internet banking consumers assists in effective formulation of channel management strategies.

4.10 SUMMARY

Chapter Four described the results obtained from the main survey. The proposed research model was tested using various statistical techniques. Exploratory factor analysis was conducted to refine the scale items used in the survey. Hierarchical multiple regression analyses were conducted to predict the continued use of internet banking as a consequence of technology, channel, social and value for money factors controlling for the demographic characteristics. Subsequently individual variables and their impact were examined in detail in predicting the continued use of internet banking. As hypothesised, technology factors consisting of perceived usability and perceived trialability significantly contributed to continued use of internet banking over and above the demographic control set. Similarly, channel factors consisting of perceived safety and perceived specialty components significantly contributed to the prediction of continued use of internet banking over and above the demographic control set and technology factors. Addition of social factors to the hierarchical multiple regression model did not add significantly to the prediction of continued use of internet banking. However, the addition of value for money factors in the final step of the hierarchical multiple regression model contributed significantly to the prediction of continued use of internet banking over and above the demographic control set, and the technology, channel, and social factors variable sets.

Hierarchical logistic regression was performed to predict the frequent use of internet banking as a consequence of demographic, technology, channel, social and value for money factors. This was followed by a focused examination of the individual variables and their impact on the frequent use of internet banking. The results show support for most of the research hypotheses developed in the research model specified in

Chapter Two. Among the demographic control variable set, level of education and level of income significantly contributed to the prediction of frequent use of internet banking. Technology factors consisting of perceived usability and perceived trialability components contributed to the prediction of frequent use of internet banking over and above the demographic control variable set. Among the channel factors, only the perceived safety component significantly contributed to the prediction of frequent use of internet banking over and above the demographic control set and technology factors. The perceived specialty component of the channel factors was non-significant. The addition of social factors did not contribute to the prediction of frequent use of internet banking over and above the demographic control variable set, and the technology and channel factors variable sets. Value for money factors added in the final step of the hierarchical logistic regression model contributed significantly to the prediction of frequent use of internet banking over and above the demographic control set, and the technology, channel and social factors variable sets. In order to further enhance the credibility of the quantitative results, data obtained from the four open-ended questions will be analysed through a qualitative thematic matrix display method in Chapter Five.

CHAPTER 5: QUALITATIVE DATA ANALYSIS

5.1 INTRODUCTION

This chapter discusses the results from an analysis of the four open-ended questions included in the main survey questionnaire. Out of the four open-ended survey items, responses were obtained from internet banking non-users for one of the open-ended questions, while internet banking users answered the remaining three open-ended questions. Thematic matrix display tables and content-analytic tables are used to display the thematic categories from the qualitative analyses. The results obtained from the qualitative data analysis are in the form of themes from each step of the analysis. These themes are linked to existing literature on continued usage of internet banking, frequency of internet banking usage and other adoption of internet banking studies as well as to the quantitative results discussed in the previous chapter.

5.2 OBJECTIVES OF THE QUALITATIVE DATA ANALYSIS

The open-ended questions relating to the qualitative data were developed alongside the quantitative scales within a general conceptual framework proposed in Chapter Two. As discussed in the literature review, most of the theoretical perspectives that emerged from existing studies on internet banking research were a result of quantitative studies involving testing of questionnaire data. In order to gain an in-depth understanding of the opinions of respondents about their internet banking experience, four qualitative open-ended questions were developed. These open-ended questions were exploratory in nature and arose mostly out of the existing literature which elicits the need for qualitative responses. As discussed in the literature review, most of the internet banking-related research focuses on factors affecting consumers' adoption of internet banking. Studies that focused on identifying factors that hinder consumers' adoption of internet banking were fewer in number. Therefore, the four open-ended questions developed in the present study makes an attempt to shift the focus of the existing literature by seeking the opinions of the respondents in their own words.

The objectives of the qualitative research were twofold, firstly obtaining reasons from internet banking non-users for their non-adoption of internet banking and secondly obtaining responses from internet banking users eliciting reasons for their use of other service delivery channels, as well as their perceptions and experiences with regard to

internet banking usage. Non-users of internet banking provided the reasons that hindered their adoption of internet banking, while internet banking users answered three open-ended questions related to circumstances which prompt them to use other service delivery channels, their perceptions regarding the proliferation of service delivery channels and their personal experiences with internet banking usage. The credibility of the findings obtained from the quantitative data would be enhanced by comparing the findings obtained from the qualitative data (Denzin & Lincoln 2000). It has been stated in the existing literature that the use and comparison of a mix of quantitative and qualitative data often minimises perennial accusations that quantitative research was context-stripped (Collis & Hussey 2003). In the case of research related to internet banking, much of the existing literature focuses on investigating factors related to either adoption or intention to adopt internet banking by consumers, thus paying little attention to identifying actual reasons for the non-adoption, circumstances, perceptions and experiences of consumers with the usage of internet banking. Furthermore, the importance of linking quantitative and qualitative data has started to gain momentum only recently (Collis & Hussey 2003).

Miles & Huberman (1994, p. 41), assert that qualitative data can help to validate, interpret, clarify and illustrate quantitative findings, as well as strengthen and revise theory. Similarly, Collis & Hussey (2003) suggest that it is advantageous to use both qualitative and quantitative research methods, as the qualitative data provides ‘insights and illuminations’ to the findings obtained from the quantitative data. Therefore open-ended questions were added to the questionnaire so that the qualitative responses obtained would not only enrich the quantitative aspect of the research but also extend the literature on internet banking research.

5.3 QUALITATIVE RESEARCH DESIGN

For the purpose of the present research, qualitative responses were collected from internet banking users and non-users. Responses were collected only to four open-ended questions as a deliberate attempt was made towards ‘focusing and bounding’ the research (Miles & Huberman 1994, p. 16). Also, one of the main issues related to the present research was to examine whether any prominent similarities or differences exist between theorised knowledge and actual perceptions the respondents have of their internet banking experiences. Moreover, the design of the four open-ended questions included in the questionnaire was limited and specifically relates to the respondents scope of answers.

Furthermore, these open-ended questions were placed at the end of the questionnaire in an attempt to engage respondents' free flowing opinions and let them relax from answering the quantified scale items related to internet banking usage. The abovementioned guidance was posited by Miles & Huberman (1994, p. 17), suggesting this method as 'a tighter research design akin to "confirmatory", seeking to test and further explicate the conceptualisation' of the topic under consideration.

5.3.1 Open-ended Research Questions Interrelationships

The interrelationships among the open-ended questions included in the qualitative phase of the study are displayed in Figure 5.1. The first open-ended question in the study investigates the factors that hinder the adoption of internet banking by non-users of internet banking in the Australian context. The remaining three open-ended questions collect responses from internet banking users about three areas. Firstly, an open-ended question asks the respondents under what circumstances do internet banking users use other service delivery channels to perform their banking transactions. The next question is concerned with obtaining respondents' perceptions about the proliferation of electronic banking channels offered by banks. The final question asks the respondents to describe their experiences with internet banking usage. Resulting responses would then be discussed with reference to the existing literature and to the quantitative findings obtained from the study. Emerging new dimensions would help to develop a more thorough theoretical understanding of internet banking research experience from the consumer's perspective. Figure 5.1 displays the conceptual framework for discussing the qualitative research. The actual open-ended questions asked are listed below.

- OEQ1 – Could you please tell us your reasons for not using internet banking to perform your banking transactions?
Internet banking non-user
- OEQ2 – As an internet banking user, under what circumstances do you use other ways to conduct your banking transactions?
Internet banking user
- OEQ3 – According to you, are the electronic banking methods offered by banks oriented towards the customer’s needs and wants?
Internet banking user
- OEQ4 – Would you like to offer any further comments about your experiences with internet banking?Internet banking user

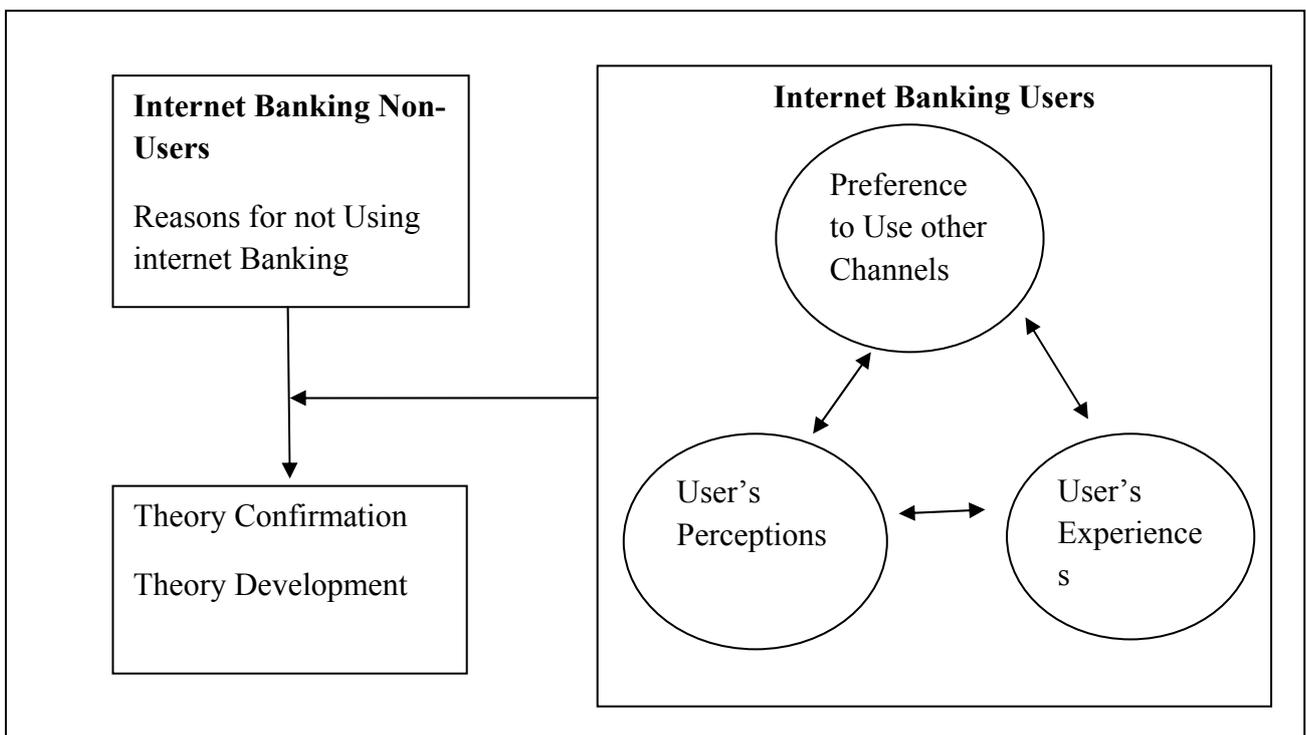


Figure 5.1: Conceptual Framework for a Qualitative Study on Internet Banking Continued Usage and Frequency of Usage

5.4 DATA PREPARATION

Raw data obtained from section eight of the questionnaire was categorised into a series of conceptually clustered matrices following the steps outlined in Chapter Three.

Actual responses obtained from each of the four open-ended questions were reduced to meaningful themes. Themes that were identified either supported the existing theory on internet banking research or introduced new themes specific to internet banking research in the Australian context from the consumers' perspective. The themes identified were displayed in the form of count summaries and frequencies of 'themed' responses.

5.5 THEMATIC MATRIX DISPLAYS

Miles & Huberman (1994, p. 132) reported the use of conceptually clustered matrix displays while reducing data into thematically similar categories. Also Miles & Huberman (1994, p. 127) recommended the application of thematic matrix displays where several research questions are clustered 'so that meaning can be generated more easily', and it is of primary interest when the researcher has 'a priori ideas about items that derive from the same theory or relate to the same overarching theme'. Miles and Huberman (1994, p. 127) also reported the possible occurrence of 'conceptual coherence' when the responses given by the respondents are more or less similar.

Subsequently, all the responses were manually transcribed for the analysis. Responses obtained for each open-ended question were systematically analysed for the presence of thematically similar words and phrases. Later these themes were compared with the selected demographic characteristics in order to investigate whether any similarities or differences occurred. Some actual quotes in the respondent's own words, which in a broader sense indicated what the majority of the respondents had written while filling out the questionnaire, are presented.

5.6 ANALYSIS OF RESPONSES TO OPEN-ENDED QUESTION 1: REASONS FOR NOT USING INTERNET BANKING

298 valid responses were analysed into common themes for the purpose of the present study from the effective sample size of 311. Out of these 298 responses, 98 were male respondents and 200 were female respondents. The majority of the respondents that provided reasons for not using internet banking transactions were within the age categories of 41-50 years and 51-60 years. Moreover, the majority of the responses for the open-ended question asking respondents the reasons for not using internet banking were provided by those with Asian and Anglo-Australian ethnic background, administration and self-employment categories, and with vocational education.

5.6.1 Content-Analytic Summary Table Displaying Reasons for not Using Internet Banking

Table 5.1 shows a hierarchy of macro and micro thematic categories in the second and third columns that emerged from the analysis of respondents' reasons for not using internet banking. These themes are then presented as the raw verbatim responses given by respondents and presented in the fourth column. The table also provides, in parentheses, the number of times a certain response was mentioned by respondents.

Table 5.1: Conceptually-clustered Matrix Display: Reasons for Not Using Internet Banking ^a

Number	Macro theme	Micro theme	Responses
1	Security (53)	Confidentiality	“afraid of losing confidential information / fear regarding loss of confidential data / worried that my confidential information might be lost / internet banking transactions may lead to loss of confidential information” (29)
		Privacy	“loss of private information / loss of personal data / personal information loss” (10)
		Authorisation	“cannot communicate with bank if anything is wrong / afraid I may not be authorised to my account / worried that I may not be authorised to request bank if any fraud occurs” (9)
		Availability	“my personal information may be available to third party / bank might make my information available to other companies / information regarding my transactions may be available to others which is not secure” (5)
2	Trust (47)	Lack of trust in the channel	“do not believe internet banking transactions / I don't trust electronic channels / do not trust this channel of service as there is no assurance that it is tamper free” (24)
		Lack of trust in the internet	“had bad experience with multi level marketing in internet / cannot trust internet / fake websites similar to those of banks may appear on internet which cannot be trusted”

Table 5.1: Conceptually-clustered Matrix Display: Reasons for Not Using Internet Banking ^a

Number	Macro theme	Micro theme	Responses
			(18)
		Lack of trust in the bank	“no trust in the bank / banks do not follow any ethical procedures and I have no trust in them” (3)
		Lack of trust in bank personnel	“I have no trust in the bank personnel / when dealing with big amount of money I do not trust bank staff / bank personnel are not safe though” (2)
3	Risk (34)	Financial risk	“any mistake will result in huge loss / internet banking is costly / if something is wrong refund may not be possible” (17)
		Psychological risk	“am afraid somebody might get my details / my information somehow will be accessed by others” (7)
		Physical risk	“eyes become sore often / results in back ache / eye sight would be affected” (5)
		Social risk	“bank staff more friendly and risk is less when dealing with them / face to face transactions are less risky” (3)
		Time risk	“no time to do / requires more time to perform internet banking” (2)
4	Value (28)	Costs	“fees might be low but internet connectivity costs much more / set up costs are high / facilities required to perform internet banking cost more” (17)
		Lack of benefits	“worried about the quality of internet banking transactions / benefits appear to be too marginal compared to ATMs / benefits are to the banks not for customers like me” (11)
5	Lack of resources (27)	Affordability	“no computer / cannot afford internet connection / internet access is present at work and cannot afford to have at home / broadband connection cannot be afforded as dialup is too slow” (18)
		Accessibility	“internet access not available / only dial-up access is available which is too slow to

Table 5.1: Conceptually-clustered Matrix Display: Reasons for Not Using Internet Banking ^a

Number	Macro theme	Micro theme	Responses
			perform any banking transactions” (9)
6	Social influence (23)	Friends	“my friends think banking on internet is not good / my friends and myself are not comfortable in using internet banking” (17)
		Colleagues	“my colleagues do not perform internet banking transactions / colleagues do not use internet banking / colleagues say internet banking is of no advantage” (4)
		Family	“none of my family members use internet banking, so do I / family has no good opinion on internet banking” (2)
7	Technology apprehension (22)	Self-efficacy	“do not have enough skills to operate internet / no experience with computer / never used internet or computer / lack of experience with computers” (14)
		Safety	“safety is an issue of concern with technology / technology related banking channels may not be safe / not safe with advanced technologies” (5)
		Discomfort	“generally not comfortable with technological matters / technological advancements are complex and are not so comfortable” (3)
8	Interactivity (21)	Uniqueness	“feel unique with face to face interactions / bank staff treat as a unique customer” (12)
		Communications	“branch promotional offers caters to my needs / marketing communications as a promotional tool are in accordance with my needs and are informed by bank personnel” (9)
9	Preference to other channels (19)	Convenience	“ATMs are more convenient to access ready cash / bank branch is conveniently located to my work place / always face to face interactions are convenient for me” (10)
		Ease of use	“telephone banking is easy / ATMs can be easily used when you shop and get cash if required / internet cannot be used easily anywhere and everywhere to perform

Table 5.1: Conceptually-clustered Matrix Display: Reasons for Not Using Internet Banking ^a

Number	Macro theme	Micro theme	Responses
			transactions” (6)
		Lack of feedback	“no printed feedback / internet banking do not have feedback control option as of ATMs” (3)
10	Routine (10)	Reluctance	“branch banking meets my requirements and I am reluctant to switch to these electronic banking / reluctant to do internet banking / reluctant to do myself when bank staff help is provided at branches” (7)
		Regularity	“my banking transactions are with branch bank regularly / use phone banking on a regular basis” (3)
11	Past users (8)	Non-monetary loss	“hard to do all by myself and it creates lot of tension particularly dealing with large amount of money / sometimes the bank sites are too slow resulting in uneasiness” (5)
		Monetary loss	“used to do internet banking in the past and I stopped using it as I lost \$1500 to a fake website / did in the past and once lost \$50” (3)
12	Performed by spouse (6)	Tradition	“it’s a tradition for me to go to bank branch for my banking needs and my partner deals with recent banking methods / since many years it is like a tradition to go to bank and my husband performs mobile and internet banking “ (3)
		Usage	“use only ATMs for any withdrawals and all banking transactions are performed by my spouse “ (2)
		Knowledge	“usually performed by my husband as I do not possess sufficient knowledge in dealing with internet transactions” (1)

^a Number of respondents mentioning a micro theme is provided in the parentheses categorised against a macro theme.

