Entrepreneurship, e-finance and mobile banking

Vanessa Ratten

Faculty of Business and Law,
Deakin Graduate School of Business,
Deakin University,
70 Elgar Road Burwood, Victoria 3125, Australia
E-mail: vanessaratten@gmail.com

Abstract: This paper focuses on the role of entrepreneurship and e-finance in determining a person's intention to adopt mobile banking. The approach utilised in this paper is to develop a conceptual framework that includes a number of propositions that are developed and justified by the literature. The main findings of this paper are that people's entrepreneurial inclination and learning tendency will determine how they respond to marketing and knowledge about mobile banking. The practical implications are that financial institutions involved in e-finance can focus their marketing efforts at increasing people's exposure to mobile banking.

Keywords: e-finance; mobile banking; banking; marketing; knowledge; mobile commerce; social cognitive theory; learning.

Reference to this paper should be made as follows: Ratten, V. (2012) 'Entrepreneurship, e-finance and mobile banking', *Int. J. Electronic Finance*, Vol. 6, No. 1, pp.1–12.

Biographical notes: Vanessa Ratten (PhD) is a Senior Lecturer in Strategic Management and Entrepreneurship at Deakin University, Australia. Her research interests include technological innovation (including m-commerce, social cognitive theory and strategic alliances) and entrepreneurship (including sport entrepreneurship, international entrepreneurship and social entrepreneurship). She has published in numerous journals including the *Asia Pacific Journal of Marketing and Logistics*, *International Journal of Entrepreneurship and Small Business*, *Journal of High Technology Management*, *European Journal of Innovation Management*, *Journal of Management & Organisation*, *International Journal of Educational Management*, *Thunderbird International Business Review* and the *International Journal of Innovation and Technology Management*.

1 Introduction

Mobile banking services have become more popular in recent years, as they are viewed as a trustworthy and reliable electronic finance (e-finance) alternative to traditional banking forms (Chung and Kwon, 2009). This is due to mobile banking offering customers a number of advantages over traditional face-to-face banking (Kaur et al., 2011). The increased use of electronic delivery methods for financial products and services has led to more consumers preferring mobile banking as a more efficient way to conduct their banking (Beneke, 2011). In addition, mobile banking usage has increased

rapidly in the past couple of years, as the mobile internet capability rate has become cheaper and more user friendly. Small hand held mobile computer devices like Smartphones or iPads enable people to do more frequent and easier banking, as they can do their banking at any time and from any geographic location. This enables people to get real time information about banking products in a direct and discreet manner (Koh et al., 2010). Moreover, there has been a high adoption rate of mobile banking services, as more phone companies have incorporated internet services into new phone packages (Laukkanen and Kiviniemi, 2010). Financial institutions have increased automated processes through technological innovations that encourage the use of m-commerce services (Takac, 1997). E-finance has meant that banks have changed the way they market their services to consumers through the advancement of technology (Wymbs, 2000). More recently, emerging technological innovations such as the iPad have enabled banks to constantly update their marketing strategies (Hall et al., 1999).

The globalisation of the banking industry encouraged people to use m-commerce as a source of information and as a way to communicate (Ratten, 2009). Mobile commerce (m-commerce) has enabled the banking industry to conduct e-finance through mobile devices (Holland, 2008). Most people around the world have a mobile phone and an increasing number have internet-enabled mobile phones such as Blackberrys and iPhones. This has enabled financial institutions to give consumers easier access to electronic funds and money transfers (Ratten and Ratten, 2007). More people are now utilising mobile banking, as it is often a cheaper and easier alternative to traditional banking in many countries (Laukkanen, 2007).

Mobile banking is a new technology that requires people to learn additional applications before they are able to use this service (Lingfen et al., 2010). People's learning and entrepreneurial behaviour is part of their lifestyle as they seek out new technologies that can increase their standard of living. Some people have a higher tolerance for risk, as they are technologically savvy customers who are often early adopters of new technologies like mobile banking. The aim of this paper is to discuss whether a person's entrepreneurial and learning capabilities mediate external environmental factors that are part of a person's lifestyle, such as marketing and knowledge. Therefore, the purpose of this paper is to further investigate how these factors influence a person's intention to adopt mobile banking and so, the research question for this paper is given below.

