

**CUSTOMER PERSPECTIVE ON ONLINE MOBILE BANKING IN INDIA - AN EMPIRICAL STUDY**

Dr. P. S. Aithal\*.

K. V. M. Varambally\*\*.

\*Srinivas Institute of Management Studies, Pandeshwar, Mangalore - 575 001, INDIA,  
psaithal@srinivasgroup.com

\*\*School of Management, Manipal University, Manipal, INDIA

E-mail: kvm\_varambally@hotmail.com

**ABSTRACT**

Advancement of technology has brought in radical changes in banking industry. Computerization and networking, core banking, automatic teller machine connecting any customer of any bank in any branch with a customer in any other bank in the country has made banks customer friendly. One of the latest introduction is mobile banking. A country with highest number of mobile users, it has enormous potential in changing the outlook of banking in India and reaching the remote village in any part of the country. It is argued that online mobile banking system has close correspondence with ideal banking system. This paper discusses the objectives, methodology, advantages and benefits of online mobile banking facility offered by the banks to the customers. A detailed review of literature is done on development of online banking in different developed and developing countries including India to analyse the gap of online banking in India. The significance of online mobile banking in India are discussed by considering seven native reasons namely (1) Essentiality of mobile device rather than luxurious, (2) Continuously decreased price of mobile devices, (3) Low usage cost, (4) Availability of services in rural areas, (5) Integration of various service applications within a device, (6) Improved willingness to use mobile devices, and (7) Improved economic conditions of the people. An empirical study on customer acceptance of mobile banking is carried out by developing six hypotheses. Factors affecting the actual use is studies through focus group method as the qualitative data collection instrument. The factors identified in this study include demography of customers, personal banking experience & incentives, technology experience, psychology & culture, and security & trust. The hypotheses are tested using primary data collected through questionnaire method, data are analyzed and the results are discussed.

Keywords: Customer perspective, mobile banking, empirical study.

## Introduction:

The convergence of the Internet and mobile networks has created new opportunities and applications. Considering mobile business only as an extension of the traditional internet can lead to missing out on unique and differentiable qualities for new value added opportunities.

Advancement of technology has brought in radical changes in banking industry. Computerization and networking, core banking, automatic teller machine connecting any customer of any bank in any branch with a customer in any other bank in the country has made banks customer friendly. One of the latest introduction is mobile banking. A country with highest number of mobile users, it has enormous potential in changing the outlook of banking in India and reaching the remotous village in any part of the country [Furst K, et. al., (1998) & Jayawardhena, and Foley (2000)].

Mobile banking is considered as potentially one of the most value added and important mobile services available. The technological changes in mobile networks, mobile devices, and the innovative attributes of mobile internet, advances in the theoretical framework of innovation in services allowed to develop a customer centric analysis of m-banking value proposition. It is argued that online mobile banking system has close correspondence with ideal banking system.

The critical factors in the diffusion/penetration of m-Banking, reasons for failure, and further prospects of success depends on various factors and are different for different countries. Recently, some of the Indian banks started online mobile banking channel as new distribution

channel, but the acceptance of mobile banking services by the customers is not encouraging. It is necessary to find the reason for slow penetration of this value added financial service in India [Karjaluo et. al.,(2002) & Pyun et. al. (2002)].

The objectives of this study are to analyze the significance of mobile business activity in terms of their usability, opportunities, and challenges in financial sector with special emphasis on banking activities in chosen cities in Karnataka State of India, to identify the target customers for mobile banking based on the demographic characteristics of users, and to compare attitudes of users and non-users with respect to number of factors such as technology experience, security & trust, psychology & culture, prior personal banking experience, and incentives from banks [Aithal P. S. (2008)].

## Literature Review:

There are numerous papers that sought to study the growth of online banking internationally, for instance, Sathye (1997) surveyed the status of Internet banking in Australia. The study found that only two of the 52 banks started Internet banking services at that time. However still there was a lot of room for Internet banking to expand in Australia. Booz Allen and Hamilton Inc. (1997) conducted a global survey covering 386 retail and corporate banking institutions in 42

countries to assess the strategic impact of Internet banking on the financial service industry. According to the study, there is a huge perception gap between North American/European banks and Japanese banks regarding the future of Internet banking. North American and European banks expect Internet banking to become the most important retail channel within 10 years, but Japanese banks expect traditional branches to remain the most important channel. The study also indicates the rapid growth potential of Internet banking. Many of the banks that responded have plans to upgrade the functionality of their Internet service offerings. Eglund (1998) conducted the first important study that estimated the number of U.S. banks offering Internet banking and analyzed the structure and performance characteristics of these banks. They have found no evidence of major differences in the performance of the group of banks offering Internet banking activities compared to those that do not offer such services.