5.6.2 Analysis of ‘Macro’ and ‘Micro’ Themes

About twelve ‘macro’ themes were identified, each comprising several specific ‘micro’ themes. The macro and micro themes identified are presented in Table 5.1 in a hierarchical order followed by the respondent’s actual response provided in the parentheses. Hierarchical prevalence was determined based on number of counts of actual responses, with any cell containing four or more similar actual responses counts highlighted. Table 5.2 provides the macro and micro themes count and percentages. The second column of Table 5.2 displays macro and micro themes that were identified and third and fourth columns display the response counts and valid percents respectively.

Table 5.2: Macro and Micro Theme Counts and Percentages: Reasons for Not Using Internet Banking ^{a,b}

Number	Macro theme	Micro theme	Count	Percentage
1	Security		53	17.8^a
		Confidentiality	29	54.7 ^b
		Privacy	10	18.9 ^b
		Authorisation	9	17.0 ^b
		Availability	5	9.4 ^b
2	Trust		47	15.8^a
		Lack of trust in the channel	24	51.1 ^b
		Lack of trust in the internet	18	38.3 ^b
		Lack of trust in the bank	3	6.4 ^b
		Lack of trust in the bank personnel	2	4.3 ^b
3	Risk		34	11.4^a
		Financial risk	17	50.0 ^b
		Psychological risk	7	41.2 ^b
		Physical risk	5	71.4 ^b
		Social risk	3	60.0 ^b
		Time risk	2	66.7 ^b
4	Value		28	9.4^a
		Costs	17	60.7 ^b
		Benefits	11	64.7 ^b

Table 5.2: Macro and Micro Theme Counts and Percentages: Reasons for Not Using Internet Banking ^{a,b}

Number	Macro theme	Micro theme	Count	Percentage
5	Lack of resources		27	9.1^a
		Affordability	18	66.7 ^b
		Accessibility	9	50.0 ^b
6	Social influence		23	7.7^a
		Friends	17	73.9 ^b
		Colleagues	4	17.4 ^b
	Family	2	8.7 ^b	
7	Technology apprehension		22	7.4^a
		Self-efficacy	14	63.6 ^b
		Safety	5	22.7 ^b
		Discomfort	3	13.6 ^b
8	Interactivity		21	7.0^a
		Uniqueness	12	57.1 ^b
		Communications	9	75.0 ^b
9	Preference to other channels		19	6.4^a
		Convenience	10	52.6 ^b
		Accessibility	6	31.6 ^b
		Lack of feedback	3	15.8 ^b
10	Routine		10	3.4^a
		Reluctance	7	70.0 ^b
		Regularity	3	30.0 ^b
11	Past users		8	2.7^a
		Non-monetary loss	5	62.5 ^b
		Monetary loss	3	37.5 ^b
12	Performed by spouse		6	2.0^a
		Tradition	3	50.0 ^b
		Usage	2	33.3 ^b
		Knowledge	1	16.7 ^b

^a Macro theme percentage is out of all responses

^b Micro theme percentages are out of all responses for their respective macro theme

The following discussion relates to the emerged macro and micro themes by analysis of the open-ended question referring to the reasons for not using internet banking from non-users of internet banking.

Based on the actual response counts obtained from the internet banking non-users, 'security' is identified as the macro dimension that most concerns non-users. Under the macro theme of 'security' the four micro dimensions, confidentiality, privacy, authorisation and availability, are in descending order. Thus 'loss of confidential information' and 'loss of personal information' prevents a major proportion of the non-users from adopting and using internet banking. Fear of 'availability of the personal information to other parties' and fear of unauthorisation to navigate through the banks' websites when problems arise also stand as prominent micro dimensions that impede these respondents adoption of internet banking. A closer look at the internet banking non-users demographic data reveals that 'security' is more of a concern for females compared to males.

'Security is the major concern. Though Australia is a developed country, it does not mean that financial transactions are secure enough' (*Respondent # 202*).

'I am concerned with the privacy issues and I do not want more information accessible neither to the bank nor to the other parties about my monetary issues' (*Respondent # 57*).

'My concern is I am afraid that my personal information is made available to third parties for whatever reason' (*Respondent # 81*).

'What if the bank does not allow me to navigate through their internet channels if any problem occurs?' (*Respondent # 19*).

'Trust' has been identified as the second important macro theme based on the actual response counts offered by the internet banking non-users. Under the macro theme of trust, four micro themes arise in descending: lack of trust in the channel, lack of trust in the internet, lack of trust in the bank and lack of trust in the bank personnel. Lack of trust in the channel was related to the 'financial transactions' and 'electronic channels' in a more specific and general manner. Lack of trust in the internet was related to the non-users past experiences with 'multi level marketing' and 'fake websites'. Some of the non-users associated their lack of trust in the bank with regard to possible 'financial loss' and

‘banks no assurance’. Lack of trust in the bank personnel was reported most often by male respondents who were self-employed and dealing with vast amounts of money in their usual transactions. Also lack of trust in the bank personnel by non-users of internet banking was associated with their familiarity with the technological advancements and possibly the fear associated with any financial loss.

‘I do not trust the internet for doing banking transactions’ (*Respondent # 119*).

‘I don’t really trust internet and internet banking and I often ensure that I am safe with the branch bank transactions’ (*Respondent # 25*).

‘I simply do not trust the bank, often there is no assurance that they will take care if a fraud occurs’ (*Respondent # 11*).

‘Banks’ personnel are familiar with different modes of banking and I cannot trust them as they can tamper my account anytime’ (*Respondent # 7*).

The ‘risk’ associated with internet banking also emerged as a macro theme. The associated micro themes under the macro theme of ‘risk’ relate to various forms of risk in descending order: financial, psychological, physical, social and time risk. Internet banking non-users’ financial risk perceptions were related to ‘financial loss’, ‘costly’ and ‘occurrence of fraud’. Non-users assume that they might be in a risky situation psychologically if their banking ‘information is accessed’ by unknown personnel. Physical risk refers to the ‘sore eyes’, ‘back pain’ and ‘decrease in eye sight’. Social risk relates to the non-users’ perceptions towards bank staff being more ‘friendly’ and ‘safe’. Time risk includes non-users perceptions that internet banking consumes ‘more time’. A closer look at the demographic data reveals that it was female internet banking non-users who reported physical and social risk associated with internet banking more often than male non-users.

‘Basically I do not want to take any risk’ (*Respondent # 17*).

‘I am concerned with the risk associated with dummy sites that procure your account and password. This happened to my friend once and he had a financial loss of \$2000, which is not a small amount you know’ (*Respondent # 101*).

‘Internet banking is risky and can affect my eyes’ (*Respondent # 26*).

‘When bank tellers are so friendly, why should I take the risk of doing internet banking all by myself?’ (*Respondent # 49*).

‘It is always risky and psychologically very distressing that my information will be accessed by someone’ (*Respondent # 96*).

The next macro theme identified was the ‘value perceptions’ non-users associate with internet banking. The ‘value’ theme subsumed two micro themes of costs and lack of benefits, based on the respondents’ actual response counts. Cost perceptions of the respondents were related to the auxiliary features that are essential for performing internet banking such as ‘setup costs’ and ‘internet connection’. Lack of benefits referred to ‘beneficial to the banks’ and the value associated to internet banking is ‘too marginal’ when compared to other electronic banking channels. Again, looking at the demographic data of the non-users reveals that most of the respondents whose value perceptions were related to the perceived costs fell within the low income range of \$20001 to \$35000.

‘I do not have broadband connection and dial up is too slow to perform any banking transactions. I feel possessing broadband connection is really expensive in Australia’ (*Respondent # 8*).

‘I know that Internet banking do not involve any fees, but how about setup costs? Aren’t they costly?’ (*Respondent # 33*).

‘For me the value of internet banking is too marginal compared to other electronic banking channels’ (*Respondent # 59*).

‘Internet banking is beneficial for the banks, not for customers like me’ (*Respondent # 113*).

‘Lack of resources’ was identified as another macro theme. The most prevalent micro themes in descending order were affordability and accessibility. Affordability refers to ‘lack of computer’ and ‘lack of internet’. On the other hand, ‘lack of internet access at home’ and ‘lack of broadband connection’ relate to the micro theme accessibility. Also a perception of the non-users towards dial-up internet connectivity

being slow encourages them to possess broadband connection which is linked to their affordability.

‘I have dial up connection at home and it is slow that the required site opens after a long time. I think it is of no help to perform internet banking’ (*Respondent # 184*).

‘I do not possess a computer either at home or at work’ (*Respondent # 149*).

‘I have computer but no internet access’ (*Respondent # 104*).

‘Broadband connection is too expensive’ (*Respondent # 12*).

‘Social influence’ was identified as another major theme that impedes adoption of internet banking by non-users. The prevalent micro themes in connection to the social influence macro theme relates to the influence of friends, colleagues and family members on the respondents’ decision-making whether to adopt internet banking or not. Actual responses include ‘friends do not use’, ‘colleagues think internet banking is of no advantage’ and ‘family members has no good opinion’ on performing internet banking transactions. Data reveals that ethnicity of the respondents seems to correlate with the social influence factor. Most of the Australian respondents with Asian ethnic origin have reported that social influence is the major factor hindering them from using internet banking service. Usually, banking transactions are considered to be performed in private and there is little scope to discuss one’s banking actions with others. However, results obtained indicate that consumers with Asian ethnicity are influenced by friends and colleagues in the use of banking services.

‘None of my friends use internet banking and I never tried to explore that option as ATM and telephone banking is easy to use’ (*Respondent # 5*).

‘Neither my friends nor my colleagues at work use internet banking. I am comfortable and happy with branch bank services’ (*Respondent # 33*).

‘My family members have no good opinion on internet banking transactions’ (*Respondent # 3*).

‘Technology discomfort’ was identified as the macro theme that hinders the adoption of internet banking by non-users. Micro themes identified in order of prevalence relate to self-efficacy, safety and discomfort. Actual responses indicate that the self-efficacy theme refers to ‘lack of skills’ and ‘lack of experience’ with internet banking, internet and computers. Non-users’ perceptions that ‘advanced technologies not safe’, ‘not comfortable with technologies’ and ‘technological advancements are complex’ relate to safety and discomfort micro themes. Technology as a factor hindering the use of internet banking service is associated with mature consumers and is related to the age of the consumer.

‘I never used internet and do not possess skills or experience to work with computers’
(*Respondent # 231*).

‘I am too old to perform internet banking. I lack the knowledge of working with computers’ (*Respondent # 152*).

‘Recent advances in technology are of major concern to me. Entire world is becoming so much involved with the technology that at this age it is difficult for me to learn new technologies. I prefer going to bank branch and talk to the branch teller while doing any banking transactions, so that I am safe’ (*Respondent # 135*).

‘Interactivity’ is another macro theme that was identified which obstructs the adoption of internet banking and the micro themes associated include uniqueness and communications. Actual responses relating to uniqueness and communications micro themes were ‘bank staff treats me as a unique customer’ and ‘promotional offers are in accordance to my needs’. Most of the non-users expressed their concerns towards the personalised assistance they require when things go wrong. The customer service and assistance provided online is not immediate is the common notion that non-users carry with them.

‘Bank staff treats me as a unique customer and any help requested is immediately done’ (*Respondent # 127*).

‘Bank personnel convey about the promotional offers that are tailored to me’ (*Respondent # 211*).

‘The promotional offers by the bank are in accordance to my needs’ (*Respondent # 27*).

‘Preference to other channels’ also was identified as one of the macro themes which hinder the adoption of internet banking by non-users. The most prevalent micro themes subsumed to preference to other channels refer to convenience, ease of use and lack of feedback. Preference to other banking channels in respondents’ actual responses indicate ‘more convenience to access ATMs’, ‘telephone banking as easy to use’, and ‘no feedback control of internet banking’. Respondents usually mentioned traditional banking with branches and electronic channels such as use of ATMs and telephone banking as convenient and easy to use. It is worth noting that there was no mention of mobile banking.

‘ATMs are more convenient to access for ready cash’ (*Respondent # 290*).

‘Telephone banking is easy to use’ (*Respondent # 89*).

‘There is no proof for Internet banking transactions in the form of a printed feedback control which is a major concern’ (*Respondent # 51*).

‘Routine behaviour’ was identified as another macro theme that was impeding adoption of internet banking by non-users. Reluctance and regularity were the micro themes in descending order referring to the routine thematic area. Routinised behaviour and general inertia has been identified as one of the factors impeding consumers from using the internet banking service. Actual responses were related to ‘reluctant to switch’, ‘reluctant to do myself’ and ‘performing transactions with the bank branch on a regular basis’. Results indicate that this factor is also related to ethnicity of some non-users. Certain non-users, irrespective of their age, income and occupation but with certain ethnic backgrounds are reluctant to use internet banking service just because they are used to performing in a routine manner in their home country.

‘I have been too lazy and reluctant to set up internet banking and have been intending to set it up but never get around to it’ (*Respondent # 4*).

‘I am used to the routine of going to the bank regularly to perform my banking transactions’ (*Respondent # 148*).

‘I came to Australia from South America 10 years ago and now I am an Australian citizen. In our country it is a routine habit to go to bank branch and perform transactions. Though I stayed in Australia for 10 years, I am used to go to bank branch and I am reluctant to change my routine’ (*Respondent # 64*).

‘I am reluctant to use electronic based banking methods’ (*Respondent # 265*).

Another macro theme refers to the ‘past users’. Micro themes identified were non-monetary and monetary losses with regard to internet banking transactions. This macro theme identifies respondents who were performing internet banking transactions in the past and currently are non-users due to the non-monetary and monetary losses experienced by them in the past. Thus past users actual responses relate to ‘fake websites’, ‘bank sites too slow creates distress’, ‘hard to do all by myself’, and ‘fraud’.

‘In the past when I was using internet banking there was a fraud and I lost \$1500 and bank did not treat me properly’ (*Respondent # 70*).

‘When I was using internet banking two years ago I lost \$50 and neither the bank nor the bank staff tried to rectify it. If the same happens with the large amount is what concerned me and I stopped performing internet based transactions’ (*Respondent # 69*).

‘As an internet banking user in the past it used to take lot of time to perform overseas transactions which was stressful’ (*Respondent # 9*).

The last macro theme identified was ‘internet banking performed by the spouse’. Micro themes in order of prevalence relate to tradition, usage and knowledge. Actual responses relate to ‘lack of sufficient knowledge’, ‘performed by my husband’, ‘performed by my partner’, ‘as a tradition’ and ‘usage’. The macro theme in relation to the demographic data reveals that all the non-users who attributed that internet banking was performed by their spouse were females.

‘My husband performs all the banking transactions as I lack sufficient knowledge’
(Respondent # 211).

‘Since many years it is a tradition for me to go to bank for my needs and my partner uses all recent banking methods’ (Respondent # 74).

‘My banking transactions are usually limited and I use ATMs. My husband takes care of all the high end transactions’ (Respondent # 224).

Thus in an Australian banking context, 12 macro themes were identified to be hindering the adoption of internet banking by the non-users.

5.7 ANALYSIS OF RESPONSES TO OPEN-ENDED QUESTION 2: CIRCUMSTANCES UNDER WHICH INTERNET BANKING USERS USE OTHER WAYS TO CONDUCT THEIR BANKING TRANSACTIONS

Responses for this open-ended question were obtained from the internet banking users. From the effective sample size of 372 internet banking users contacted for the purpose of the present study 354 respondents provided valid responses explaining the circumstances under which they use other ways to conduct their banking transactions. Out of these 354 responses, 205 were from male respondents and 147 from female respondents. Moreover, 267 respondents had higher education qualifications and 283 respondents were in the managerial occupation. Furthermore, 198 of the respondents specified their level of income was within the range of \$65 001 to \$80 000.

5.7.1 Content-Analytic Summary Table Displaying Circumstances under which Internet Banking Users use other ways to conduct their Banking Transactions

The second and third columns presented in Table 5.3 display a hierarchy of macro and micro thematic categories that emerged from the analysis of responses regarding ‘circumstances under which internet banking users use other ways to conduct their banking transactions’. The macro and micro themes enumerated are enhanced by brief actual quotations obtained from the respondents displayed in the fourth column of the Table 5.3. The number of times a certain response was mentioned by the respondents is presented in the parentheses.