Research question: What internal and external environmental factors influence a person's intention to adopt mobile banking?

This paper will be structured in the following format. First, a review of the literature will focus on the major theories utilised to understand technological innovations. Next, the theoretical framework is espoused with social cognitive theory as its underpinning. The research propositions stemming from the theoretical framework are then explained and the relationships between marketing, knowledge, learning tendency and entrepreneurial inclination are stated. The conclusions of the paper are highlighted along with managerial and academic implications focusing on e-finance. The last section of the paper details the limitations of the paper and future study recommendations.

2 Literature review

Mobile phones are the predominant communication device that people and businesses globally use on a daily basis. People who use mobile phones are becoming more knowledgeable about innovative e-finance services (Ratten, 2009). Mobile banking has increased rapidly in the past decade, as it enables the use of a mobile phone to conduct e-finance. New mobile phone applications including games, cameras and voice recognition are being marketed as entrepreneurial services that people can learn about. The rate at which people adopt mobile banking will be influenced by how quickly they learn about it. Mobile banking differs from traditional banking, as it is conducted through wireless communication. Aungst and Wilson (2005) define wireless communication as the process of communicating through a free-space environment. Previously, most communication was conducted through wired or other physical conduits. Mobile banking has given people flexibility in terms of where and when they do their banking. This mobility of banking enables businesses and people to increase their productivity (Lu et al., 2003). Moreover, mobile banking has a number of additional features that increase its accessibility. People can send money via text message and be paid directly via their mobile phone (Ratten, 2009). In remote geographic areas where there are no banks, mobile phones enable people to transfer and receive money. These additional features of mobile banking have created a market for people who previously were not able to do their banking due to geographic restrictions (Snowden et al., 2006).

The internet has revolutionised the financial services industry by enabling banks to communicate product and service information electronically (Tong, 2010). Electronic payment systems have become popular, as more people seek to harness the advantages of mobile communications (Wymbs, 2000). Mobile banking usage has increased at the same time due to web-enabled devices becoming smaller and more portable (Holland, 2008; Snowden et al., 2006). The integration of mobile banking into business processes is a major component of m-commerce, as it allows information to be processed by both public and private computer networks. Mobile banking has become more affordable, and banks have harnessed the power of e-finance to communicate directly with individual consumers about additional financial service products such as home loans.

There are two major learning perspectives that explain technology adoption behaviour: behavioural and cognitive. Behavioural learning theories focus on the observable changes people experience once they have been exposed to a technology innovation, thereby highlighting their responses once they have adopted the technology. On the other hand, cognitive learning theories focus on how people adopt technologies, which includes their problem solving ability. The main theories in the mobile commerce literature used to explain technological innovations are the Technology Acceptance Model (TAM), the Theory of Planned Behaviour (TPB), the Theory of Reasoned Action (TRA) and more recently, the social cognitive theory. These theories are useful to understand the usages of mobile banking as a technological innovation. Technological innovations enable businesses to introduce new ideas or creations in the marketplace (Rogers, 1995). In many cases, these innovations update an existing product or service by co-existing with surviving technology (Rycroft, 2006). However, technological innovation may supersede existing technology by involving an incremental or radical invention (Birkinshaw and Mol, 2006). Often, businesses will link with other organisations to generate technological innovations by generating new techniques

that are undertaken through processing additional scientific information or knowledge (Cantisani, 2006).

Cognitive learning implies that a person processes information as well as responds to external stimuli, and is adopted in this paper. The TRA was one of the first theories used to help understand how people interact with technology innovations in their surrounding environment. Fishbein and Ajzen (1975), in a seminal paper, discussed how people's environments influenced how they respond to changes, their opinions about the perceived change and their attitudes about the successfulness of their behaviour. The TRA originally included five variables that were predictors of a person's behaviour: beliefs and evaluations, attitude toward the behaviour, normative beliefs and motivation to comply, subjective norm and intention (Ajzen and Fishbein, 1980). These variables have been criticised for focusing too much on people and not enough on the external environmental factors that impact people's behaviour. This criticism is due to TRA assuming that individuals are systematic and rational in their decision making capabilities (Ratten and Ratten, 2007). To lessen this criticism, the TRA has been refined to provide a more general overview of the behaviour of individuals as a way to understand how a person learns.