Furst et al., (1998) a U.S. based study group found out a significant shift by consumers and businesses to electronic payments. In response to developments in electronic payments and remote banking, banks have greatly increased their investment in technology, particularly in retail banking. The gains from technological advancements in banking and payments are likely to be substantial, both from the point of view of individual financial institutions and economy-wide. In this environment, banks should review and, if necessary, adjust their risk management practices in tandem with upgrading their technology activities. Diniz (1998) reported a survey of web sites of banks in USA. It was found that most of the bank websites were basic and intermediate level. No website was found to be of advanced level. Furst et al., (2000) presented data on the number of national banks in U.S. offering Internet banking and the products and services being offered. Only 20 percent of national banks offered Internet banking in the third quarter of 1999. However, as a group, these Internet banks accounted for almost 90 percent of national banking system assets, Banks in all size categories and 84 percent of small deposit accounts.

Sullivan (2000) found that Internet banks in 10th Federal Reserve District incurred higher expenses but also generated higher fee income and concluded that the measures of profitability for Internet banks are similar to those of the non-Internet banks. Guru et al., (2000) examined the various electronic channels utilized by the local Malaysian banks and also accessed the consumers reactions to these delivery channels. It was found that Internet banking was nearly absent in Malaysian banks due to lack of adequate legal framework and security concerns. However over 60 percent of the respondents were having Internet access at home and thus represented a positive indication for PC based and Internet banking in future.

De Young (2001a) investigated the performance of Internet-only banks and thrifts in the U.S. The empirical analysis found that the newly chartered Internet-only banks substantially underperform the established banks at first, but these performance gaps systematically diminish over time as new banks grow older and larger. The study suggested that the Internet-only

banking model may be feasible when executed efficiently. De Young (2001b) found that the average one year old Internet-only bank earned significantly lower profits than the average one year old branching bank, due to low business volumes and high non-interest expenses. It supports the proposition regarding the Internet-only banks, fast growth but low (or no) profits.

Jasimuddin (2001) found that within one year of the introduction of Internet service in Saudi Arabia, Saudi banks had at least decided on their Internet presence. 73 per cent of the Saudi banks possessed their own web sites and 25 per cent of the web sites were offering full services over Internet. The banks viewed the Internet as a key alternative delivery channel. Furst et al., (2002) provided a comparative study of Internet and non-Internet banks in U.S. and found that institutions with Internet banking outperformed non-Internet banks in profitability. Also, banks in all categories of size offering Internet banking tended to rely less on interest yielding activities and deposits than non-Internet banks do. Koedrabruen et al., (2002) investigated, designed and developed an Internet based retail banking prototype that meets the requirements of the Thai customers. It found that more than half of the sample Internet users in Thailand are very interested in using the Internet banking services. The main features needed are balance inquiry, bill payment, fund transfer, business information, and payment for goods purchased. The prototype was then developed and validated. The survey from the executives of four Thai banks revealed that there was a potential growth for retail Internet banking in Thailand.

Corrocher (2002) investigated the determinants of the adoption of Internet technology for the provision of banking services in the Italian context and also studied the relationship between the Internet banking and the traditional banking activity, in order to understand if these two systems of financial services delivery are perceived as substitutes or complements by the banks. From the results of the empirical analysis, banks seem to perceive Internet banking as a substitute for the existing branching structure, although there is also some evidence that banks providing innovative financial services are more inclined to adopt the innovation than traditional banks.

Hasan (2002) found that online home banking has emerged as a significant strategy for banks to attract customers. Almost 75 percent of the Italian banks have adopted some form of Internet banking during the period 1993-2000. It also found that the higher likelihood of adopting active Internet banking activities is by larger banks, banks with higher involvement in off-balance sheet activities, past performance and higher branching network. Janice et al., (2002) based on interviews with four banks in Hong Kong noted that banks view the Internet as being a supplementary distribution channel for their products and services in addition to other forms of distribution channels such as Automated Teller Machines (ATMs), phones, mobile phones and bank branches. Basic transactions and securities trading are the most popular types of operations that customers carry out in Internet banking. Lustsik (2003) based on the survey of experts of e-banking in Estonian banks found that Estonia has achieved significant success in implementation



of e-banking and also on the top of the list in emerging countries. All the major banks are developing e-business as one of the core strategies for future development.