Table 5.3: Conceptually-clustered Matrix Display: Circumstances Under which Internet Banking Users Use other Ways to Conduct their Banking Transactions ^a

Number	Macro theme	Micro theme	Responses
1	Unable to perform over the internet (218)	Cash withdrawals	“cash cannot be withdrawn / unable to do cash withdrawals / ready cash cannot be dispensed from internet banking / ready cash not available and withdrawn” (163)
		Deposit cheques	“cheques cannot be deposited / depositing cheques not possible / cannot deposit cheques / no cheque deposit facility” (30)
		Overseas transactions	“overseas transactions cannot be performed on a full scale / overseas transactions need to be done in the bank / overseas transactions cannot be completed / overseas transactions require assistance from bank staff” (18)
		Money orders	“money orders cannot be processed / sending money orders is difficult / need to go to bank branch to process money orders” (7)
2	Lack of internet access (68)	Travel	“while travelling internet access may not be available all the time / when travelling prefer to use ATM / accessing internet is difficult during travel” (43)
		Server site problems	“banks’ site problems cause lack of proper access / servers might be down at times / server site may create problems and slow down accessing internet transactions” (11)
		Internet speed is slow	“sometimes internet speed may be slow / if speed of the internet is not fast enough preference may orient to other channels” (9)
		Failure in the power	“though rare, power failure encourages to use other banking channels / cannot access internet when there is a power failure” (5)
3	Not sure of something (38)	Introduction of new products or services	“when innovative products are introduced and not sure of a decision prefer to go to bank to get more detailed information / prefer to talk to bank personnel when new products are introduced by the bank and not sure of something” (25)
		Dealing with major loans	“major investment decisions such as mortgage loan, personal loan etc., prefer to go to bank to make sure everything is alright and not sure of some aspects / dealing with big loans

Table 5.3: Conceptually-clustered Matrix Display: Circumstances Under which Internet Banking Users Use other Ways to Conduct their Banking Transactions ^a

Number	Macro theme	Micro theme	Responses
			prefer to go to bank / vast investments and loans prefer to talk to bank personnel when cannot make a decision by myself and not sure of something” (10)
		Change in website functions	“any changes in the website and unclear instructions leads to the bank” (3)
4	Problem rectification (23)	Regular transactions	“if any problems arise in regular bill payments such as rental, electricity etc., for clarification prefer to go to bank / any overpayments or underpayments in performing regular transactions prefer to talk to bank staff” (18)
		Rare transactions	“internet purchasing and payments made over internet at times create problems that need to be corrected / rarely internet shopping and related payments create transaction problems” (5)
5	Proximity to auxiliary facilities (7)	Computer location	“at home, computer is located upstairs and if the location of telephone is convenient, prefer to perform phone banking / access to computer if restricted prefer to perform transactions over other channels” (5)
		Type of internet connection	“do not have broadband connection at home and the preference is for phone banking / dial-up connection at home is slow to do banking transactions and perform most of the banking transactions at office as broadband connectivity is really fast” (2)

^a Number of respondents mentioning a micro theme is provided in the parentheses categorised against a macro theme.

5.7.2 Analysis of ‘Macro’ and ‘Micro’ Themes

Table 5.4 further provides the count and percentages of the macro and micro themes. In the second and third columns, the hierarchy of macro and micro thematic categories is enumerated. The fourth and fifth columns display the actual count and percentages of each macro and micro themes identified.

Table 5.4: Macro and Micro Theme Counts and Percentages: Circumstances Under which Internet Banking Users Use other Ways to Conduct their Banking Transactions

Number	Macro theme	Micro theme	Count	Percentage
1	Unable to perform over the internet		218	61.6^a
		Cash withdrawals	163	74.8 ^b
		Deposit cheques	30	13.8 ^b
		Overseas transactions	18	8.3 ^b
		Money orders	7	3.2 ^b
2	Lack of internet access		68	19.2^a
		Travel	43	63.2 ^b
		Server site problems	11	16.2 ^b
		Internet speed is low	9	13.2 ^b
		Failure in the power	5	7.4 ^b
3	Not sure of something		38	10.7^a
		Introduction of new products or services	25	65.8 ^b
		Dealing with major loans	10	26.3 ^b
		Change in website functions	3	7.9 ^b
4	Problem rectification		23	6.5^a
		Regular transactions	18	78.3 ^b
		Rare transactions	5	21.7 ^b
5	Proximity to auxiliary facilities		7	2.0^a
		Computer location	5	71.4 ^b
		Type of internet	2	28.6 ^b

Table 5.4: Macro and Micro Theme Counts and Percentages: Circumstances Under which Internet Banking Users Use other Ways to Conduct their Banking Transactions

Number	Macro theme	Micro theme	Count	Percentage
		connection		

^a Macro theme percentage is out of all responses

^b Micro theme percentages are out of all responses for their respective macro theme

Five ‘macro’ themes were identified, each comprised of several more specific micro themes. The first macro theme, ‘unable to perform over the internet’, subsumed four micro themes. The most prevalent micro themes in descending order were cash withdrawals, deposit cheques, overseas transactions and money orders. The macro theme, ‘unable to perform over the internet’, relates to the inability of the respondents to perform certain banking transactions over the internet. Actual counts indicated ‘cannot perform cash withdrawals’, ‘unable to deposit cheques’, ‘overseas transactions are difficult to perform over the internet’, and ‘cannot process money orders’. Lack of the abovementioned facilities over the internet encourages internet banking users to approach and use other modes of service delivery at relevant circumstances to meet their banking needs and requirements effectively.

‘Whenever ready cash is required I prefer to go to ATM and withdraw cash’ (*Respondent # 21*).

‘Cash cannot be withdrawn through internet banking, so I look for ATM for ready cash’ (*Respondent # 192*).

‘As part of my job, I need to deposit cheques more often. As this facility is not available with internet banking, I prefer to go to bank branch’ (*Respondent # 201*).

‘My extended family lives in overseas. Overseas transactions are not so easy to perform over the internet. I need to go to bank to do my overseas related transactions’ (*Respondent # 94*).

‘To process money orders I go to bank as internet banking cannot do that’ (*Respondent # 71*).

The second macro theme identified was ‘lack of internet access’ which subsumed four micro themes. Based on the number of counts the most prevalent micro themes in a hierarchical order were travel, server site problems, internet speed is low and failure in the power. Actual responses refer to ‘no internet access during travel’, ‘server sites at times are problematic to access internet’, ‘internet speed is not fast delaying internet access’ and ‘though rare, power failure relates to lack of internet access’. Circumstances such as those mentioned above require internet banking users to use other available alternative modes of service delivery channels.

‘Whenever I travel I prefer to use ATM rather than internet for my personal banking’
(Respondent # 39).

‘Getting proper internet access during travel is difficult and my preference is to use ATM’
(Respondent # 234).

‘At times the server sites are problematic which might reduce the speed of internet accessibility’ (Respondent # 312).

‘Internet access could be impeded sometimes which reduces the internet speed and makes internet banking difficult’ (Respondent # 65).

‘Though rare, internet cannot be accessed when there is a failure in the power which obstructs my banking transactions over the internet. I look for feasible alternatives’
(Respondent # 29).

In a hierarchical order, the third macro theme identified was ‘not sure of something’. The third macro theme subsumed three micro themes of introduction of new products or services, dealing with major loans and change in website functions based on the counts in descending order. Actual responses include ‘not sure of something when new products are introduced’, ‘not sure of something when dealing with major investments and loans’, and ‘not sure of something when there is a change in website related functions’. The abovementioned micro themes are mostly situation specific and most of the respondents indicated that when they are faced with these specific situations they prefer to go to the bank and clarify with the bank personnel.

‘Banks frequently introduce innovative products and services. When I am not sure of something I prefer to go to the bank and deal with the staff there to resolve the issue’ (*Respondent # 77*).

‘Particularly dealing with housing loans I prefer to talk to the concerned bank personnel and make sure that everything is clear for me’ (*Respondent # 328*).

‘Dealing with major investments and loans on a personal level I prefer to make sure with the bank that everything is clarified to me’ (*Respondent # 35*).

‘When my bank makes changes to its existing website features and if I am not sure of something, I prefer to speak to the bank staff for clarification’ (*Respondent # 59*).

The fourth macro theme relates to ‘problem rectification’. Based on the counts available to this macro thematic category, it subsumed two micro themes. In order of prevalence these micro themes were regular transactions and rare transactions. Actual responses refer to ‘rectifying problems associated with regular bill payments’, ‘correcting over or under payments related to the bills on a regular basis’, ‘correcting problems associated with internet purchasing rarely’ and ‘problem rectification while performing internet shopping less frequently’. Thus regular transactions were associated with overpayment or underpayment of the bills over the internet. On the contrary, rare transactions were related to internet purchasing and internet shopping. Respondents evidently indicated that when potential problems arise on a regular or rare basis for rectifying those problems, they prefer to go to the bank.

‘I purchased sports shoe over the internet and paid the amount charged through internet banking using my credit card. Payment was not received by the vendor. And I need to go to the bank to fix this problem’ (*Respondent # 4*).

‘I usually pay all my regular bills over the internet using internet banking. Once there was an overpayment and to rectify this problem I have to go to the bank and talk to the staff there’ (*Respondent # 87*).

The last macro theme identified was ‘proximity to auxiliary facilities’. The most prevalent micro themes associated with the macro theme proximity to auxiliary facilities were computer location and type of internet connection in descending order. Actual respondents counts relate to ‘location of computer distantly and proximity to telephone’ and ‘dial-up connection being slow and proximity to telephone’. Problems associated with the location and type of connection of primary facilities such as computer and internet encourages internet banking users to perform their transactions using other modes. All the respondents indicated their preference to use telephone banking in the absence of primary facilities and proximity to an auxiliary facility such as availability of the telephone.

‘My computer at home is located upstairs and at times I prefer to use phone banking as telephone is conveniently located in the living room’ (*Respondent # 247*).

‘I usually perform internet banking from my office as internet speed is fast with broadband connection. At home I have dial-up connection. If I need to perform any banking transactions while at home, I prefer to use telephone banking’ (*Respondent # 63*).

5.8 ANALYSIS OF RESPONSES TO OPEN-ENDED QUESTION 3: ARE THE ELECTRONIC BANKING METHODS OFFERED BY BANKS ORIENTED TOWARDS CUSTOMER’S NEEDS AND WANTS

From the effective sample size of 372 internet banking users, only 323 respondents responded to the open-ended question ‘are the electronic banking methods offered by banks oriented towards customer’s needs and wants’. Out of these 323 responses, 202 were male respondents and 121 female respondents. Moreover, 153 respondents were in the managerial category. Furthermore, 184 respondents exhibited higher levels of education.

5.8.1 Content-Analytic Summary Table Displaying Consumers Perceptions regarding the Electronic Banking Methods offered by the Banks

In the second and third columns, Table 5.5 elaborates the hierarchy of macro and micro thematic categories that emerged from the analysis of responses regarding ‘are the electronic banking methods offered by banks oriented towards customer’s needs and wants’. The displayed macro and micro themes are enhanced by brief actual quotations

from respondents. The table also enumerates the number of times a certain response was mentioned by the respondents presented in the parentheses.

Table 5.5: Conceptually-clustered Matrix Display: Are the Electronic Banking Methods Offered by Banks Oriented towards Customer’s Needs and Wants ^a

Number	Macro theme	Micro theme	Responses
1	Positive perceptions (183)	Convenient	“yes, it is very convenient / very convenient and yes / convenient / yes they are so convenient” (59)
		Easy to use	“yes and they are easy to use / easy to use / easy to perform transactions / yes they are very easy to perform” (32)
		User friendly	“they are more user friendly / yes they are user friendly / more user friendly” (23)
		Compatible	“they suit my lifestyle / yes they are compatible with my requirements / they are compatible with my banking needs / yes they are more compatible” (20)
		Advantageous	“yes they do offer several benefits and are advantageous / more advantageous / definitely advantageous than branch banks” (16)
		Quality	“quality has increased / electronic channels are more quality based / they are indeed of good quality / provides good quality service to customers” (10)
		Time saving	“saves lot of time / time saving / saves time / yes these methods save enormous amount of time” (8)
		Fast	“very fast / yes electronic banking is fast / fast” (6)
		No fees	“charges no fee / no fee to the customer / fee is nil” (5)
2	Negative perceptions (109)	Convenient for banks	“no they are definitely convenient for banks / purely for banks convenience / more of convenience to banks” (62)
		Saves costs for banks	“saves huge costs for banks / reduces bank personnel and saves costs / no, they save lots of

Table 5.5: Conceptually-clustered Matrix Display: Are the Electronic Banking Methods Offered by Banks Oriented towards Customer’s Needs and Wants ^a

Number	Macro theme	Micro theme	Responses
			money for the banks” (23)
		Forced to do	“no, forced to do as all my colleagues use them / no, I am not technology savvy / forced to use” (15)
		Not much difference	“there is no much difference between these banking modes / not of much difference / difference is not evident / not quite different” (7)
		Still need to go to the bank	“whatever it is, still need to go to the bank for certain facilities / still need to visit bank” (2)
3	Dual perceptions (31)	Convenient to banks and customers	“convenient for both banks and customers / banks as well as customers benefit / convenient to both / very convenient for banks and customers” (21)
		Saves costs to banks and customers	“saves costs for both / massive cost savings for banks and customers / huge amount of cost saving for banks and customers” (8)
		Saves time to banks and customers	“time saving is evident for both banks and customers / saves time for both” (2)

^a Number of respondents mentioning a micro theme is provided in the parentheses categorised against a macro theme.

5.8.2 Analysis of ‘Macro’ and ‘Micro’ Themes

Table 5.6 displays three ‘macro’ themes that were identified, each comprising several more specific micro themes. The macro themes in order of prevalence identified with regard to analysis of ‘are the electronic banking methods offered by banks oriented towards customers’ needs and wants’ were positive perceptions, negative perceptions and dual perceptions. Counts for actual mention of a particular response were used to identify the content and the names of the micro themes. Prevalent micro themes in each macro thematic category were determined based on the number of counts of actual responses. The second and third columns of Table 5.6 enumerate the hierarchy of macro and micro thematic categories. The fourth and fifth columns of Table 5.6 display the response counts and percentages.

Table 5.6: Macro and Micro Theme Counts and Percentages: Are the Electronic Banking Methods Offered by Banks Oriented towards Customer’s Needs and Wants

Number	Macro theme	Micro theme	Count	Percentage
1	Positive perceptions		183	56.7^a
		Convenient	59	32.2 ^b
		Easy to use	32	17.5 ^b
		User friendly	23	12.6 ^b
		Compatible	20	10.9 ^b
		Advantageous	16	8.7 ^b
		Quality	10	5.5 ^b
		Time saving	8	4.4 ^b
		Fast	6	3.3 ^b
		No fees	5	2.7 ^b
Independence	4	2.2 ^b		
2	Negative perceptions		109	33.7^a
		Convenient for banks	62	56.9 ^b
		Saves costs for banks	23	21.1 ^b
		Forced to do	15	13.8 ^b
		Not much difference	7	6.4 ^b
Still need to go to the bank	2	1.8 ^b		
3	Dual perceptions		31	9.6^a
		Convenient to banks and customers	21	67.7 ^b
		Saves costs to banks and customers	8	25.8 ^b
		Saves time to banks and customers	2	6.5 ^b

^a Macro theme percentage is out of all responses

^b Micro theme percentages are out of all responses for their respective macro theme

The first macro thematic category ‘positive perceptions’ subsumed ten micro themes. Positive perceptions relate to the responses that support the notion that electronic banking methods offered by banks are oriented towards customer’s needs and wants. The

most prevalent micro themes, in descending order, were convenience, easy to use, user friendly, compatible, advantageous, quality, time saving, fast, less fees and independence. Actual responses refer to 'very convenient', 'extremely easy to use', 'more user friendly', 'compatible with my requirements', 'offers a number of advantages', 'excellent quality', 'saves lot of time', 'very fast', 'charges are relatively less', and 'can perform independently'.

'Yes, electronic banking methods are very convenient for customers' (*Respondent # 321*).

'Electronic banking is extremely easy to use by customers themselves' (*Respondent # 39*).

'Recent banking methods are more user friendly and I feel they are tailor made for customers' needs and wants' (*Respondent # 27*).

'They are suitable to the present lifestyle of the customers' (*Respondent # 101*).

'Electronic banking is highly compatible with customers needs' (*Respondent # 68*).

'Yes, they do offer many benefits to customers compared to conventional branch banking' (*Respondent # 46*).

'New banking methods do offer numerous advantages to the customers' (*Respondent # 3*).

'Online banking quality of service provided to customers is excellent' (*Respondent # 18*).

'Electronic banking offers good quality service to the customers' (*Respondent # 28*).

'As a customer using electronic banking methods I can save a lot of time' (*Respondent # 50*).

'Saves time for customers by reducing the waiting period' (*Respondent # 120*).

'They are really fast and as a customer need not wait for someone' (*Respondent # 17*).

'Banking now is really fast for customers like me' (*Respondent # 2*).

‘Fee charged is nil and they are for customers’ (*Respondent # 23*).

‘I can do all banking transactions by myself’ (*Respondent # 60*).

‘Customers now are more independent with their regular banking transactions’ (*Respondent # 227*).

The second macro thematic category ‘negative perceptions’ subsumed five micro themes. Negative perceptions refer to the responses that support the notion that electronic banking methods are more oriented towards the banks’ convenience rather than towards satisfying the customer’s needs and wants. The most prevalent micro themes identified, in descending order, were convenient for banks, saves costs for banks, forced to do, not much difference and still need to go to the bank. Actual responses relate to ‘more of convenience to the banks’, ‘saves lots of costs to the banks’, ‘forced to perform electronic transactions’, ‘there is no prominent difference between electronic methods’ and ‘still need to go to the banks for certain transactions’.

‘Electronic banking, internet banking or mobile banking they are all for bank’s convenience’ (*Respondent # 16*).

‘All new modes of banking are for the convenience of the banks’ (*Respondent # 106*).

‘Electronic banking saves lot of costs to the banks’ (*Respondent # 310*).