The TPB was developed by Ajzen (1985) after the TRA to further refine the understanding of a person's behavioural intentions. The TPB goes beyond the TRA in acknowledging that people's behaviour is not always under their control because of external environmental influencers, such as changes in price and geographic location. Therefore, depending on the market availability of a technological innovation, they may not be able to adopt it until access is available. Mathieson (1991) reported that the TPB assumes that people do not adapt or respond to changes in their environment, but rather plan their actions in advance. This planning aspect of the TPB is an important antecedent to a person's behaviour. The TPB differs from the TRA in that it does not include beliefs, evaluations and motivation to comply. This is due to TPB's focus on individuals' internal environment, including perceived behavioural control as a way to explain people's perceptions of the availability, resources and restrictions required to enable them to complete a task (Ajzen, 1985). The focus on a person's perceived behavioural control helps explains how environmental influencers such as geographic location affect a person's behaviour.

Another theory used to explain behaviour is the TAM, which, unlike the TPB, does not include external environmental influencers (Venkatesh and Davis, 1996). Instead, the focus is on internal environmental influencers such as people's perceptions of a given technology and their tendency to accept that technology more quickly when they observe other people using it (Chan and Lu, 2004). Therefore, the rationale of the TAM is in determining how a person decides if a technology will be beneficial, based on its innovative capabilities (Ratten, 2008). The TAM is commonly used in technology innovation literature, as it focuses on the social processes influencing technology adoption, which are developed from the use of the internet (Davis, 1989). In addition, the TAM was developed specifically to focus on innovations resulting from technological changes made possible by the internet. The TAM differs from the TPB as it includes perceived usefulness and perceived ease of use. These two variables are useful to understand how a person adopts a technology, but do not take into account the stage of the adoption process the person is in. This means that a person is likely to perceive mobile banking differently at the initial stage of its adoption into the market, when it is

still being tested and refined. In addition, the TAM does not include people's attitudes towards behaviour and their behavioural intentions that were originally in the TRA.

The social cognitive theory is a learning theory, which makes it a useful foundation for understanding the role of entrepreneurship in influencing a person's intention to adopt mobile banking. The social cognitive theory was developed by Wood and Bandura (1989) to understand how people learn through their social environment, which includes individual and group determinants of behaviour. People experience different outcomes based on their observations of their social environment (LaRose and Eastin, 2004; Pincus, 2004). It is useful to understand how people interact with their environment by adopting and managing their behaviour (Ratten and Ratten, 2007; Bolt et al., 2001). The social cognitive theory is used in this paper, as it focuses on the dynamic nature of a person's environment (Kock, 2004), which is influenced by constant changes made possible by advancing scientific knowledge through technological innovations (Cantisani, 2006). People's social environment changes their behaviour as they learn through observing other people (Li et al., 2007). LaRose and Eastin (2004) stressed the importance of a person's social group as a source of learning about both internal and external environmental factors. As a result of knowledge obtained about new technologies, a person's behaviour will change (Chan and Lu, 2004).

Bandura (1986) proposed that the social cognitive theory is a way to understand how people interact with their environment. The environment is a source of people's behaviour as they respond to actions that occur ad hoc or in an intentional manner (McCormick and Martinko, 2004). The social cognitive theory incorporates both internal and external environmental drivers of a person's behaviour. People's social interactions and experiences are part of the learning that they conduct by observing others and by observing how knowledge develops from interactions with technological innovations.

3 Conceptual framework

The conceptual framework proposed in this paper includes four variables (marketing, knowledge, learning tendency and entrepreneurial inclination). These variables are predicted to be the most influential in determining whether a person will adopt mobile banking. Both internal and external environmental variables are included, as they provide a better understanding of the reasons why a person intends to use e-finance services. The focus of the conceptual framework is on the intention to adopt mobile banking to help understand the behavioural patterns of an e-finance technological innovation. The framework is premised on the social cognitive theory, which encompasses a broad overview of environmental drivers that affect adoption rates of technology. The social cognitive theory also stresses the importance of people's environments, which encourage them to learn new e-finance innovation methods that rely on their predisposition to entrepreneurial behaviour.