Awamleh et al., (2003) found that banks in Jordan are not fully utilizing concepts and applications of web banking. In comparison to developed international markets, it is fair to say that this sector is largely undeveloped. Indeed, only two banks offered limited number of services through their web. The major challenge facing further development of web banking in Jordan is, for example, the high cost of telecommunication. Another element is the non-availability of information technologies, packages, solutions, and human resources, which facilitates optimum use of technology. The study revealed that Jordanian banks have been successful in the introductory phase of web banking. However Jordanian banks are required to

move towards web banking usage with a view to conducting real financial transactions and improving electronic customer relations. Mari Suoranta et al., (2003) focused on studying diffusion and adopters of mobile banking services. The paper explores some contradictory empirical findings drawn from a mobile banking survey. The results provide an indication of the characteristics of potential subsequent adopters of mobile banking, and of differences between user segments. It also commented on the influence of certain demographic characteristics and the preferred communication mode of customers on the adoption and future usage of mobile banking services.

JukkaRiivari, (2005) looks at how and why financial organisations across Europe are beginning to take advantage of mobile services and in particular mobile banking as a powerful new marketing tool to build long-lasting and mutually rewarding relationships with new and existing customers. Examples show how European financial organisations are using mobile banking to improve their customer service and relationships, to reinforce their brand by literally placing it in their customer's pocket and to reduce their costs. Mari Suoranta et al., (2005) reviews recent technological advances in banking and forces that will drive or inhibit mobile banking services adoption. Drawing on the relevant literature and empirical implications of the study, the paper proposes a model that conceptualizes different affecting factors in electronic banking environment, and particularly in mobile banking. Irwin et al., (2005) explored the factors that affect Internet and Cell Phone banking adoption in South Africa. The paper also compare the differences in the perception of Internet banking and cell phone banking and the influence factors. The findings indicate that both the adoption intent and the perception of Internet banking users differ markedly from cell phone banking users.

The exploratory study of Vijayan et al., (2005) seeks to examine the consumers' intention to adopt themselves to multimedia banking based on three commonly used theories known as Technology Acceptance Theories (TAT). Even though multimedia banking is well available in the market banks are generally facing immense challenges in attracting visitors to their websites.

As much of these phenomena were blamed on the traditional brick and mortar type of banking, knowledge and understanding of this challenge can help bankers to fish in more clients into this new wave of banking. At the same time to stay competitive in the market banks have to develop a framework that incorporates latest technological aspects of multimedia banking. Lee et al., (2007) identified factors influencing the adoption of mobile banking service. The paper focused on perceived risk, perceived usefulness, and trust in mobile banking adoption. This study modified the concept of a technology acceptance model (TAM) within the context of mobile banking. It introduced “perceived risk” and “trust” in a proposed model to reflect consumers’ needs to use mobile banking. Evidence for a composite perceived risk variable was identified. We found the strong inhibiting effect of perceived risk on trust. It is found that Trust also had stronger influence on the adoption behavior of mobile banking than perceived usefulness, which was used as an important variable in the traditional TAM variables. There are a series of papers that observe that mobile banking has revolutionized the banking industry and the banking industry is under pressure to offer new products and services. However, to succeed in today’s electronic markets a strategic and focused approach is required.

In the Indian context many publications throw light over the importance of Internet banking and also its prospects for the Indian banking industry. However these papers don’t identify key differences between Internet banks and non-Internet banks. Unnithan et al., (2001) studied the drivers for change in the evolution of the banking sector, and the move towards electronic banking by focusing on two economies Australia and India. The paper found that Australia is a country with Internet ready infrastructure as far as telecommunication, secure protocols, PC

penetration and consumers literacy is concerned. India, by comparison, is overwhelmed by weak infrastructure, low PC penetration, developing security protocols and consumer reluctance in rural sector. Although many major banks have started offering Internet banking services, the slow pace will continue until the critical mass is achieved for PC, Internet connections and telephones. However, the upsurge of IT professionals with growing demands is pressuring the government and bureaucracy in the country to support and develop new initiatives for a faster

spread of Internet Banking. The economy is classically the catch-up one, trying to develop and catch up with leading economies. Rao et al., (2003) provided a theoretical analysis of Internet banking in India and found that as compared to banks abroad, Indian banks offering online services still have a long way to go. For online banking to reach a critical mass, there has to be sufficient number of users and the sufficient infrastructure in place. Agarwal et al., (2003) explored the role of e-banking in e-democracy. With the development of asynchronous technologies and secured electronic transaction technologies, more banks and departments were using Internet for transactional and information medium. Initiatives such as E-SEVA and FSC’s are the milestones towards achieving comprehensive e-governance. Balwinder Singh et al., (2004) made a survey of commercial banks websites, on the number of commercial banks that

offer Internet banking in India and on the products and services they offer. It investigates the profile of commercial banks that offer Internet banking, using univariate statistical analysis, relative to other commercial banks with respect to profitability, cost efficiency, and other characteristics. By the end of first quarter, 2004, differences between Internet and non-Internet banks had begun to emerge in funding, in sources of income and expenditures and in measures of performance. It was also found that the profitability and offering of Internet banking does not have any significant correlation. Sakkthivel, (2006), conducted an extensive primary research in Bangalore, India (Silicon Valley of India) in order to identify the willingness of Internet users to buy different services over Internet. The paper aims at providing a specific focus to identify the impact of demographics in influencing Indian Internet users in consuming different services online. The outcomes would help the corporate world to understand the importance of demographics on online purchase which could be adopted and deployed for better use. Internet banking is fast becoming popular in India. However, it is still in its evolutionary stage. Now almost all the banks operating in India are having their websites but only a few banks provide transactional Internet banking (Mookerji, 1998, Pegu, 2000, Gupta, 1999, and Dasgupta, 2002).