‘These new banking methods reduce recruiting banking staff and that’s how banks save lot of money’ (*Respondent # 25*).

‘I am not a technology savvy person, forced to use internet banking which is oriented more to the bank’s convenience’ (*Respondent # 98*).

‘There is not much difference between all electronic banking methods, I think merely the banks’ are playing on them to make huge profits’ (*Respondent # 44*).

‘Whatever the form of electronic banking is, still I need to go to the bank for taking a personal loan’ (*Respondent # 77*).

‘I do a lot of overseas transactions with regard to my business; I still need to go to the

bank for certain type of payments' (*Respondent # 93*).

The third macro thematic category 'dual perceptions' resulted in the emergence of three micro themes. Dual perceptions relate to the respondents notion that electronic banking methods are oriented towards catering to both banks and customer's needs and wants. The micro themes identified in order of prevalence, were convenient to banks and customers, save costs to banks and customers and saves time to banks and customers. Actual responses refer to 'convenient for both', 'convenient in many ways to banks and customers', 'saves money for banks as well as for customers', and 'saves time for both'.

'I think electronic banking is convenient to the banks as well as to the customers' (*Respondent # 300*).

'Both banks and customers are conveniently benefited from electronic banking' (*Respondent # 9*).

'Electronic banking saves money for banks and for customers' (*Respondent # 88*).

'Saves time for both' (*Respondent # 247*).

5.9 ANALYSIS OF RESPONSES TO OPEN-ENDED QUESTION 4: CONSUMERS' EXPERIENCES WITH INTERNET BANKING

From the effective sample size of 372 respondents, 315 provided valid responses for further analysis to the open-ended question 'consumers' responses with internet banking'. Out of these 315 responses, 212 were male respondents and 103 female respondents. Moreover, 183 respondents had higher level of education and 158 of the respondents were in managerial positions.

5.9.1 Content-Analytic Summary Table Displaying Consumers' Experiences with Internet Banking

Table 5.7 elaborates, in the second and third columns, the hierarchy of macro and micro thematic categories that emerged from the analysis of consumers' experiences with internet banking. The fourth column displays the actual responses and the number of times a certain response was mentioned by the respondents presented in the parentheses.

Table 5.7: Conceptually-clustered Matrix Display: Consumers’ Experiences with Internet Banking

Number	Macro theme	Micro theme	Responses
1	Positive experiences (146)	Benefits outweigh clearly	“benefits are many / benefits associated clearly outweigh all other things / very beneficial” (124)
		Change in the lifestyle	“there is a change in the lifestyle / compatible with the lifestyle / suitable to my lifestyle” (22)
2	Negative experiences (169)	Safety	“at times concerned about the safety / how safe is it in the long run? / worried about the security aspect / safety a big concern” (73)
		Fraud	“experienced online fraud in the past / scope occurs for online fraud / need to be cautious about issues related to online fraud” (47)
		Lack of personal help	“felt the need for lack of online personal help / personal help is essential sometimes” (23)
		Presence of fake websites	“ in the past experienced financial loss of small amount with a fake website / need to monitor for fake websites” (18)
		Hacking	“someone hacked into my account in the past / hacking might happen anytime” (8)

^a Number of respondents mentioning a micro theme is provided in the parentheses categorised against a macro theme.

Two macro thematic categories were identified such as ‘positive experiences’ and ‘negative experiences’ associated with consumers’ internet banking usage. Each of the macro theme identified was comprised of several more specific micro themes. Counts were used to identify the micro themes based on the actual mention of a particular response. Furthermore, prevalence was determined based on the number of counts of the actual responses.

5.9.2 Analysis of ‘Macro’ and ‘Micro’ Themes

Table 5.8 further provides the count and percentages of the macro and micro themes identified for the open-ended question ‘consumers’ experiences with internet

banking’. In the second and third columns, a hierarchy of macro and micro thematic categories is enumerated. The fourth and fifth columns display the response counts and percentages respectively.

Table 5.8: Macro and Micro Theme Counts and Percentages: Consumers’ Experiences with Internet Banking

Number	Macro theme	Micro theme	Count	Percentage
1	Positive experiences		146	46.3^a
		Benefits clearly outweigh	124	84.9 ^b
		Change in the lifestyle	22	15.1 ^b
2	Negative experiences		169	53.7^a
		Safety	73	43.2 ^b
		Fraud	47	27.8 ^b
		Lack of personal help	23	13.6 ^b
		Presence of fake websites	18	10.7 ^b
		Hacking	8	4.7 ^b

^a Macro theme percentage is out of all responses

^b Micro theme percentages are out of all responses for their respective macro theme

From the two macro thematic categories, several specific micro themes emerged. ‘Positive experiences’ macro thematic category subsumed two micro themes. Positive experiences relate to consumers’ positive experience with the use of internet banking. The most prevalent micro themes, in descending order, were benefits clearly outweigh and change in the lifestyle. Actual responses refer to ‘internet banking is very beneficial’, ‘benefits clearly outweigh all the other things’, ‘changed my lifestyle completely’ and ‘compatible with my lifestyle’.

‘I am happy with internet banking’ (*Respondent # 45*).

‘Internet banking is very beneficial’ (*Respondent # 101*).

‘Internet banking offering numerous benefits so far was so good for me’ (*Respondent # 19*).

‘It clearly outweighs all the other banking methods’ (*Respondent # 7*).

‘Internet banking completely changed my whole lifestyle’ (*Respondent # 60*).

‘It is indeed compatible with my lifestyle’ (*Respondent # 86*).

The second macro thematic category identified was ‘negative experiences’. Negative experiences refer to consumers’ negative experiences with the use of internet banking. This macro thematic category subsumed five micro themes. The most prevalent micro themes based on the counts of the actual responses in descending order relate to safety, fraud, lack of personal help, presence of fake websites and hacking. Actual responses relate to ‘concerned about safety’, ‘online fraud occurred in the past’, ‘felt the need for online personal help’, ‘financial loss due to fake websites’ and ‘threat of hacking’.

‘I wonder how safe they really are. I know a friend whose money was stolen through internet banking. When she reported it to the bank, they didn’t believe her and ended up accusing her of lying. They only believed when her balance completely reduced right in front of them while they were arguing’ (*Respondent # 306*).

‘Worried about safety while providing account details to a third party for making’ payment (*Respondent # 36*).

‘In the past online fraud resulted in a financial loss of small amount’ (*Respondent # 113*).

‘Getting hold of a concerned person was difficult when I overpaid to a company using internet banking in the past’ (*Respondent # 95*).

‘I lost some amount in the past to a fake website which looked exactly similar to that of my bank’ (*Respondent # 40*).

‘A hacker used my credit card details resulting in loss of money’ (*Respondent # 67*).

5.10 RELATING EXISTING INTERNET BANKING RESEARCH AND QUALITATIVE FINDINGS

5.10.1 Findings from ‘Internet Banking Non-users’

These findings from the qualitative data analysis partly point to similar conceptualisations as those proposed in various theories of internet banking research

described in Chapter Two. Tables 5.1 and 5.2 illustrate the underlying reasons provided by the internet banking non-users for their non-adoption of internet banking. The resulting twelve macro thematic categories that emerged by analysis of the abovementioned open-ended question highlight the importance that consumers assert to three macro thematic categories of 'security', 'trust' and 'risk'. Within these macro themes, micro themes of importance are 'confidentiality', 'lack of trust in the channel' and 'financial risk'. Similar concerns were exhibited by non-adopters of internet banking in the existing literature (Gerrard *et al.* 2006; Pavlou 2003). The fourth macro thematic category, 'value', clearly delineates between the two micro themes costs and benefits. Apart from the abovementioned, other macro thematic categories relating to internet banking non-users' preference for other channels, lack of auxiliary resources and their routine nature also seem to influence their decision towards non-adoption of internet banking (Kuisma *et al.* 2007; Gerrard *et al.* 2006). New emergent macro themes from the responses of internet banking non-users relate to internet banking transactions performance by a spouse and past users. Moreover, several micro themes can be interpreted as reflecting components of existing theories associated with internet banking research. Micro themes such as 'confidentiality', 'authorisation', 'privacy', 'psychological risk', 'physical risk', 'financial risk', 'lack of trust in the channel', 'lack of trust in the internet', and 'lack of personal help' are associated with channel-related factors of security, risk, trust and interactivity are similar to the concerns of internet banking non-users in terms of innovation resistance theory (Arnould *et al.* 2004). 'Past users' and 'performed by spouse' are the new macro thematic categories that arose from this study with specific micro themes explaining the importance of each emerged thematic categories on the basis of frequency counts.

5.10.2 Findings from 'Internet Banking Users'

Qualitative findings obtained from internet banking users for the remaining three open-ended questions related to the circumstances under which they prefer to use other banking methods, their perceptions towards electronic banking methods, and their experiences with the use of internet banking. Most internet banking users believed the benefits of internet banking outweighed other modes of banking and the several micro thematic categories that emerged are related to technology acceptance and diffusion of innovation theories (Lee & Lee 2001; Polatoglu & Ekin 2001). Emergent micro themes

such as ‘convenient’, ‘easy to use’, ‘fast’, ‘compatible’, ‘user friendly’, ‘time saving’ and ‘advantageous’ reflect and relate to existing literature (Ismail & Panni 2009; Karjaluoto *et al.* 2002; Thornton & White 2001). Other micro thematic categories related to the possible negative consequences of internet banking that often concern internet banking users point to the facets of ‘safety’, ‘fraud’, ‘hacking’, ‘fake websites’ and ‘financial losses’ (Kuisma *et al.* 2007). Though several thematic categories which emerged from the qualitative results obtained from internet banking users relate to the different theoretical models on the technology acceptance, the open-ended questions asked to internet banking users were exploratory in nature. Information on these questions was limited in the existing literature. Circumstances under which internet banking users use other ways to conduct their banking transactions resulted in five macro themes. These themes clearly indicate the situation specificity that prompts internet banking users to use alternate service delivery channels. Positive, negative and dual perceptions as macro thematic categories emerged from the question ‘are the electronic banking methods offered by banks oriented towards customers needs and wants?’ could be further studied by researchers from customer and bank orientations in order to understand the perceptions of the electronic banking methods from the customer as well as the bank’s point of view. Similarly, consumers’ experiences with internet banking resulted in a dichotomous response consisting of positive and negative experiences. These experiences could further be related to value and safety components of internet banking research.

5.11 RELATING QUANTITATIVE AND QUALITATIVE DATA FINDINGS

As discussed in Chapter Four, hierarchical multiple regression and hierarchical logistic regression analyses were performed to assess the unique contribution of each set of independent variables to the predictions of consumers’ continued and frequent use of internet banking. The value factors uniquely accounted for a significant proportion of the variance in the prediction of consumers’ usage of internet banking continuously and frequently. Those conclusions are supported by the findings from the qualitative data analysis that internet banking users experiences are also positively associated with the value components. These value components relate to the micro thematic category of ‘benefits clearly outweigh other measures’. Moreover, internet banking non-users outweighed costs more to the benefits resulting in their non-adoption, which significantly determines their value perceptions.

Also, the quantitative analysis indicates the relative influence of channel and technology factors in predicting consumers' continued and frequent use of internet banking by employing hierarchical multiple regression and hierarchical logistic regression analyses. Those conclusions are supported by the qualitative data analysis which shows that the majority of internet banking users perceive internet banking as 'convenient', 'easy to use', 'advantageous', 'fast', 'compatible' and 'good quality' method of banking. Some of the users discussed negative experiences they had in the past in relation to the use of internet banking as 'safety', 'online fraud', 'threat of hacking' and 'presence of fake websites'. Moreover, non-users indicated security, trust and risk associated with the internet banking channel as major concerns impeding them from adoption of internet banking.

The quantitative data analysis did not show any significant influence of either social factors or demographic characteristics in the prediction of consumers' continued and frequent use of internet banking. These findings are partly supported by findings from the qualitative data analyses. However, social factors did influence the adoption and use of internet banking of consumers with an Asian ethnicity; an influence that could be explored further in future studies.

5.12 THEORETICAL CONTRIBUTION FROM QUALITATIVE DATA ANALYSIS

The findings obtained from the qualitative data analysis confirm certain thematic categories from the existing literature related to internet banking research apart from the emergence of new themes. In theoretical terms, these findings attribute to internet banking non-user responses specific to the Australian context, as well as to the perceptions and experiences of the internet banking users. Certain macro themes identified from the internet banking non-users' responses relate to the existing innovation resistance studies. However, the thematic categories identified in the present research were specific to the Australian context and determine the most important themes to be considered by retail banking management based on the respondent's frequency counts and percentages attributed to each theme. Moreover, qualitative responses obtained for each thematic category also specified specific components included in each theme. A closer comparison of the emerged themes with the demographic data indicate that there were a higher number of female internet banking non-users compared to males. Emerged

macro themes of importance that were not associated with the existing literature point to internet banking performed by spouse and past users. The response ‘performed by spouse’ was indicated only by the female respondents, incorporating micro themes such as tradition, usage and lack of knowledge. Past users attributed their current non-usage of internet banking to various monetary and non-monetary losses experienced by them earlier. The existing literature emphasises the components of trust in an online environment as an outcome of consumers’ perceptions of trust in the channel and trust in the internet. The qualitative data findings reported the importance of trust in the bank and the bank personnel. Social influence emerged as a macro theme related to themes such as influence of friends, colleagues and family members on the respondent’s decision to use internet banking. A closer comparison with the demographic data reveals that most of the respondents who attributed their non-adoption to social influence were from Asian ethnic origins. Non-users perceived cost of auxiliary facilities as expensive, which reduces their value towards internet banking, indicating the importance of the customer perceived value construct.

The open-ended question responses obtained from internet banking users were mostly exploratory in nature. Lack of certain facilities such as cash withdrawals, money orders and depositing cheques often encourage internet banking users to access mostly branch banking. Lack of internet access motivates internet banking users to utilise ATM facilities. Respondents clearly indicated the use of telephone banking as an alternative to internet banking due to its ease of use. Users prefer to go to the bank and contact the bank personnel when they are dealing with major investments and loans, when problems arise and when they require more information regarding new banking products and services. The majority of the respondents elicited the benefits associated with the electronic banking methods and their orientation towards satisfying customers needs and wants. Emerged themes of importance associated with the negative perceptions of electronic banking methods relate to the users’ perceptions that they are forced to perform electronic banking, still need to visit bank branch for accessing many banking facilities and not much difference between different electronic banking methods. Finally, users indicated that benefits clearly outweigh all the other dimensions of internet banking, thus referring to the value component they associate to the internet banking service delivery channel. Also, users are more concerned with safety issues when it comes to their past experiences with banking transactions.

5.13 DISCUSSION OF THE FINDINGS FROM THE QUALITATIVE DATA ANALYSIS

The main findings of the qualitative data analysis relate to the users and non-users of internet banking that are important to the Australian retail banking context are discussed in this section in detail. Based on the thematic matrix display tables and content-analytic tables that were developed from the responses obtained from the respondents, the reasons for the non-adoption of internet banking from the non-users of internet banking and the circumstances, perceptions and experiences of the internet banking users were identified. Specific macro and micro themes were identified based on the counts and percentages of the actual responses obtained from the respondents, thus determining the hierarchical prevalence of each identified thematic category. The macro thematic categories identified in a hierarchical importance based on the respondents actual response counts and percentages were ‘security’, ‘trust’, ‘risk’, ‘value’, ‘lack of resources’, ‘social influence’, ‘technology apprehension’, ‘interactivity’, ‘preference to other channels’, ‘routine’, ‘past users’ and ‘performed by spouse’. Each of the macro thematic categories identified consisted of several micro themes and were presented in hierarchical prevalence based on the actual responses obtained from the respondents. A majority of the non-users of internet banking elicited ‘security’ associated with the internet banking service delivery channel as the major concern which hinders them from performing internet banking transactions. ‘Loss of confidential information’, ‘loss of private information’, ‘fear of authorisation to the respondent’s account in the occurrence of any fraud’ and ‘availability of the personal information to the third party’ were the micro themes that emerged from the macro thematic category of ‘security’. Therefore it is imperative that retail banks ensure consumers that their personal information is confidential and well protected. Also, banks need to comfort consumers that under any circumstances their personal information will not be disclosed to third parties. Moreover, retail banks may need to develop and provide online live help in case of occurrence of any mistakes or fraud to the consumer’s banking transactions.

The second macro thematic category, ‘trust’, consisted of micro themes such as ‘lack of trust in the channel’, ‘lack of trust in the internet’, ‘lack of trust in the bank’ and ‘lack of trust in bank personnel’ in order of importance. Provision of information frequently to the consumers by the retail banks with regard to the safety mechanisms and devices followed and implemented by the bank management to ensure consumers’ online

transactions to be safe and secure may enhance consumers trust in the electronic channels. Retail banks need to have a continuous rapport with the internet service providers and ensure that appropriate measures will be taken to prevent the appearance of fake websites. By implementing appropriate customer relationship strategies involving constant feedback from the customers regarding banks products and services, updating information frequently with regard to the new banking products and services, provision of personal help as and when required by the consumers and, time to time, feedback on the bank personnel will increase consumers' trust in the bank as well as in the bank personnel.

The third macro thematic category 'risk' consisted of several micro themes of 'financial risk', 'psychological risk', 'physical risk', 'social risk' and 'time risk' in order of hierarchical importance. Bank management need to ensure that financial risk associated with the internet banking transactions, if any, will be rectified promptly and provide accurate details of the bank personnel that need to be contacted in an emergency. By conducting training sessions and workshops banks may increase consumers' skills and thus increase their efficacy, and the resulting ease of using the internet banking service delivery channel will reduce the physical and time risk. Provision of information to consumers from time to time that internet banking is safe and secure, information regarding various protection mechanisms and provision of live help online on the bank's website 24 hours a day will significantly decrease the psychological and social risk.