E-finance companies focus much of their marketing efforts on mobile banking services as a way to entice people to use this technology. Marketing in the form of word of mouth, television and advertisements can showcase mobile banking as an alternative to traditional banking mediums. The more knowledge people have about e-finance alternatives like mobile banking, the more likely they will become aware of increased opportunities to use this technology. The recognition of opportunities helps people to learn about new e-finance services through their tendency to focus on banking initiatives.

A seminal paper by Bandura and Adams (1977) highlighted that people's behavioural intentions are not always predicted by their knowledge about opportunities. Rather, the focus, which can be influenced by experience, for most people is on determining the best possible outcome based on the information available to them (Godding and Glasgow, 1985).

Often people will learn about technology through their knowledge about other peoples' experiences with an innovation (Mizerski, 1982). This knowledge is influenced by the learning tendency of people to acquire information about e-finance services like mobile banking. A person's learning tendency will involve processing information and knowledge about mobile banking in an attempt to understand e-finance services. In addition, as mobile banking incorporates entrepreneurial e-finance services, it links older ways of conducting banking with newer and more time-efficient ways to process information. The entrepreneurial nature of many e-finance services like mobile banking enables people to concentrate on their innovative, proactive and risk taking abilities to learn about technological adoptions. The role of entrepreneurship, learning, knowledge and marketing will now be discussed.

4 Propositions

4.1 Entrepreneurial inclination

People have different levels and appetites for entrepreneurial e-finance services, depending on their background and experience. The entrepreneurial inclination of people involves their ability to acquire new ideas that involve innovation at the inception stage of the introduction of e-finance services into the market. Technological innovations in e-finance require people to be proactive to understand mobile banking services. Entrepreneurship involves people focusing on being proactive, but at the same time involving their risk taking and innovative capabilities (Lee and Peterson, 2000). Entrepreneurial people are considered to have decision making processes and practices that enable them to be adopters of e-finance services. People with entrepreneurial characteristics are associated with having individuality and being adopters of new innovations (Miller, 1983). A person with a high entrepreneurial inclination will be more likely to adopt new e-finance services like mobile banking. Entrepreneurial inclination involves the process of engaging in e-finance service innovations. People's decisions to adopt new technologies are related to their entrepreneurial decision-making style, method and practice. A person more predisposed to entrepreneurial e-finance processes and technologies is more likely to adopt mobile banking e-finance services. Therefore, this leads to the next proposition being proposed:

Proposition 1: The higher people's level of entrepreneurial inclination is towards mobile banking, the more likely they will adopt mobile banking as an e-finance service.

4.2 Learning tendency

People's learning tendency is the emphasis they place on creating and using knowledge (Sinkula et al., 1997). Knowledge is an important determinant of how quickly a person learns about new things and advances in technology. Tsang (1999) stressed the role that

knowledge has in impacting a person's learning appetite, which leads to the discovery of further opportunities. People's willingness to adopt technology and their ability to foster learning involve acquiring, disseminating and transferring knowledge. People will modify their behaviour to reflect new insights from this knowledge, thereby expanding their existing knowledge base to spur new behaviour. People learn through a variety of mechanisms that are influenced by innate characteristics they have, such as intelligence and business acumen. It is crucial to encourage people to increase their ability to learn about new technologies like mobile banking. A person's learning tendency emphasises the role of knowledge in examining how new ways of thinking about technological innovations can occur. Therefore, the next proposition is:

Proposition 2: The higher people's level of learning tendency towards mobile banking is, the more likely they will adopt mobile banking as an e-finance service.

4.3 Knowledge

There are a number of knowledge sources about mobile banking that influence a person's behaviour. One of the most important knowledge sources is a person's social network with experience in technological innovations, which helps them develop behavioural expectations about the product (Ratten and Ratten, 2007). People's social network is influenced by a number of environmental factors, including their age and occupation, which help determine future behaviour (Herr et al., 1991). McCoy et al. (2007) in a study on mobile commerce found that people's knowledge about a technology is dependent on what country they are from. For example, in countries with a reputation for being technology intensive, the people are usually more willing to get knowledge about technological innovations. Takac (1997) highlighted how, for some technologies like mobile phones, their adoption rate is determined by the collective usage of the mobile network in a specific country or region. Countries that have better access to the internet enable their citizens to be more likely to have knowledge about mobile banking as a service that can enhance their lifestyle. Therefore, the next proposition is:

Proposition 3: The higher a person's level of knowledge about mobile banking, the more likely they will adopt mobile banking as an e-finance service.