The fourth macro thematic category, 'value', was comprised of 'costs' and 'lack of benefits' micro themes in that order of importance. Bank management, in conjunction with the internet service providers, need to provide various plans taking into consideration the different segments of the consumers. Further, bank management needs to provide benefits to the consumers for performing internet based transactions in the form of cash incentives, reward points, discounts and coupons which will enhance consumers' overall value perceptions on internet banking. The fifth macro thematic category, 'lack of resources', consisted of micro themes 'affordability' and 'accessibility'. Retail banks, like ATMs, may need to provide 'internet kiosks' at public places with sufficient internet speed and this will significantly increase the consumer's levels of affordability and accessibility to perform internet-based banking transactions.

The sixth macro thematic category, 'social influence', related to the micro themes 'friends', 'colleagues' and 'family' in that hierarchical order of importance in hindering

adoption of internet banking by the non-users. Retail bank management needs to offer benefits involving discounts of the internet or electricity bill of the consumers if they introduce their friend, colleague or family member to internet banking transactions. Also, banks need to be aware that positive word-of-mouth communication is critical in attracting more consumers towards the internet banking channel for conducting banking transactions. The seventh macro thematic category, 'technology apprehension', was comprised of 'self-efficacy', 'safety' and 'discomfort' micro themes in hierarchical prevalence. Bank management should ensure utmost care in designing the training programs. The skills of the consumers' in operating the internet, accessing the computer and performing banking transactions over the internet need to be assessed. Training programs need to be designed and implemented that suit various consumers depending on their technology-based skills.

The eighth macro thematic category, 'interactivity', related to the micro themes 'uniqueness' and 'communications' in that order of importance. Retail banks need to ensure that conducting internet-based transactions does not necessarily prevent consumers from obtaining promotional offers from the bank, if any. Moreover, bank professionals need to constantly ensure that online consumers are unique and promotional offers are tailor-made for them. The ninth macro thematic category, 'preference to other channels', consisted of micro themes 'convenience', 'ease of use' and 'lack of feedback' in order of hierarchical importance. Retail banking marketing and management professionals need to design and implement internet kiosks with feedback control options which increase consumers' convenience and ease of using internet banking transactions. The tenth macro thematic category, 'routine', was comprised of 'reluctance' and 'regularity' micro themes in hierarchical order. Frequent advertising by the banks in different media about the convenience, ease of use, comfort and the promotional offers associated with internet banking will possibly influence consumers to deviate from their routinised behaviour. The eleventh macro theme 'past users' consisted of 'non-monetary loss' and 'monetary loss' micro themes in that specified order. Retail bank management needs to ensure that the bank websites are user-friendly. If required, provision of voice prompts and online live help will decrease the non-monetary losses experienced by the consumers. Monetary losses, if any, need to be dealt with by the banks, thus providing continuous support to the consumers. The twelfth macro theme, 'performed by spouse', emerged, consisting of the micro themes 'tradition', 'usage' and 'knowledge' in that hierarchical order. These

responses were from females and banks need to design strategies that suit this particular segment. Attending training sessions organised by the banks to enhance their skill levels, and offering cash back or gender oriented incentives will attract this segment to perform internet-based transactions.

Thus the various themes that emerged as reasons for not using internet banking from non-users in the Australian context consisted of technology, channel, social and value-related factors, indicating the importance of these factors in influencing consumer's usage patterns of internet banking. Implementation of the appropriate measures as discussed above will motivate non-users of internet banking and will draw a significant proportion of the non-users to use internet-based transactions.

The responses obtained from the internet banking users in explaining the circumstances under which they prefer to use other banking channels to conduct their banking transactions resulted in five macro thematic categories. The first macro theme, 'unable to perform over the internet', was comprised of micro themes in order of importance: 'cash withdrawals', 'deposit cheques', 'overseas transactions' and 'money orders'. Retail bank management, in future, can look at designing and implementing electronic cash withdrawals. Measures to devise and implement digital cheque deposits and digital money orders may be considered in future. Techniques to perform overseas transactions conducted over the internet may be improved over the existing ones. The second macro theme, 'lack of internet access', consisted of the micro themes 'travel', 'server site problems', 'internet speed is slow' and 'failure in the power' in hierarchical prevalence. Availability of internet kiosks will solve the problem of accessing internet based transactions in situations involving travel. Banks, in conjunction with the internet service provider, can effectively reduce the problems associated with the server site and internet speed. In the case of situations involving power failure, effective measures need to be implemented by the banks in efficient data retrieval and data storage.

The third macro theme, 'not sure of something', consisted of 'introduction of new products and services', 'dealing with major loans' and 'change in website functions' micro themes in that specified order. Retail bank management needs to take care that the bank websites are user-friendly and innovative products and services, when introduced, need to be explained in detail to the consumers well before their launch. The content provided online needs to be informative with relevant information. While accessing the

major loans, live online support by bank personnel may be provided to the consumers. Any changes in website functions need to be notified to the consumers well in advance by the banks, with a highlighting of the differences and similarities with regard to the changes being implemented. The aforementioned drastically increases the consumer's ability to access the new websites. The fourth macro theme 'problem rectification' included the micro themes 'regular transactions' and 'rare transactions' in hierarchical order. Bank management professionals need to provide consistent help over the bank's website with information related to the measures to be undertaken in problem rectification. The content provided needs to be informative with clear objectives and measures that will be taken by the banks in addressing the problems faced by the consumers, if any, in performing their regular and rare transactions. The fifth macro theme, 'proximity to auxiliary facilities', consisted of the micro themes 'computer location' and 'type of internet connection' in that order of importance. Offering attractive incentives to the consumers with their internet banking transactions compared to their use of other banking service delivery channels by banks and the strategies associated with the internet service provider will overcome the difficulties associated with the situation specific themes, including location of the computer and the type of internet connection. From the discussion so far, it is evident that circumstances under which internet banking users use other ways to conduct their banking transactions were highly situation specific in nature.

The qualitative data analysis resulted in the emergence of three macro thematic categories in explaining consumers' perceptions towards electronic banking methods and their orientation towards consumers' needs and wants. The first macro theme, 'positive perceptions', consisted of the micro themes 'convenient', 'easy to use', 'user friendly', 'compatible', 'advantageous', 'quality', 'time saving', 'fast', 'no fee' and 'independence' in that order of hierarchical importance. Thus positive perceptions related to the benefits associated with the use of internet banking to consumers. The second macro theme, 'negative perceptions', consisted of the micro themes 'convenient for banks', 'saves costs for banks', 'forced to do', 'not much difference' and 'still need to go to the bank' in that specified order. The third macro theme, 'dual perceptions', related to the micro themes 'convenient to banks and customers', 'saves costs to banks and customers' and 'saves time to banks and customers'. Banks need to enhance the positive and dual perceptions of

the consumers towards electronic banking methods and try to minimise their negative perceptions.

Qualitative data analysis resulted in the emergence of two macro thematic categories in explaining consumers' experiences with internet banking. The first macro theme, 'positive experiences', consisted of the micro themes 'benefits outweigh clearly' and 'change in the lifestyle' in hierarchical order of importance. The second macro theme, 'negative perceptions', was comprised of the micro themes 'safety', 'fraud', 'lack of personal help', 'presence of fake websites' and 'hacking' in that specified order. Retail bank management needs to continuously strive to improve the consumer's positive experiences in using internet banking and minimise effectively their negative experiences. Positive experiences may be enhanced by provision of better internet banking services, increased quality, improved benefits associated with the use of internet-based transactions and provision of online help whenever required to the consumers. Negative experiences of the consumers in using internet banking may be avoided or minimised by provision of better internet channel formulation and management strategies, provision of details of the bank online personnel to be contacted when required and provision of clear online content to the consumers in dealing and rectifying the internet banking-based problem situations.

5.14 SUMMARY

This chapter discussed the results obtained from the qualitative analysis of four open-ended questions. Thematic matrix displays were employed in the process of qualitative data analysis. Each open-ended question was categorised accordingly to several specific macro and micro themes. The themes identified were further supported by quantitative frequency counts and percentage summaries to reflect key themes of importance. Actual responses reflecting the prevalence of each category were provided. Thus, generated macro and micro themes were examined for similarities and differences using certain demographic characteristics wherever relevant. Later, the outcomes of the qualitative data analysis were linked to the existing literature. The theoretical contributions of the findings obtained from the qualitative data analysis were also discussed briefly. Furthermore, the findings obtained from the qualitative data analysis were compared with selected findings from the quantitative data analysis reported in Chapter Four. As the findings were obtained from both quantitative and qualitative data

analyses, in the next chapter conclusions, research implications, research limitations and directions for future research will be discussed in detail.

CHAPTER 6: CONCLUSIONS AND IMPLICATIONS

6.1 INTRODUCTION

This chapter provides a review of the research hypotheses explored in the thesis and discusses conclusions derived from the quantitative and qualitative analyses in comparison with previous research conducted on internet banking. Implications for theory, methodology and managerial practice are then discussed from the research findings. Limitations associated with the current research are presented and propositions are finally elicited with regard to future research directions. The overall research question of the thesis was to investigate the potential factors influencing consumers' use patterns of internet banking in the Australian context on a continued and frequent basis. This question was examined through a research model proposed in Chapter Two and the following research hypotheses.

- H_{1A}: Identified technology factors will significantly predict continued use of internet banking over and above the influence of the demographic control variables.
- H_{1B}: Identified technology factors will significantly predict frequent use of internet banking over and above the influence of the demographic control variables.
- H_{2A}: Identified channel factors will significantly predict continued use of internet banking over and above the influence of the demographic control variables and technology factors.
- H_{2B}: Identified channel factors will significantly predict frequent use of internet banking over and above the influence of the demographic control variables and technology factors.
- H_{3A}: Identified social factors will significantly predict continued use of internet banking over and above the influence of the demographic control variables, technology and channel factors.
- H_{3B}: Identified social factors will significantly predict frequent use of internet banking over and above the influence of the demographic control variables, technology and channel factors.
- H_{4A}: Identified value for money factors will significantly predict continued use of internet banking over and above the influence of the demographic control variables, technology, channel and social factors.
- H_{4B}: Identified value for money factors will significantly predict frequent use of internet banking over and above the influence of the demographic control variables, technology, channel and social factors.

The conceptual framework presented in Chapter Two linked consumers' continued and frequent use of internet banking directly to several factors such as technology, channel, social and value for money, thus controlling for the demographic characteristics. The present research was unique in several ways. It was one of the recent studies which focuses on consumers' continued and frequent use of internet banking rather than on consumers' adoption or non-adoption of internet banking. Also, the study integrates theoretical models of

the technology acceptance and diffusion of innovations theory into its research design. Furthermore, methodologically the study was different as it uses a combination of quantitative and qualitative approaches. The overall approach of the thesis responds to the call within the literature review for identifying antecedents to consumers' continued and frequent use of internet banking. The results of the empirical study provided support for most of the research hypotheses advanced by the conceptual model. Hierarchical multiple regression and hierarchical logistic regression analyses indicated the significant role played by technology, channel and value for money factors in the prediction of consumers' continued and frequent use of internet banking. The qualitative data analysis was summarised using thematic matrix displays and explored several macro themes that actually hinder consumers' adoption of internet banking: 'security', 'trust', 'risk', 'value', 'lack of resources', 'social influence', 'technology apprehension', 'interactivity', 'preference to other channels', 'routine', 'past users' and 'performed by spouse'. Furthermore, thematic matrix displays also identified important macro themes for internet banking users with regard to the circumstances of using other service delivery channels: 'unable to perform over the internet', 'lack of internet access', 'not sure of something', 'problem rectification', 'proximity to auxiliary facilities' and 'type of internet connection'. Perceptions regarding electronic banking channels consisted of 'positive perceptions', 'negative perceptions' and 'dual perceptions' and, finally, experiences associated with internet banking use resulted in 'positive experiences' and 'negative experiences'. Each of the macro themes identified subsumed several micro themes that were presented in a hierarchical order based on the actual responses and the number of times a certain response was mentioned by the respondents.

6.2 MAJOR CONCLUSIONS

6.2.1 Dimensionality Associated with Quantitative Scales

Factor analysis was used for data reduction and data summarisation of technology, channel, social, value for money and continued usage factors. Exploratory factor analysis yielded a two factor solution for the technology factors which initially encompassed five sub-dimensions of relative advantage, compatibility, complexity, trialability and result demonstrability that related to the consumer's acceptance of technology and consumers' adoption of internet banking studies (Hernandez & Mazzon 2007; Chan & Lu 2004; Tan & Teo 2000). The two emerged components identified were 'perceived usability' and

‘perceived trialability’. The perceived usability component consisted of dimensions relating to the ease of using, convenient nature, speed of using, compatibility with lifestyle and communicating the advantages of internet banking to others. This implies that the more the consumers perceive the internet banking service delivery channel as being useful, the more they use it on a continued and frequent basis to perform their banking transactions. The perceived trialability component consisted of dimensions related to consumers’ attraction towards the trial option associated with internet banking performance and any newly added features. Thus, the more the consumers perceive internet banking as trialable, the more they use this service delivery channel on a continued and frequent basis to perform their banking transactions. Consumers’ perceptions related to the perceived usability and perceived trialability features were identified as influencing their internet banking adoption in the existing research (Ndubisi & Sinti 2006). However, even long after consumers’ adoption of internet banking, perceived usability and perceived trialability components in the present research were found to significantly influence consumers’ continued and frequent use of internet banking.

The result of exploratory factor analysis on channel factors, initially consisting of four sub-dimensions of perceived self-efficacy, perceived risk, perceived trust and perceived personalisation, yielded a two factor solution. The role of the various sub-dimensions related to consumers’ channel perception regarding their efficacy of using an internet channel, risk relating to internet-based transactions, trust in the internet channel and in the general use of the internet, and the extent of personalisation of the internet-based channel were partially examined in the existing internet banking adoption research (Ratten & Ratten 2007; Littler & Melanthiou 2006; Yousafzai *et al.* 2005; Pincus 2004). The two emerged components identified were ‘perceived safety’ and ‘perceived specialty’. The perceived safety component consisted of dimensions related to risk associated with the internet based channels, consumers’ perceptions of trust towards the internet banking channel, security-related issues associated with internet banking transactions and the necessary skills of the consumer to perform internet banking independently. These findings partly aligned with the existing literature that showed consumers’ perceptions regarding internet banking service delivery channel as safe and secure to perform their banking transactions received considerable attention in the existing literature pertaining to internet banking adoption as well as non-adoption research (Maijala 2004). Thus the more the consumers perceive that internet banking is safe and secure, the more they perform internet banking transactions continuously

and frequently. The perceived specialty component consisted of dimensions related to personalisation measure and presence of others to help navigate through internet-based transactions. Perceived specialty received little attention in prior studies related to internet banking acceptance and adoption (Pincus 2004). Consumers' perceptions that internet banking is special encourage them to use internet banking transactions on a continued basis. However, the perceived specialty component was not related significantly to consumers' frequent use of internet banking, which is not a surprise. This indicates that the more frequently consumers use internet banking, the less they consider internet-based banking transactions as special and unique.

Social factors consisting of the subjective norm and interpersonal influence yielded a single factor solution. Thus the single factor of social influence consisted of dimensions related to influence exerted by friends, colleagues and family members to uptake internet banking. Social influence construct as a single factor has been used by several researchers in the existing research related to the adoption of internet banking, technology acceptance by consumers and online shopping contexts (Ravi *et al.* 2007; Tan & Teo 2000; Venkatesh & Davis 2000). In this study, social factors were not related to either consumers' continued or consumers' frequent use of internet banking. This implies that monetary-based transactions associated with the internet-based channels and the general banking behaviour itself involving various levels of money based transactions tend to be private, personal and confidential to an individual. Thus individuals do not discuss their banking patterns in social channels as long as there does not occur any issues related to fraud.

Value for money factors identified as a trade-off between consumers' perceptions related to perceived benefits and perceived costs also yielded a single factor solution (Petrick 2002). Thus the value for money factor consisted of dimensions related to consumers' perceptions towards economic value associated with the internet banking service delivery channel encompassing costs and benefits. The value for money factors were found to be significantly associated with consumers' continued and frequent use of internet banking. Thus the more the consumers perceive internet banking as a value-based offering compared to other service delivery channels, the more they tend to perform internet banking transactions on a continued and frequent basis. The continued usage factors resulted in a single factor solution consisting of positive experiences of the consumers with the use of

internet banking, their intention to use internet banking on a regular basis and consumers' intention to increase the use of internet banking in future.

In order to validate reliability of the instrument, ensure measurement accuracy and check the internal consistency of each multi-item perceptual measure, Cronbach's alpha values were calculated (Straub *et al.* 1995). Thus, the present research used the acceptable levels of coefficient alphas as criteria for entering the abovementioned factors into the subsequent analysis.

6.2.2 Conclusions from Research Hypotheses

6.2.2.1 Effects of Demographic Characteristics

Demographic data of gender, age, level of education, level of income, ethnicity and occupation were obtained from the internet banking users and non-users. Preliminary examination of the demographic data by obtaining frequency distributions revealed that there were more males using internet banking than females, and more female non-users than male non-users. Irrespective of their internet banking usage, a majority of the respondents were within the age range of 31-40 years. Internet banking users had higher levels of education than non-users of internet banking. A majority of the non-users of internet banking had higher levels of vocational education than the users. A majority of the respondents had a more than \$35 001 level of income. Respondents who provided valid responses to the questionnaire were mostly self-identified as either Anglo Australians or of Asian ethnicity. A majority of the respondents were in managerial and administrative positions. A full demographic profile of the respondents is displayed in Chapter Four.