4.4 Marketing

The marketing of mobile banking is likely to be effective at changing a person's perceptions of technological innovation. This is due to marketing acting as an information source to promote the usefulness of the technology (Snowden et al., 2006). Marketing encourages people to use mobile banking by showcasing the products features. Some financial institutions focus on marketing mobile banking as a secure, cheap and efficient way to conduct e-finance services (Laukkanen, 2007). Prior research on marketing suggests that a person's behaviour will change as a result of messages contained in marketing campaigns (Mizerski, 1982). Behavioural changes can be in the form of consumption habits that filter through information shared by a person's social group, including family, friends and colleagues (Ratten and Ratten, 2007). Moreover, a person's behaviour can change through the imitation or copying of behaviour seen in marketing campaigns, such as how a technology can be used (Sheth et al., 1999).

A person's adoption decision is often influenced by emulating other technology users (McCormick and Martinko, 2004). This comes from marketing programs conducted online, in television advertisements and in the print media (Rogers, 1995). Marketing acts as a source of exposure about different ways to use a technology, which influences a person's behaviour and intention to adopt an innovation (O'Bannon, 2001). Marketing technology innovations has been a common way for companies to develop their market base (Kaufman, 1991). People gain access to knowledge about technological products and services, which is transferred through the dissemination of information (Rice and Bennet, 1998). Information can be acquired through spoken and written communication mechanisms that people rely on to keep them up to date with changes occurring in their environment (Celsi et al., 1993). In addition, information is transmitted by other people through social networks that often act as a free marketing device for e-finance companies (Ratten, 2008). This leads to the next proposition:

Proposition 5: The higher a person's exposure to marketing about mobile banking, the more likely they will adopt mobile banking as an e-finance service.

5 Managerial and academic implications

The conceptual framework presented in this paper has numerous managerial and academic implications. Managers of financial institutions need to focus on how they can market the entrepreneurial nature of mobile banking as a useful technological innovation people can adopt. Marketing campaigns can be encouraged by those managers that focus on the ease and efficient nature of mobile banking as an opportunity to learn about a new technological innovation. The banking industry can capitalise on the knowledge inherent in e-finance innovations like mobile banking to devote more resources to encourage people to learn about the usages of this technology.

There are numerous academic implications stemming from this paper. The popularity of e-finance services and particularly mobile banking in developing countries like India and Bangladesh requires more attention (see Andoh-Baidoo et al., 2010). It would be interesting to compare the behavioural intentions of people to adopt mobile banking in rural and city areas to further understand the linkage between entrepreneurship and learning. As many low income individuals use mobile banking because of geographic location in remote areas, it is crucial for banks to understand how they can develop more products and services that focus on this large population demographic. Moreover, as many individuals adopt mobile banking as a cost-effective way of managing their money it would be useful to understand the evolution of mobile phones into mobile banking devices.

6 Future studies and recommendations

This paper has some limitations that need to be taken into account in future research studies. This paper has presented a conceptual framework that is exploratory in nature and represents an initial attempt to construct the antecedents to the adoption of mobile banking. As this paper highlighted the importance of a person's entrepreneurial and learning role in combination with the knowledge and marketing conducted in mobile

banking, future steps need to be taken to ensure that the propositions derived from the literature can be empirically tested. As there are limitations, it is important that future research continue on examining mobile banking adoption behaviour.

Future studies should analyse the propositions stated in this paper in a large sample that can be extended longitudinally to monitor the progress and development of mobile banking. Additionally, the different uses of mobile banking offer a way of measuring the effectiveness of a technological innovation in the way it has been adopted. More work is required in capturing best practice behaviour of mobile banking services to enable financial companies to replicate and develop better testing of how technological innovations progress in the marketplace. Finally, more research that combines academic insight with practical significance is required to further integrate the literature on e-finance, entrepreneurship and knowledge management. Case studies could be conducted on different international financial institutions that have implemented mobile banking to understand in more detail how e-finance services are used by people worldwide.

As the conceptual framework of this paper was based on the social cognitive theory, other theories such as the resource-based view or institutional economics could be used to support the entrepreneurial aspect of the study. Alternatively, learning theories such as social learning could be integrated with the social cognitive theory to further analyse e-finance applications such as mobile banking. More research and empirical inquiry could be conducted on how mobile banking facilitates other types of e-finance such as bill payments and transaction history to see the financial impact of mobile banking. Case studies could be conducted that study the differences between the adoption of mobile banking in different age groups and types of banking customers, such as individuals and small businesses. These case studies could include interviews and focus groups with customers who are at different stages of the mobile banking adoption process.

7 Conclusion

The benefit of the propositions stated in this paper is to understand how e-finance operates through mobile banking mechanisms. Managers of banks and businesses that have mobile banking services can target the most appropriate ways to help people learn more about the advantages of mobile banking. This paper has focused on an individual's intention to adopt mobile banking as an e-finance service. The literature on mobile banking and e-finance was reviewed, which led to the social cognitive theory being the theoretical framework for this paper. A conceptual framework for understanding the antecedents of a person adopting mobile banking was devised that led to the development of a number of propositions.

References

Ajzen, I. (1985) 'From intentions to actions: a theory of planned behaviour', in Kuhl, J. and Beckman, J. (Eds.): *Action-Control: From Cognition to Behavior*, Springer, Heidelberg, pp.11–39.

Ajzen, I. and Fishbein, M. (1980) *Understanding Attitudes and Predicting Social Behavior*, Prentice-Hall, Englewood Cliffs, NJ.

Andoh-Baidoo, F.K., Willarreal, M.A., Liu, L.C. and Wuddah-Martey, P. (2010) 'An exploratory study to examine the success of electronic banking systems implementation in a developing nation', *International Journal of Electronic Finance*, Vol. 4, No. 3, pp.221–235.

Aungst, S.G. and Wilson, D.T. (2005) 'A primer for navigating the shoals of applying wireless technology to marketing problems', *The Journal of Business and Industrial Marketing*, Vol. 20, Nos. 2–3, pp.59–69.

Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*, Prentice-Hall, New Jersey.

Bandura, A. and Adams, N. (1977) 'Analysis of self-efficacy theory of behavioral change', *Cognitive Theory and Research*, Vol. 1, pp.287–310.

Beneke, J. (2011) 'Towards a conceptual model: a path analysis of fundamental relationships affecting mobile advertising effectiveness', *International Journal of Electronic Finance*, Vol. 5, No. 1, pp.15–31.

Birkinshaw, J. and Mol, M. (2006) 'How management innovation happens', *MIT Sloan Management Review*, Vol. 47, No. 4, pp.81–89.

Bolt, M., Killough, L. and Koh, H. (2001) 'Testing the interaction effects of task complexity in computer training using the social cognitive model', *Decision Sciences*, Vol. 32, No. 1, pp.1–19.

Cantisani, A. (2006) 'Technological innovation processes revisited', *Technovation*, Vol. 26, pp.1294–1301.

Celsi, R., Rose, R. and Leigh, T. (1993) 'An exploration of high-risk leisure consumption through skydiving', *Journal of Consumer Research*, Vol. 20, No. 6, pp.1–23.

Chan, S. and Lu, M. (2004) 'Understanding internet banking adoption and use behavior: a Hong Kong perspective', *Journal of Global Information Management*, Vol. 12, No. 3, pp.21–43.

Chung, N. and Kwon, S.J. (2009) 'The effect of customers mobile experience and technical support on the intention to use mobile banking', *Cyberpsychology & Behavior*, Vol. 12 No. 5, pp.539–543.

Davis, F. (1989) 'Perceived usefulness, perceived ease of use and user acceptance of information technology', *MIS Quarterly*, Vol. 13, No. 3, pp.319–339.

Fishbein, M. and Ajzen, I. (1975) *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*, Addison-Wesley, Reading, MA.