The impact of various demographic characteristics on consumers' adoption of internet banking and other criterion variables has been discussed in previous research (Gan *et al.* 2006; Howcroft *et al.* 2002; Jayawardhena & Foley 2000). Due to the possibility that demographic characteristics might confound or have spurious effects on the relationship between various criterion and predictor variables in data analysis, they were controlled for at the outset of the analysis. Consequently, the entry order for the hierarchical multiple regression and hierarchical logistic regression analyses were used to control for potential demographic effects by introducing the set of demographic variables at the first step of the regression analysis.

The demographic characteristics significantly were not related to consumers' continued usage of internet banking. However, a significant positive influence was found between the demographic characteristics consisting of the sub-components of level of education and level of income to consumers' frequent use of internet banking. These results mean that as a consumer's level of education and level of income increases their confidence and skills in using online transactions increases, subsequently leading to an increase in their frequent use. The same trend was revealed in existing research on consumers' intention to adopt and adoption of internet banking (Howcroft *et al.* 2002; Jayawardhena & Foley 2000).

6.2.2.2 Effects of Technology Factors

Research hypothesis one stated that, after controlling for relevant demographic influences, technology factors would be predictive of consumers' continued and frequent use of internet banking. Thus, it had been expected that the emerged components 'perceived usability' and 'perceived trialability' of the technology factors would enhance consumers' usage of internet banking on a continued and frequent basis. Measures related to usability and trialability were found to be important in the existing research related to consumers' intention to adopt and adoption of internet banking (Ndubisi & Sinti 2006; Tan & Teo 2000). Thus the influence of perceived usability and perceived trialability components on consumers' pre-adoption and adoption behaviour in the existing literature on internet banking research had been confirmed (Tan & Teo 2000). However, the impact of perceived usability and perceived trialability components on consumers' continued and frequent use of internet banking related to their post-adoption behaviour had not been confirmed in the existing literature. Results from this study thus confirm the positive and significant relationship between perceived usability and perceived trialability components and consumers' continued and frequent use of internet banking.

These results show that consumers often tend to evaluate various advantageous aspects of the different service delivery channels at the pre-purchase and purchase stages of their decision making process for internet banking products. The perceived usability and perceived trialability components of the technology-related factors still influence consumers' decisions long after the initial adoption of internet banking. As consumers become comfortable with the use of the technology-enabled service delivery channels in the post-purchase decision-making process, consumers become more oriented towards the usability nature of a specific channel and therefore continue to use it on a frequent basis. Perceived

trialability could be related to the consumer's underlying fear of making mistakes in processing their financial transactions. Thus, consumers in an online environment tend to use the trialability feature to test whether transactions can be conducted safely and securely. Thus it is evident that highly experienced internet banking service delivery channel users still desire more useful alternatives.

6.2.2.3 Effects of Channel Factors

Research hypothesis two stated that, after controlling for the potential confounding and spurious effects of the demographic characteristics, channel factors significantly influence consumers' continued and frequent use of internet banking. Thus, it had been expected that the emerged components 'perceived safety' and 'perceived specialty' of the channel factors would enhance consumers' usage of internet banking on a continued and frequent basis. The first component of research hypothesis two and its sub-components were supported, as perceived safety and perceived specialty exhibited a significant impact on consumers' continued usage of internet banking. These results showed that the more consumers perceive their internet banking service channel as safe to perform their banking transactions, the more they use it on a continued basis. A further finding was that the more consumers perceive that they were treated uniquely whilst making their online banking transactions, the more they tend to use internet banking on a continued basis. The perceived specialty aspects shed new light on the emerging research regarding consumers' usage of internet banking as existing research on this dimension is scarce.

The second component of the research hypothesis and its sub-components was partially supported. Consumers' perceived safety component significantly influenced their frequent use of internet banking; however, perceived specialty had no significant impact on consumers' frequent use of internet banking. The more consumers' perceived internet banking as safe in their post-purchase stage, the more frequently they used the channel for their banking transactions. As the consumers' continued use of internet banking increases, promotional offers may not seem appealing to them and may not influence their decision to use internet banking on a frequent basis. Thus banks offering internet-based transactions are expected to act with high business standards and to have the skills and expertise to offer their transaction-based services to customers in an effective manner.

6.2.2.4 Effects of Social Factors

Research hypothesis three states that social factors significantly influence a consumer's decision to use internet banking on a continued and frequent basis over and above the demographic characteristics set, technology and channel factors. Both components associated with research hypothesis three indicate the absence of a significant relationship between social factors and consumers' continued and frequent use of internet banking. Existing research on consumers' adoption of internet banking provided inconclusive results in identifying the impact of social influence. As a result, to date, the influence of social factors on internet banking adoption still provides challenges for the internet banking researchers. It had been expected that the more the influence of the salient referent groups such as friends, colleagues and family to the consumer, the more would be the usage of internet banking by the consumer on a continued and frequent basis.

It was assumed that general banking transactions may have been seen to be too private and confidential an activity for respondents to discuss in surveys. Therefore, consumers may not be interested in discussing their banking transactions with others within their social and family groups, thus reducing their potential influence on the usage of internet banking. Maybe the referent group influence could be contended to apply to pre-purchase and purchase stages of the consumer decision-making process, during which, due to the general apprehension associated with a service innovation, consumers tend to discuss the behaviour under question with salient referent groups. During the post-purchase stage, the influence of the referent groups might drastically reduce as consumers become more accustomed to the use of internet-based transactions. Further, as consumers use internet banking in the post-purchase stage more continuously and frequently, their familiarity with the service delivery channel and presence of the trialability option encourages them to use and try on their own, rather than involving social channels.

6.2.2.5 Effects of Value for money Factors

Research hypothesis four consisted of two components. Firstly, it stated that value for money factors significantly influence consumers' continued use of internet banking. Secondly, it stated that value factors significantly influence consumers' frequent use of internet banking, after controlling for the demographic characteristics. Also it had been hypothesised that the significant predictive power of consumers' continued and frequent use of internet banking by value for money factors will be over and above the demographic

characteristics set, technology, channel and social factors. The hypothesis was satisfied due to the fact that a significant relationship between the value for money factors and consumers' continued and frequent use of internet banking was confirmed.

It was expected that the more consumers perceive the value components associated with the use of internet banking service delivery channel, the more they use it on a continued and frequent basis. The results showed that consumers clearly weigh up the benefits and costs associated with various banking service delivery channels and tend to use the most profitable one. The above discussion was consistent with similar prior existing studies relating to the value perceptions of the consumers and their subsequent online store choice (Petrick 2002). Understanding value perceptions from the customer perspective is relevant for managing and supporting both the bank's and the customer's value creation processes. Further, understanding the dimensions of the value for money factors in this study complements previous theories on customer perceived value and helps in conceptualisation of the value specific to the electronic services. Financial entities should provide service offers that generate value to their customers in a sustained way, in order to attain a competitive advantage and maintain it over time. Thus, bank management, marketers and service providers should increasingly look at the possibilities of providing business customer value and enhance their profitability.

6.2.2.6 Implications of the Qualitative Findings

Chapter Five described the analysis undertaken for four open-ended questions in order to identify factors hindering internet banking adoption from non-users, circumstances under which users preferred to use other banking channels, users' perceptions regarding electronic banking methods and their experiences with the use of internet banking. Several major substantive findings emerged from the qualitative data analysis. The findings obtained from the qualitative data analysis of the open-ended question seeking responses from internet banking non-users in identifying reasons for their non-adoption resulted in twelve macro thematic categories of 'security', 'trust', 'risk', 'value', 'lack of resources', 'social influence', 'technology apprehension', 'interactivity', 'preference to other channels', 'routine', 'past users' and 'performed by spouse'. These macro themes revealed several micro themes based on the frequency counts and percentages. Thus the 'security' thematic category encompassed confidentiality, privacy, authorisation and availability as the relevant micro themes. Therefore, lack of security in the internet banking service delivery channel inhibits

consumers from their actual adoption based on their perceptions that use of internet banking may lead to loss of confidential and personal information to third parties and consumers' inability to contact and/or communicate with the bank personnel in case of any fraud occurrence. The 'trust' thematic category revealed that lack of consumers' trust in the internet banking channel, in the internet, in the bank itself and in the bank personnel obstructs their actual adoption of internet banking. These micro thematic categories emerged from the trust factor correlate with the sub-dimensions of trust identified in the existing literature (Gulati & Sytch 2008). The 'risk' thematic category resulted in financial, psychological, physical, social and time sources of risk as micro themes that hinder consumers' adoption of internet banking. However, as identified in the literature synthesis, other sources of risk such as performance risk, delivery risk, payment and source risk were not identified in the present research (Cases 2002). Therefore it is worth noting that the types of risk identified in this study specifically relate to non-users of internet banking in the Australian context.

The costs and benefits micro themes identified relate to the 'value' macro theme and infer that consumers' perceptions that internet banking is costly compared to other banking channels reduces their value perceptions towards internet banking, thus hindering their actual adoption. These micro themes identified for the value category contend with the sub-dimensions that are previously identified in the existing literature (Petrick 2002). The macro thematic category 'lack of resources' showed affordability and accessibility as the micro themes hindering the adoption of the internet banking channel by non-users. 'Social influence' exerted by friends, colleagues and family members was identified in obstructing adoption of internet banking by non-users. This finding from the qualitative data analysis supports the existing literature that friends, colleagues and family members form an integral part of the social channels in influencing an individual's decision-making (Tan & Teo 2000). Another macro thematic category, identified as 'technology apprehension', revealed micro themes of self-efficacy, safety and discomfort associated with internet banking channel as the reasons for non-adoption by non-users of internet banking. Thus, lack of sufficient skills to perform internet-based transactions and safety concerns impede adoption of internet banking by non-users.

Another macro thematic category, 'interactivity', encompasses the micro themes uniqueness and communications. The treatment of the consumer by the bank personnel as unique and conveying promotional offers that are specific to the consumer makes it difficult

for consumers to switch to the electronic banking channels. The macro thematic category 'preference to other channels' subsumed convenience, ease of use and lack of feedback as micro themes. Alternate service delivery channels such as ATMs, telephone banking and branch banking were found to be convenient and easy to use, apart from providing transaction feedback. Therefore, non-users of internet banking tend to prefer and use other alternate channels due to the advantages associated with them. The 'routine' macro thematic category exhibited reluctance and regularity as the micro themes that impede adoption of internet banking by non-users. Thus, consumers based on their routine nature, accustomed to use certain modes of service delivery channels are reluctant to change their behaviour. The 'past users' macro thematic category revealed micro themes of non-monetary and monetary losses inhibited non-users' actual adoption of internet banking. Initial acceptance and adoption of a certain product or service by a consumer should essentially lead to their satisfaction, which subsequently results in its continued and frequent use (Yousafzai *et al.* 2005). Monetary and non-monetary losses result in consumers' lack of satisfaction thus hindering their further use of a product or service under consideration. The macro thematic category 'performed by spouse' revealed tradition, usage and knowledge as micro themes that obstruct adoption of internet banking by non-users. The usual tradition in certain cultures specify roles to be taken based on gender, and lack of knowledge regarding internet banking service delivery channels inhibits adoption of internet banking by non-users.

Some of the macro thematic categories identified from qualitative data analysis relate to the technology, channel, social and value perceptions that internet banking non-users associate with their non-adoption. Macro thematic categories such as 'security', 'trust', 'risk', 'interactivity' and 'preference to other channels' relate to the channel factors. Similarly, other macro thematic categories 'technology apprehension', 'social influence' and 'value' assimilate with technology, social and value factors identified in the existing literature. Internet banking non-users' perceptions regarding security concerns stand out to be a factor significantly impeding their adoption of internet banking. These findings gave credence to the existing innovation resistance literature as some of the emerged thematic categories such as 'risk', 'value' and 'routine' described the various barriers associated with consumers' adoption of internet banking (Kuisma *et al.* 2007). Performance of internet banking by spouse and past users are the new thematic categories that arose from the qualitative data analysis.

The qualitative findings obtained from the internet banking users for the open-ended question, circumstances under which internet banking users use other methods for performing their banking transactions, resulted in the five macro thematic categories of ‘unable to perform over the internet’, ‘lack of internet access’, ‘not sure of something’, ‘problem rectification’ and ‘proximity to auxiliary facilities’. The macro thematic category ‘unable to perform over the internet’ revealed micro themes of cash withdrawals, depositing cheques, overseas transactions and dealing with money orders. As consumers are unable to perform cash and cheque withdrawals and deposits over the internet as well as transactions dealing with overseas and money orders, a majority of the internet banking users prefer either ATMs or branch banks to suit their requirement. ‘Lack of internet access’ identified as another macro thematic category showed travel, server site problems, slow internet speed and power failure as micro themes. All these micro themes identified were situation specific and asserts the importance of considering situation variables in internet banking research in future. The macro thematic category ‘not sure of something’ consisted of the micro themes of introduction of new products and services, dealing with major loans and change in website functions. Thus, if internet banking users are ‘not sure of something’ they prefer to use other banking channels. ‘Problem rectification’, identified as a macro thematic category, showed regular and rare transactions as micro themes. Thus, internet banking users, if faced with a problem while performing either regular or rare transactions, prefer to use other banking channels (most probably branch banks) in order to rectify the problem. Location of the computer and type of internet connectivity were the micro themes identified for ‘proximity to auxiliary facilities’ macro thematic category in this research. Thus, internet banking users prefer to use other banking channels based on the proximity to auxiliary facilities. The open-ended question circumstances under which internet banking users prefer to use other banking channels is exploratory in nature and the thematic categories identified are context specific, eliciting the importance and incorporation of situation specific variables in internet banking research.

Another open-ended question, internet banking users’ perceptions regarding electronic banking methods and their orientation towards customers needs and wants, revealed three macro thematic categories of ‘positive perceptions’, ‘negative perceptions’ and ‘dual perceptions’. The macro thematic category ‘positive perceptions’ resulted in the emergence of the micro themes of convenient, easy to use, user friendly, compatible, advantageous, quality, time saving, fast, less costly and independence. Thus, positive

perceptions are associated with a customer centric approach. A majority of the micro themes identified relate to the benefits associated with the internet banking service delivery channel. The 'negative perceptions' macro thematic category revealed the micro themes of convenient for banks, saves costs for banks, forced to do, not much difference and still need to go to the bank. Thus, negative perceptions indicate that electronic banking methods are of importance to banks in implementing a cost cutting approach and are not oriented towards meeting customers' needs and wants. These negative perceptions exhibited by the internet banking users indicate the influence of social channels (forced to perform as a result of colleagues influence) and value factors. A minor proportion of the internet banking users did not identify much difference with the electronic banking methods and thus did not associate any value perceptions with the various electronic service delivery channels. The third macro thematic category, 'dual perceptions', consisted of the micro thematic categories convenient to both, saves costs to both and saves time to both. Thus, internet banking users with dual perceptions related the importance of electronic banking methods to customers as well as to the banks.

Finally, the open-ended question to internet banking users, experiences with the use of internet banking, resulted in two macro thematic categories, 'positive experiences' and 'negative experiences'. The macro thematic category 'positive experiences' revealed the micro themes benefits outweigh clearly and change in the lifestyle. Thus, internet banking users indicated the value associated with the use of the internet banking service delivery channel and compatibility with their lifestyle. The macro thematic category 'negative experiences' subsumed the micro themes of safety, fraud, lack of personal help, presence of fake websites and hacking. Thus a minor proportion of internet banking users in the past were faced with negative or unpleasant experiences with the use of internet banking, mainly related to safety and fraud. As the benefits clearly outweigh the losses, a majority of the internet banking users prefer to use the internet banking service delivery channel.

6.2.3 Overall Contribution of the Study

The primary objective of the study was to investigate the potential factors influencing consumers' continued and frequent use of internet banking. This was accomplished by specifically examining the influence exerted by technology, channel, social and value for money factors on consumers' continued and frequent use of internet banking. In order of importance, value for money, channel and technology factors were identified as antecedents

to consumers' continued and frequent use of internet banking. Social factors did not exert influence on consumers' continued use, or their frequency of use, of internet banking.

The findings from testing all the research hypotheses mentioned above suggest that consumers' value for money perceptions were pivotal in determining their usage on a continued and frequent basis, followed by their perceptions related to the channel and technology factors. Among the channel factors, consumers were more oriented towards perceptions related to the safety and specialty components whilst performing internet-based transactions. Also, the relevant importance of the technology factors in influencing consumers' usage patterns was related to consumers' perceptions towards the usability and trialability nature of the internet banking service delivery channel. The study has reinforced the importance of integrated theory testing, by developing a conceptual framework from technology acceptance models and diffusion of innovations theory in order to obtain a comprehensive understanding of the factors influencing consumers' continued and frequent use of internet banking.

Although, the present study had questions aimed at the non-users of internet banking, it is one of only a few studies that have examined the consumers' usage behaviour empirically in an internet banking context. The uniqueness of the thesis is that it also links the quantitative and qualitative components of the research, which had been recognised by researchers involved with the internet banking research as a gap in the existing literature (Black *et al.* 2001; Yousafzai *et al.* 2005).

6.3 IMPLICATIONS FOR THEORY

Theoretically, this research helps to expand the current literature and understanding on the topic and provides a number of approaches for future research. This study relates to the understanding of consumers' post-adoption behaviour, unlike earlier studies which focused predominantly on consumers' pre-adoption behaviour. The contribution of this study is the investigation of integrated theory testing based on technology acceptance models and diffusion of innovations theory. This study investigates the conceptual model developed from integrated theory testing, to assess consumers' continued and frequent use of internet banking process by incorporating technology, channel, social and value for money factors.