Godding, P. and Glasgow, R. (1985) 'Self-efficacy and outcome expectations as predictors of controlled smoking status', *Cognitive Therapy and Research*, Vol. 9, pp.585–90.

Hall, S., Whitmire, R. and Knight, E. (1999) 'Using internet for retail access: banks found lagging', *Journal of Retail Banking Services*, Vol. 21, No. 1, pp.51–55.

Herr, P., Kardes, F. and Kim, J. (1991) 'Effects of word-of-mouth and product-attribute information on persuasion', *Journal of Consumer Research*, Vol. 17, No. 3, pp.458–462.

Holland, N. (2008) 'The state of mobile banking', *Bank Systems & Technology*, Vol. 45, No. 1, p.27.

Kaufman, C. (1991) 'Coupon use in ethnic markets: implications from a retail perspective', *Journal of Consumer Marketing*, Vol. 8, No. 1, pp.41–51.

Kaur, M., Nyangosi, R. and Arora, J.S. (2011) 'Empirical study of mapping adaptation antecedents of electronic money', *International Journal of Electronic Finance*, Vol. 5, No. 1, pp.1–14.

Kock, N. (2004) 'The psychobiological model: towards a new theory of computer-mediated communication based on Darwinian evolution', *Organization Science*, Vol. 15, No. 3, pp.327–348.

Koh, J., Wang, B., Liu, L.C. and Koong, K.S. (2010) 'Aysmmetric responses, risk seeking and internet bubble', *International Journal of Electronic Finance*, Vol. 4, No. 4, pp.323–342.

LaRose, R. and Eastin, M.S. (2004) 'A social cognitive theory of internet users and gratifications: toward a new model of media attendance', *Journal of Broadcasting & Electronic Media*, Vol. 48, No. 3, pp.358–372.

Laukkanen, T. (2007) 'Customer preferred channel attributes in multi-channel electronic banking', *International Journal of Retail & Distribution Management*, Vol. 35, No. 5, pp.393–412.

Laukkanen, T. and Kiviniemi, V. (2010) 'The role of information in mobile banking resistance', *International Journal of Bank Marketing*, Vol. 28, No. 5, pp.372–388

Lee, S.M. and Peterson, S.J. (2000) 'Culture, entrepreneurial orientation, and global competitiveness', *Journal of World Business*, Vol. 35, No. 4, pp.401–416.

Li, Y., Liu, Y. and Ren, F. (2007) 'Product innovation and process innovation in SOEs: evidence from the Chinese transition', *Journal of Technology Transfer*, Vol. 32, pp.63–85.

Lingfen, C., Woods, D., Curran, K. and Doherty, J. (2010) 'Mobile development environments for electronic finance', *International Journal of Electronic Finance*, Vol. 4, No. 2, pp.99–119.

Lu, J., Yu, C., Liu, C. and Yao, J. (2003) 'Technology acceptance model for wireless internet, internet research', *Electronic Networking Applications and Policy*, Vol. 13, No. 3, pp.206–222.

Mathieson, K. (1991) 'Predicting user intentions: comparing the technology acceptance model with the theory of planned behavior', *Information Systems Research*, Vol. 2, No. 3, pp.173–91.

McCormick, M.J. and Martinko, M.J. (2004) 'Identifying leader social cognitions: integrating the causal reasoning perspective into social cognitive theory', *Journal of Leadership and Organizational Studies*, Vol. 10, No. 4, pp.2–11.

McCoy, S., Galletta, D.F. and King, W.R. (2007) 'Applying TAM across cultures: the need for caution', *European Journal of Information Systems*, Vol. 16, pp.81–90.

Miller, D. (1983) 'The correlates of entrepreneurship in three types of firms', *Management Science*, Vol. 29, No. 7, pp.770–791.

Mizerski, R. (1982) 'An attribution explanation of the disproportionate influence of unfavorable information', *Journal of Consumer Research*, Vol. 9, No. 12, pp.301–310.

O'Bannon, G. (2001) 'Managing our future: the generation X factor', *Public Personnel Management*, Vol. 30, No. 1, pp.95–109.

Pincus, J. (2004) 'The consequences of unmet needs: the evolving role of motivation in consumer research', *Journal of Consumer Behavior*, Vol. 3, No. 4, pp.375–387.

Ratten, V. (2008) 'Technological innovations in the m-commerce industry: a theoretical framework of mobile banking intentions', *Journal of High Technology Management Research*, Vol. 18, No. 2, pp.111–117.

Ratten, V. (2009) 'Adoption of technological innovations in the m-commerce industry', *International Journal of Technology Marketing*, Vol. 4, No. 4, pp.355–367.

Ratten, V. and Ratten, H. (2007) 'Social cognitive theory in technological innovation', *European Journal of Innovation Management*, Vol. 10, No. 1, pp.90–108.

Rice, B. and Bennet, R. (1998) 'The relationship between brand usage and advertising tracking measurements: international findings', *Journal of Advertising Research*, Vol. 38, No. 3, pp.58–66.

Rogers, E. (1995) *Diffusion of Innovations*, 4th ed., The Free Press of Glencoe, New York.

Rycroft, R.W. (2006) 'Time and technological innovation: implications for public policy', *Technology in Society*, Vol. 28, No. 3, pp.281–301.

Sheth, J., Mittal, B. and Newman, B. (1999) *Consumer Behavior: Consumer Behavior and Beyond*, Dryden Press, Texas.

Sinkula, J.M., Baker, W. and Noordewier, T.G. (1997) 'A framework for market-based organisational learning: linking values, knowledge and behavior', *Journal of the Academy of Marketing Science*, Vol. 25, No. 4, Fall, pp.305–318.

Snowden, S., Spafford, J., Michaelides, R. and Hopkins, J. (2006) 'Technology acceptance and m-commerce in an operational environment', *Journal of Enterprise Information Management*, Vol. 19, No. 5, pp.525–539.

Takac, P. (1997) 'The electronic bank-adding value without taking over', *Australian Banker*, Vol. 111, No. 4, pp.136–137.

Tong, X. (2010) 'A cross-national investigation of an extended technology acceptance model in the online shopping context', *International Journal of Retail & Distribution Management*, Vol. 38, No. 10, pp.742–759.

Tsang, E.W.K. (1999) 'A preliminary typology of learning in international strategic alliances', *Journal of World Business*, Vol. 34, No. 3, pp.211–229.

Venkatesh, V. and Davis, F.D. (1996) 'A model of the antecedents of perceived ease of use: development and test', *Decision Sciences*, Vol. 27, No. 3, pp.451–482.

Wood, R. and Bandura, A. (1989) 'Social cognitive theory of organizational management', *Academy of Management Review*, Vol. 14, No. 3, pp.363–84.

Wymbs, C. (2000) 'How e-commerce is transforming and internationalising service industries', *Journal of Services Marketing*, Vol. 14, No. 6, pp.463–478.

Bibliography

Bandura, A. (2001) 'Social cognitive theory: an agentic perspective', *Annual Review of Psychology*, Vol. 52, pp.1–26.

Barnett, N., Hodges, S. and Wiltshire, M. (2000) 'M-commerce: an operators manual', *McKinsey Quarterly*, Vol. 3, pp.163–173.

Guan, J.C., Mok, C.K., Yam, R.C.M., Chin, K.S. and Pun, K.F. (2006) 'Technology transfer and innovation performance: evidence from Chinese firms', *Technological Forecasting and Social Change*, Vol. 73, pp.666–678.

Harris, P., Rettie, R. and Kwan, C.C. (2005) 'Adoption and usage of m-commerce: a cross-cultural comparison of Hong Kong and the United Kingdom', *Journal of Electronic Commerce Research*, Vol. 6, No. 3, pp.210–224.

Henry, J. and Stone, R. (1999) 'The impacts of end-user gender, education, performance, and system use on computer self-efficacy and outcome expectancy', *Southern Business Review*, Vol. 25, No. 1, pp.10–16.

Salo, J. and Karjaluoto, H. (2007) 'Mobile games as an advertising medium: towards a new research agenda', *Innovative Marketing*, Vol. 3, No. 1, pp.71–82.

Seitz, J. and Stickel, E. (1998) 'Internet banking-an overview', *Journal of Internet Banking and Commerce*, Vol. 3, No. 1, Available http://www.arraydev.com/commerce/JIBC/9801-8.htm