In the existing marketing literature, consumers' continued and frequent use of internet banking is often a neglected area. The underlying importance of consumers' continued and

frequent use of internet banking relates to cost-effective marketing strategies in retaining customers as well as increasing the profitability and business customer value of the service provider. Thus, technology, channel, social and value for money factors were conceptualised to measure consumers' continued and frequent use of internet banking to encompass diverse aspects of consumer behaviour, and not limiting its evaluation to consumers' acceptance and adoption of internet banking. Further, the distinct role of consumers' continued and frequent use of internet banking was investigated in the dynamics of technology, channel, social and value for money factors and strengthens the existing literature by examining the different impact of each component entered in the model.

The present findings also highlight the importance of technology factors with the emerged components of perceived usability and perceived trialability of the internet channel as critical in influencing consumers' decisions to use internet banking on a continued and frequent basis. Channel factors resulting in perceived safety and perceived specialty components were identified in the present research to be related to continued usage of internet banking. Social factors had no impact in determining either consumers' continued use or frequent use of internet banking. Value for money factors significantly predicted consumers continued and frequent use of internet banking over and above the demographic characteristics set, technology, channel and social factors.

Thus, perceived usability, perceived trialability, perceived safety, perceived specialty and value for money perceptions were identified as antecedents to consumers' continued usage of internet banking. The demographic characteristics set consisting of level of education and level of income, perceived usability, perceived trialability, perceived safety and value perceptions were identified as antecedents to consumers' frequent use of internet banking. Furthermore, in order to limit the impact of confounding research findings and conclusions, the present findings showed the importance of controlling for the influence of demographic characteristics on criterion variables. The actual predictive power of the predictor variables would have resulted in erroneous estimations if demographic characteristics were not controlled for whilst undertaking hierarchical multiple regression and hierarchical logistic regression analyses.

Qualitative data analysis as a result of thematically-clustered matrix display tables revealed several macro and micro thematic categories in hierarchical order based on respondents' actual responses and frequency counts. Moreover, this study is unique, as it

highlights the importance of an integrated framework and a mixed methodology to uncover the different aspects that influence consumers' usage patterns of internet banking.

6.4 IMPLICATIONS FOR METHODOLOGY

During the data analysis phases of the study, which involved data reduction and the use of exploratory factor analysis, most of the scale items used were from the existing literature related to either consumers' intention to adopt or adoption of internet banking studies developed in the USA. This exhibits an important methodological implication for marketing researchers in maintaining a caution with regard to cross-cultural equivalences with the use of scales such as those developed in the USA and their applicability in Australia. Specifically, in cross-contextual situations, marketing researchers need to exert utmost care whilst substituting scales developed to measure consumer acceptance of computer technology to predict consumer acceptance of internet banking.

Since the majority of the scales related to the sub-dimensions of the actual predictor variables were derived from the consumers' intention to adopt and adoption studies, certain scale items required refining for an effective prediction of criterion variables such as consumers' continued and frequent use of internet banking. Scale refinement of the various sub-dimensions included in the study enhanced the researcher's understanding of the more powerful criterion variables of theoretical importance. Moreover, in order to address the methodological limitation from the existing literature that much of the internet banking research is of quantitative in nature, this study takes a triangulation approach by inclusion of quantitative as well as qualitative components for data collection.

Thus notably, this is one of the first studies to use hierarchical multiple regression and hierarchical logistic regression analyses to predict consumers' continued and frequent use of internet banking. At the outset of the analyses, the demographic characteristics set was statistically controlled for their possible confounding influence on the relationship between various predictor and criterion variables. Hierarchical multiple regression revealed perceived usability, perceived trialability, perceived safety, perceived specialty and value perceptions as antecedents to consumers' continued usage of internet banking, whereas, hierarchical logistic regression revealed perceived usability, perceived trialability, perceived safety and value for money perceptions as antecedents to consumers' frequent use of internet banking. Perceived usability and perceived trialability components relate to technology factors. Perceived safety and perceived specialty components relate to channel factors. The demographic

characteristics set consisting of level of education and level of income exerted a positive and significant influence on consumers' frequent use of internet banking. Social factors were found to be non-significant and did not exert any influence in the prediction of consumers' continued and frequent use of internet banking.

Thus the order of entering predictor variables in hierarchical multiple and logistic regression analyses, as specified by the researcher based on theoretical and logical considerations, was supported to a greater extent. Thus, technology factors entered in both the models significantly predicted consumers' continued and frequent use of internet banking over and above the demographic characteristics. Channel factors, entered later in both the models, significantly predicted consumers' continued and frequent use of internet banking over and above the demographic characteristics set and technology factors. However, social factors entered in both the models significantly did not contribute to the prediction of consumers' continued and frequent use of internet banking over and above demographic characteristics, technology and channel factors. The, value for money factor that was entered finally in both the models significantly predicted consumers' continued and frequent use of internet banking over and above the demographic characteristics set, technology, channel and social factors.

The use of open-ended questions and further analysis using thematically-clustered matrix display tables is rare in existing internet banking research. This is one of the first few studies to use open-ended questions in the internet banking context and analyse with the application of thematically-clustered matrix display tables. Qualitative data analysis resulted in several macro and micro thematic categories based on thematically-clustered matrix displays. The emerged macro and micro thematic categories were represented in a hierarchical manner based on the respondent's actual responses and frequency counts.

6.5 IMPLICATIONS FOR PRACTICE

The outcomes from the present study add value to marketing research and practice in a broader perspective to the Australian financial sector and more specifically to the Australian retail banking industry in several ways. The relevance of the technology-related factors emphasises that the traditional focus of banking management on bank employee-customer interaction issues needs to be revised. Bank management essentially needs to reorient their focus on technology-customer interactions and effective management of the technology interface. Consumers' attitudes towards the internet banking service delivery

channel would be different from those of traditional bank branches (Curran *et al.* 2003). Therefore, bank management may opt for the interconnectedness of all the service delivery channels as there is a potential possibility that positive attitudes of consumers towards an existing branch channel might create negative attitudes towards a proliferation of new electronic distribution channels. In order to enhance consumers' positive attitudes towards internet banking, banks may need to publicise the advantages associated with the technology-related internet banking interface.

Within the technology factors, perceived usability and perceived trialability were found to be important sub-dimensions in influencing consumers' continued and frequent use of internet banking. This consistently correlates with the qualitative findings and prior studies on adoption of internet banking (Ndubisi & Sinti 2006). Banks could further highlight the importance of the user-friendly features associated with internet banking in order to enhance consumers' perceptions towards the usability sub-dimension. There is a positive and significant impact of the perceived trialability nature of technology associated with the internet banking service delivery channel. The banks should provide step-by-step instructions, opportunity to test-drive the technological interface, and possible demonstrations on how to use internet banking effectively and efficiently. Banks need to embark on providing free training sessions to customers regarding the general use of computers and specific use of internet banking and educate them with the benefits associated with internet banking usage. Thus, bank marketers should strive continuously to incorporate new and useful capabilities to improve the user-friendliness of their service offerings to the customers. Service providers of individual consumer-oriented applications should engage in constant efforts to positively influence consumers' perceptions as improved user satisfaction, broader usage and positive consumer perceptions are better defences against competitors.

As technology-enabled service delivery channels like internet banking constantly compete for user support, it is essential to understand what users take into consideration when choosing between available service delivery channel alternatives. Thus channel technology designers should always be vigilant of consumers, changing needs and never take consumers' satisfaction for granted. A stable internet banking user base may not always imply high consumer satisfaction as dissatisfied users may choose to stay on not because of loyalty, rather due to lack of better alternatives. Thus bank management and marketers should always

strive to improve their products and services and further enhance consumers' satisfaction and loyalty, regardless of how successful they have been in the past.

Channel factors consisting of perceived safety and perceived specialty components were found to significantly influence consumers' continued use of internet banking. Security, trust and risk components were identified as significant obstructions to non-users' adoption of internet banking. Banks need to develop strategies that will improve the consumer's trust in banking with the internet by development of secure policies and procedures, incorporation of secure mechanisms such as Secure Socket Layers (SSL), embracing encryption and firewall technologies, virus detection and protection measures, protective mechanisms including backup servers, and working coherently with online security firms which might reduce the perceptions of the consumers that the internet-based service delivery channels are uncertain and unsafe (Hawkins *et al.* 2000). In addition, banks should implement effective mechanisms to address any violation of the consumer's sensitive data by placing adequate controls in place to ensure security of personal data. Moreover, the intervention of the nation's government in the provision of safety procedures related to consumers' banking transactions facilitate consumers' continued use and enhance their frequent use of internet banking.

Confidentiality of the consumer needs to be protected by the banks by implementing cryptography techniques (Patton 2004). During and after exchange of information between the consumer and the service provider, information content should be unchanged and tamper free through encryption and digital signatures. Information accessibility and availability should be delivered in as reliable and authorised a manner as possible. Banks should provide proper measures to protect consumers' authentication and authorisation regarding their internet-based financial transactions through creation of passwords and access control policies. Banks need to ensure non-repudiation measures such as confidentiality associated to information passed over the network during communication and stored at different locations through digital signatures and certificates issued to the internet banking users (Maijala 2004). Moreover, banks should protect consumers' privacy through various policies and disclosures (Keen *et al.* 2004).

Risk orientation towards the use of internet-based transactions could be reduced as banks engage in creating consumer awareness of safe internet banking and risk management procedures. The relative importance of consumers' perceptions regarding the personalisation aspect of the internet-based channel was evident through quantitative as well as qualitative

findings. Banks in future should demonstrate the ability to send personalised messages to their prospective and potential internet banking consumers eliciting them as unique customers and, when possible, retrieve consumers' feedback with regard to their service provision. Lack of personal help in the internet-based channels emerged as a finding that inhibits non-users' adoption of internet banking. Therefore, installation of voice prompts by bank management may create a sort of online personal help and thus attract more consumers to use internet banking. At this juncture, banks need to take advantage of marketing communications in reaching their effective target group in order to further enhance their productivity and maximise their profits. Brochures, seminars and online information content must be developed based on a clear understanding of the current knowledge level of the customers. Bank management needs to exert a great effort whilst selecting and training the online contact personnel. Online contact personnel should also be monitored continuously over time regarding their appropriateness of their level of knowledge and their attitude towards customers.

The lack of significant association between social factors and consumers' continued and frequent use of internet banking reveals the consumers' orientation towards protection of confidential and private information. However, qualitative data findings reveal the importance associated by certain ethnic groups to the social influence exerted by friends, colleagues and family in their non-adoption of internet banking. Banks should identify those ethnic groups and approach them through a differentiated marketing strategy and continuously ensure the security aspects of financial transactions outside their home country. Offering special discounts may act as a promotional technique if they introduce their salient referent groups to the use of internet-based channels. Thus, banks can increase their internet banking customer base and effectively retain their existing customers.

The importance that consumers associate with the value for money factors to their continued as well as frequent use of internet banking is evident from both quantitative and qualitative findings. This indicates the attention that bank managers as well as bank marketers need to exert in provision of effective service delivery in an online environment. The findings from the qualitative study reveal that consumers clearly weigh up benefits associated with internet banking to their perceptions of costs. Therefore, it is important that bank marketers in future should be more oriented towards imparting more benefits to consumers and encouraging them to use internet banking on a continued and frequent basis. Retail banking

and marketing managers need to have a coherent understanding of the relative importance of the various dimensions of value as perceived by customers during their evaluations and accordingly develop marketing strategies. Monetary and non-monetary losses as significant inhibitors for consumer adoption of internet banking from qualitative analysis relate to the trade-off between benefits and sacrifices associated with the use of internet banking. Thus, bank management and retail banking marketers try to control or minimise the losses and strive to enhance customer loyalty through customer satisfaction by offering a comprehensive service.

The relevant importance and hierarchical impact of the various predictor variables on consumers' continued and frequent use of internet banking would help bank marketers to effectively segment customers based on the motivations that drive their online banking behaviour, rather than on traditional methods (Durkin 2004). Qualitative data findings also revealed the preference and convenience associated at times by internet banking users with other electronic banking methods such as ATMs and telephone banking. Banks may opt to provide accurate information to consumers regarding the range of services available over the internet and further think about installation of internet kiosks. Also the 'routine' nature exhibited by the non-users could be approached by bank marketers by introducing varied sales promotion techniques which may effectively engage in customer retention and increase their relationship with the service provider. 'Performed by spouse' is another theme that emerged as an inhibitor associated with the adoption of internet banking by female non-users. Bank marketers may need to attract these customers by introduction of specific gender-oriented incentives and motivate them constantly to use internet banking for their financial transactions. The 'type of internet connectivity' was also elicited as a factor hindering consumers' adoption of internet banking by non-users. Banks may need to enter into a partnership deal with an internet service provider and try to provide a more value-based service to the customers. Service marketers need to focus on situation specific variables such as time and location in order to differentiate their service and create additional value for customers. Considering situation specific variables increases the managerial value and helps in the effective positioning of internet banking services in relation to other electronic banking methods.

6.6 LIMITATIONS OF THE PRESENT RESEARCH

One of the limitations associated with the current study is related to the reduced capacity to draw causal inferences that were inherent in the application of a survey type of research. The data for testing the conceptual model were obtained in a cross-sectional manner on a single occasion from a single source. Therefore the data collection method employed in this study had the potential for single source bias. Responses were obtained only from those respondents who agreed to answer the questionnaire by interception in a shopping mall. Therefore the findings invite speculation with regard to causal relations concerns and further testing would be essential for verification. Also the researcher, when conducting the analysis, performed transformations of the variables that were found to be skewed in their distributions. Moreover, during hierarchical multiple regression and hierarchical logistic regression analyses, in order to avoid any intervention of confounding and spurious relationships, demographic characteristics were statistically controlled.

Another limitation of this study is the use of self-report measures associated with consumers' perceptions of internet banking. Such measures have the potential to confound findings due to common method variance. Although a limitation, nevertheless it was a convenient method that allowed the researcher to efficiently examine the large number of relevant variables from a wider sample. However, there was no sign of lack of discriminant validity, the usual sign of common method variance among the principal constructs. Also self-report measures have been successfully used in prior research (Yousafzai *et al.* 2005; Straub *et al.* 1995). While aiming to investigate the antecedents to consumers' continued and frequent use of internet banking, the strength of the research lay in the reliability and goodness of fit measures of the final emerged components identified. Also the fact that most of the factors identified as a result of exploratory factor analysis exhibited consistency with the scale dimensions should increase the meaningfulness of these findings. The researcher, however, expects that these findings will motivate internet banking researchers to test the specific relationships examined in this study using other possible reliable measures and procedures and thus circumvent the problems associated with the use of self-reporting techniques.

The issue of generalisability is a limitation in most of the consumer behaviour studies and the present study is no exception. The study has been conducted in Australia and specifically targeted the retail banking consumers who were internet banking users and non-

users. The resultant findings may vary with the application of the study to other banking contexts and other countries. Prior internet banking research indicated variation in the findings obtained when conducted in cross-cultural contexts (Unnithan & Swatman 2001). This may possibly explain why some of the theorised relationships between certain factors and consumers' continued and frequent use of internet banking did not materialise. Social factors had been expected to significantly relate to consumers' continued and frequent use variables. However, the absence of significant relationships between the abovementioned was partially supported and was partially contrary to the existing theory and needs to be examined afresh. Therefore the present study could not either rule out or rule in the predicted effects in these areas unequivocally. This issue could be attributed partly to the complexities of the models tested.

Many issues still remain unanswered in identifying the relevant antecedents that might be of importance to consumers' continued and frequent use of internet banking. Furthermore, this research did not investigate whether the predictor variables exhibit any differences as a function of consumers' familiarity, nature and type of internet banking transactions and would result in any moderating or mediating effects. Similarly, the study did not take into consideration Soderlund's intentions approach, commonly used in the consumers' repurchase intentions as the aforementioned focuses on customer satisfaction and customer familiarity variables. However, it is hoped that findings from this study will stimulate additional research and will enhance our understanding of the role of various factors exerted as predictor variables on consumers' continued and frequent use of internet banking outcomes.

The qualitative data collection and analysis presented several limitations. Data were obtained from the internet banking users and non-users. The respondents who chose to respond to the four open-ended questions cannot be assumed to speak for all internet banking users and internet banking non-users. Moreover, from the effective sample of 311, only 298 internet banking non-users provided responses to the first open-ended question, and from the effective sample size of 372, only 354 internet banking users provided valid responses for the second question, 323 responded to the third question, and 315 responded to the fourth question. The similarities and differences in respondents' responses discovered for each of the open-ended questions cannot be therefore directly extrapolated to cover the overall perceptions of Australian internet banking users and non-users.

6.7 AVENUES FOR FURTHER RESEARCH

As stated in section 6.6, this research studied only consumers' continued and frequent use of internet banking in Sydney, leading to some unexpected findings which were partially contrary to existing theory. Therefore, replication of similar research and samples would enhance our knowledge whether or not this absence of confirmation may be attributed to the industry-related sample. The findings obtained from the study relate to the financial services sector, retail banking industry in general and specifically address consumers' usage patterns of internet banking. Future research should focus on other related service sectors such as tourism, call centres and hospitality and consumers' perceptions related to their continued and frequent use of the relevant service provider's service. It is also imperative to study the influence of potential factors on consumers' perceptions and usage of products and services of credit unions, building societies and non-banking financial institutions and compare the findings with those of the retail banking industry to see if this would result in any similarities and differences. Future research could possibly encompass all the electronic service delivery channels in order to determine any variation in consumers' usage patterns. A further extension of the present research to the other nations and subsequent comparative analysis would result in interesting findings.

To avoid the previous concern for the source bias attributed to the cross-sectional nature of the study, future research should examine the relationship between the criterion variables and consumers' continued and frequent use of internet banking variables by collecting these data from different sources at separate points in time and over a longer period of time. The potential effects of common method variance and source bias would be controlled to a greater extent with the implementation of longitudinal studies. Therefore, it is beneficial if future research focuses on longitudinal surveys (Yousafzai *et al.* 2005; Collier & Sherrell 2009).

The qualitative findings obtained from this study emphasise past users of internet banking service as one of the emergent macro thematic categories. This study was based on prior research using data obtained only from the two sources of internet banking users and internet banking non-users (Kasheir *et al.* 2009; Kuisma *et al.* 2007; Yousafzai *et al.* 2005). However, the emergent themes of past users indicate that future research should focus on either including past users or dormant users of internet banking as a potential source of

sample for data collection and subsequent analysis in addition to internet banking users and non-users.

In order to enhance the response rate from the samples to be included in future studies, researchers need to involve more respondents. A possible way to do the abovementioned would be to link participation of the respondents in the survey with relevant incentives. Also, increased response rates could be obtained by informing the respondents that filling out correct responses to all the questions included in the questionnaire could attract a cash prize or incentive.

The impact of situational variables was asserted by existing studies with regard to online purchase of products (Black *et al.* 2001). However, the present study did not incorporate the effect of situational variables and possible impact on the consumers' usage of internet banking. Further studies need to enhance internet banking research by way of including situation variables and by highlighting the significance of the role played by them in an online services context.

The impact of the social influence construct as a predictor variable needs rethinking. A closer look at the qualitative findings in comparison with demographic data reveals the association of the ethnicity categorical variable with the consumer's usage patterns of internet banking. It is therefore imperative that future studies incorporate in their research whether there exists any moderating or mediating role of ethnicity in determining the direction of association between the social construct and consumers' usage patterns of internet banking. Also, differences and similarities exhibited, if any, based on the ethnicity perspective, require a further change in the implementation of related marketing strategies.

The correlations exhibited by the technology, channel and value for money factors on consumers' continued and frequent use of internet banking shows a lot of promise and therefore future research should examine the possible sub-dimensions. Investigating other possible sub-dimensions and their impact in predicting outcomes is detrimental, particularly in an emerging new area of internet banking research focusing on consumers' continued usage and frequency of usage.

This study compared various theories in terms of their explanatory capacities by application of an integrated framework with mixed methodology. It is imperative that future studies develop more hybrid models in order to understand consumers' decision-making

processes and usage of various services in a more cohesive manner. Furthermore, studies related to consumer behaviour and services marketing areas focus mostly on the quantitative aspect and often neglect the importance of the qualitative data (Thornton & White 2001). Further research should examine the relevance of using more mixed methodological approaches. Thus, future research should underpin the broad findings obtained from the present study and focus on investigating the possible impact of situational variables that might be of relevance in determining consumers' continued and frequent usage patterns of internet banking.

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APPENDICES

Appendix A: CONSENT FORM



School of Business, Economics and Public
Policy
Faculty of The Professions
Armidale, NSW 2351, Australia
Telephone: 61 2 6773 2915
Email: sadapa@une.edu.au

Ref: PhD Research Project – Survey

This survey is part of a doctorate research project conducted by me as a PhD student at the School of Business, Economics and Public Policy at the University of New England, Australia, under the supervision of Dr. Jennifer Rindfleish (Phone: (02) 6773 2552; Email: jrindfle@une.edu.au), Professor Ray Cooksey (Phone: (02) 6773 2563; Email: rcooksey@une.edu.au) and Dr. Fredy Valenzuela (Phone: (02) 6773 3398; Email: fvalenzu@une.edu.au). This survey is being conducted with 500 people who will be intercepted as they are entering or exiting a busy mall. Completing the survey will take 20 minutes approximately.

The purpose of the survey is to obtain a better understanding of the factors influencing customers' evaluations of the internet banking. Results of this study may help banks to improve their channel design and formulation strategies and will be published in international academic marketing journals.

We invite you to participate in this survey, whose participation is strictly voluntary. You may withdraw your participation at any time. All answers will be confidential to the researcher and her supervisor. Your name will in no way be connected to any responses you choose to provide. The data will be destroyed after five years.

If you have any queries please ask the researcher during the survey. If you have any more questions about the study, please feel free to contact me at the above telephone number/e-mail address. Thank you very much in advance for your participation.

CONSENT AGREEMENT

I (the participant) have read the information above and any questions I have asked have been answered to my satisfaction. I agree to participate in this activity, realizing that I may withdraw at any time. I agree that research data gathered for the study may be published, provided my name is not used.

.....

Participant or Authorised Representative

Date

.....

Investigator

Date

Appendix B: INFORMATION SHEET FOR PARTICIPANTS (Survey)



School of Business, Economics and Public Policy
Faculty of The Professions
Armidale, NSW 2351, Australia
Telephone: 61 2 6773 2915
Email: sadapa@une.edu.au

Ref: PhD Research Project – Survey

This survey is part of a doctorate research project conducted by me as a PhD student at the School of Business, Economics and Public Policy at the University of New England, Australia, under the supervision of Dr. Jennifer Rindfleish (Phone: (02) 6773 2552; Email: jrindfle@une.edu.au), Professor Ray Cooksey (Phone: (02) 6773 2563; Email: rcooksey@une.edu.au) and Dr. Fredy Valenzuela (Phone: (02) 6773 3398; Email: fvalenzu@une.edu.au).

The purpose of the survey is to obtain a better understanding of the factors influencing customers' evaluations of internet banking. It is anticipated that this research will be completed by the end of December 2008. Results from this study may help banks align their businesses to the needs of customers and will be published in international academic marketing journals.

We invite you to participate in this survey and participation is strictly voluntary. Each survey should take approximately 20 minutes to complete. You may withdraw your participation at any time. All answers will be confidential to the researcher and her supervisors. Your name will in no way be connected to any responses you choose to provide. The data will be destroyed after five years.

If you have any queries please ask the researcher during the interview. If you have any more questions about the study, please feel free to contact me at the above telephone number or email address. Thank you very much in advance for your participation.

Yours sincerely

Sujana Adapa

Note: This research project has been approved by the Human Research Ethics Committee of the University of New England (Approval No: HE08/078 Valid to: 23/05/2009).

Please retain this sheet for your information. Should you have any complaints concerning the manner in which this research is conducted, please contact the Research Ethics Officer at the following address: Research Services, University of New England, Armidale, NSW 2351, Australia.

Telephone: (02) 6773 3449, Facsimile: (02) 6773 3543, Email: ethics@une.edu.au

Appendix C: QUESTIONNAIRE

SECTION ONE: BACKGROUND QUESTIONS

B1. Which of the following banking products are you currently using? Please **tick** (✓) as many as apply.

- | | |
|---|---|
| <input type="checkbox"/> Savings Account | <input type="checkbox"/> Current Account |
| <input type="checkbox"/> Credit Card | <input type="checkbox"/> Debit Card |
| <input type="checkbox"/> Foreign Exchange Trading | <input type="checkbox"/> Personal Loan |
| <input type="checkbox"/> Mortgage | <input type="checkbox"/> Insurance |
| <input type="checkbox"/> Car Loan | <input type="checkbox"/> Securities Trading |
| <input type="checkbox"/> Overdraft | <input type="checkbox"/> Investment Fund |
| <input type="checkbox"/> Others, please specify _____ | |

B2. Apart from the products that you are currently using, which other banking products are you likely to use in the next six months? Please **tick** (✓) as many as apply.

- | | |
|---|---|
| <input type="checkbox"/> Savings Account | <input type="checkbox"/> Current Account |
| <input type="checkbox"/> Credit Card | <input type="checkbox"/> Debit Card |
| <input type="checkbox"/> Foreign Exchange Trading | <input type="checkbox"/> Personal Loan |
| <input type="checkbox"/> Mortgage | <input type="checkbox"/> Insurance |
| <input type="checkbox"/> Car Loan | <input type="checkbox"/> Securities Trading |
| <input type="checkbox"/> Overdraft | <input type="checkbox"/> Investment Fund |
| <input type="checkbox"/> Others, please specify _____ | |

B3. How many different banks are you currently using? Please **tick** (✓) the most appropriate box.

- One
 Two
 Three
 Four
 Five and Over

B4. How long have you been using the internet? Please **tick** (✓) the most appropriate box.

- | | |
|--|--|
| <input type="checkbox"/> Less than 6 months | <input type="checkbox"/> 6 months – Less than 1 year |
| <input type="checkbox"/> 1 year – Less than 2 years | <input type="checkbox"/> 2 years – Less than 3 years |
| <input type="checkbox"/> 3 years – Less than 5 years | <input type="checkbox"/> Above 5 years |

B5. How many hours do you spend on the internet on an average per day? Please **tick** (✓) the most appropriate box.

- | | |
|--|--|
| <input type="checkbox"/> Less than 1 hour | <input type="checkbox"/> 1 hour – Less than 2 hours |
| <input type="checkbox"/> 2 hours – Less than 3 hours | <input type="checkbox"/> 3 hours – Less than 4 hours |
| <input type="checkbox"/> 4 hours – Less than 5 hours | <input type="checkbox"/> More than 5 hours |

B6. What type of internet connectivity do you have? Please **tick** (✓) the most appropriate box.

- Broadband
 Dial up
 Others, please specify _____

B7. In general, where do you access the internet from? Please **tick** (✓) as many as apply.

- Office Home
 Public Library Internet centre/ cafe
 Others, please specify _____

Internet banking users please proceed to question B8 of section one and internet banking non-users please proceed to section two of the questionnaire.

B8. Where do you access the internet from for your banking transactions? Please **tick** (✓) as many as apply.

- Office Home
 Public Library Internet centre/ cafe
 Others, please specify _____

B9. How frequently do you use internet banking on an average per week? Please **tick** (✓) the most appropriate box.

- Fewer than once Once a week
 2 times a week 3 times a week
 4 times a week 5 times a week
 More than 5 times a week

B10. Please rank the following banking types below based on your frequency of use (1 for the most frequently used banking type)

- ____ Bank Branch ____ ATM
____ Telephone Banking ____ Internet Banking
____ Mobile Banking
____ Others, please specify _____

B11. Which of the following internet banking products or services are you currently using? Please **tick** (✓) as many as apply.

- Account information Balance inquiry
 Electronic bill payments Funds transfer
 Loan application Securities trading
 Cheque book application/ cancellation
 Others, please specify _____

SECTION TWO: DEMOGRAPHIC QUESTIONS

D1. Please indicate your gender

- Male
 Female

D2. What is your age? Please **tick** (✓) the most appropriate box.

- | | |
|-------------------------------------|----------------------------------|
| <input type="checkbox"/> 18 – 21 | <input type="checkbox"/> 22 – 25 |
| <input type="checkbox"/> 26 – 30 | <input type="checkbox"/> 31 – 40 |
| <input type="checkbox"/> 41 – 50 | <input type="checkbox"/> 51 – 60 |
| <input type="checkbox"/> 61 or over | |

D3. What is the highest level of education you have completed? Please **tick** (✓) the most appropriate box.

- | | |
|---|--|
| <input type="checkbox"/> Primary school | <input type="checkbox"/> Secondary (or High) school |
| <input type="checkbox"/> Vocational education and training (TAFE) | <input type="checkbox"/> Higher education (University) |

D4. Please estimate your personal gross annual income? Please **tick** (✓) the most appropriate box.

- | | |
|--|--|
| <input type="checkbox"/> \$ 20 000 and under | <input type="checkbox"/> \$ 20 001 - \$ 35 000 |
| <input type="checkbox"/> \$ 35 001 - \$ 50 000 | <input type="checkbox"/> \$ 50 001 - \$ 65 000 |
| <input type="checkbox"/> \$ 65 001 - \$ 80 000 | <input type="checkbox"/> \$ 80 001 and over |

D5. What is your ethnicity? Please **tick** (✓) the most appropriate box.

- | | | |
|---|--------------------------------------|----------------------------------|
| <input type="checkbox"/> Anglo-Australian | <input type="checkbox"/> Asian | <input type="checkbox"/> English |
| <input type="checkbox"/> Middle Eastern | <input type="checkbox"/> New Zealand | |
| <input type="checkbox"/> Others, please specify _____ | | |

D6. Please specify your occupation _____

SECTION THREE: INTERNET BANKING NON-USERS

NU1. Are you a current user of internet banking?

- Yes. If you choose this response, please go to section four.
- No

NU2. If you are not using internet banking, which of the following ways do you use to conduct your banking transactions? Please **tick (√)** as many as apply.

- Bank Branch
- ATM
- Telephone Banking
- Mobile Banking

NU3. Could you please tell us your reasons for not using internet banking to perform your banking transactions?

Thanks for your participation!

SECTION FOUR: TECHNOLOGY FACTORS

The following statements represent your perceptions about the technology associated with internet banking. Please indicate the degree of your agreement or disagreement with each statement by placing a tick (✓) in the most appropriate box. . The scale below defines the response number for you.

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree	Unable to Rate
	1	2	3	4	5	UR
TD1. Internet banking makes it easier for me to conduct my banking transactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD2. Internet banking gives me greater control over my finances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD3. Internet banking allows me to manage my finances more efficiently.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD4. Internet banking is a convenient way to manage my finances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD5. Internet banking can be frustrating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD6. Internet banking is compatible with my lifestyle.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD7. Using internet banking fits well with the way I like to manage my finances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD8. Using the internet to conduct banking transactions fits into my working style.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD9. Internet banking requires a lot of mental effort.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD10. Internet banking is useful for managing my financial resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD11. Internet banking is an easy way to conduct banking transactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD12. Prior to the actual adoption, internet banking is available for me to use on a trial basis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD13. I am able to use internet banking to see what it can do for me prior to the actual adoption.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD14. I have a great deal of opportunity to try internet banking before the actual adoption.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD15. The results of using internet banking are apparent to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD16. I believe I could communicate to others the consequences of using internet banking.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TD17. I would have difficulty explaining to others why using internet banking may be beneficial.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION FIVE: CHANNEL FACTORS

Listed below are the statements that represent your perceptions about the internet as an electronic banking channel. Please indicate the degree of your agreement or disagreement with each statement by circling the most appropriate response. The scale below defines the response number for you.

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree	Unable to Rate
	1	2	3	4	5	UR
CD1. I am confident of using internet banking even if there is no one around to show me how to use it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD2. I am confident of using internet banking if I have the built-in online "help" function for assistance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD3. I am confident of using internet banking even if I have only the online instructions for reference.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD4. I am confident of using internet banking if I see someone else using it before I try it myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD5. I am confident of using internet banking if I could call someone for help if I got stuck.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD6. I am confident that internet banking in Australia is secure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD7. Information concerning my internet banking transactions can be accessed by others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD8. Performing internet banking transactions makes me feel psychologically uncomfortable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD9. Internet banking transactions could lead to an inefficient use of my time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD10. Internet banking is trustworthy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD11. I trust in the ability of internet banking to protect my privacy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD12. Using internet banking is financially secure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD13. Performing internet banking makes me feel that I am a unique customer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD14. Internet banking websites provide information that is tailor-made for me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD15. The promotional offers that I receive through internet banking transactions are attractive to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION SIX: SOCIAL FACTORS

The following statements represent your perceptions about the influence of social determinants on your usage of internet banking. Please indicate the degree of your agreement or disagreement with each statement by placing a **tick (✓)** in the most appropriate box. . The scale below defines the response number for you.

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree	Unable to Rate
	1	2	3	4	5	UR
SD1. My decision to use internet banking is influenced by my friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SD2. My decision to use internet banking is influenced by my family.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SD3. My decision to perform internet banking is influenced by my colleagues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SD4. I frequently gather information from friends about internet banking before I actually perform any transactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SD5. I often check with others to make sure that I am properly using internet banking.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SD6. I often observe how others conduct their banking transactions before I actually perform any transactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION SEVEN: VALUE FACTORS

The following statements represent your perceptions about the value of internet banking. Please indicate the degree of your agreement or disagreement with each statement by circling the most appropriate response. The scale to the right defines the response number for you.

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree	Unable to Rate
	1	2	3	4	5	UR
VD1. Internet banking is very reliable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VD2. Internet banking is of outstanding quality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VD3. Internet banking provides easy access to information.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VD4. I am happy with the price charges for performing internet banking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VD5. Internet banking has a good reputation in Australia.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VD6. Internet banking transactions can be performed with very little effort.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VD7. Performing internet banking transactions is the right decision when price and other expenses are considered.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VD8. Internet banking transactions are economical.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION EIGHT: CONTINUED USAGE FACTORS

The following statements represent your perceptions about the continued use of internet banking in future. Please indicate the degree of your agreement or disagreement with each statement by circling the most appropriate response. The scale to the right defines the response number for you.

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree	Unable to Rate
	1	2	3	4	5	UR
UD1. Internet banking usage is a positive experience for me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
UD2. I intend to use internet banking regularly to perform my banking transactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
UD3. I intend to increase my use of internet banking transactions in future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION NINE: YOUR OPINIONS

We would be interested in your responses to the following questions.

O1. As an internet banking user, under what circumstances do you use other ways to conduct your banking transactions?

O2. According to you, are the electronic banking methods offered by banks are oriented towards the customer's needs and wants?

O3. Would you like to offer any further comments about your experiences with internet banking?

If you are interested in receiving a copy of the analysis report, please provide the following information.

Name:

Contact Number:

Email:

Thanks for participating in the survey!