### **Significance of Mobile Business in Financial Sector:**

#### **Penetration of Mobile Usage in India**

In India, the growth of mobile plateaus is at around 13,00,000 new subscribers every month. India had 14.17 million mobile phone subscribers by May 2003, about 102.8 percent more than the year 2003 and as of end October 2004, the total number of mobile subscribers in the country was 44.51 million as compared to 43.96 million fixed line subscribers. It is also noted that the GSM industry continued to maintain its dominance in the mobile market accounting for 78per cent of India's total mobile subscribers. Mobile phone users are grown to over 160 million by the end of the year 2006 and 220 million by the end of the year 2007. In November 2014 it has reached 964 million subscribers in India. This is due to the following seven reasons :

#### ***Essentiality of mobile device rather than luxurious :***

The tight emotional attachment with the family members and friends, Indian citizens like to keep continuous contact with each other at any where any time. This attitude of Indian people is supported by the advent of less cost mobile communication technology and becoming popular in upper as well as middle class people.

#### ***Continuously decreased price of mobile devices :***

The price of mobile devices is continuously decreasing year by year and is now affordable to common people in India. In addition, the technology of mobile device is improving such as increase in screen size, improved bandwidth and internet accessibility.

***Low usage cost :***

Due to high competition between mobile service providers and globalization of business, the cost per call is very small and is further decreasing substantially.

***Availability of services in rural areas :***

Due to decreased cost of mobile equipments and communication services, rural people also attracted towards the usage of mobile services. Moreover, the competition between mobile service providers and hence decreased usage cost also attracted the middle class people in rural areas. Also, the additional bundled services like mobile banking, internet access facility using mobile device and mobile commerce attracted educated people in rural area which caused further penetration of mobile usage in India.

***Integration of various service applications within a device :***

The bundling of various additional services like, video camera, free SMS, broad band Internet access facility at nominal charges, Downloading video games, weather report, Alarm, date and time, calculator, hot news, online banking facilities, online purchasing of various products and services attracting people to use mobile devices and services.

***Improved willingness to use mobile devices :***

The attitude of the people towards the usage of mobile devices for their daily applications is changing and the willingness of the people especially youngsters towards usage of mobile devices is increasing. More and more people in urban and rural places are attracted to the advantages of mobile communication technology and willing to use them in their daily life.

***Improved economic conditions of the people :***

Such an extremely high penetration rate of mobile devices, especially mobile phones coincidences applications other than communication between people, which include mobile financial applications such as mobile banking and mobile payments. This is also due to the fact that users considered their mobile phone as a personal trusted device making it to an integral part of their lives and more and more of these devices became Internet-enabled, which is suitable for banking applications.

Cell-phone firms in India get ready to harvest the high growth potential of mobile phone market. With subscriber addition drying up in older cell-phone markets in Western Europe and North America, the bigger players in the mobile phone industry are turning to emerging markets – India and China to keep growth rates high. World leaders Nokia and Motorola, who accounts for more than 51per cent of the phones sold in the World today, continue to bring out cheaper and cheaper



models in the market with basic features like voice, SMS and mobile banking at around Rs. 1000. Another player, Philips, less dominant in handset market but which accounts for almost 15 per cent of the chipset business has also a plan to bring out Cell-phones under Rs. 1000.

### **Factors affecting the Customers Acceptance of Mobile Banking:**

The information obtained in this study can assist banks in determining a strategic direction to take with regard to enhance their mobile banking activities. The retail banking customer has very different needs than the corporate customer. The purpose of the qualitative phase is to gain insight into how consumers value and evaluate the mobile banking as a channel of financial transaction and as a source of banking information. The qualitative data collection instrument chosen is the focus group [Aithal P. S. (2008)]. Four focus groups, each comprising of six young adults, are conducted. Group 1 comprised of 3 males/3 females, Group 2 consists of 2 males/4 females, and Group 3 consists of 4 males/2 females. Participants are chosen from the population of Business studies students at Srinivas Institute of Management Studies, Mangalore. A model on Factors affecting the acceptance of mobile banking services for actual use, is developed through Focus group interaction as shown in fig. 1.

### **Empirical Test on the Factors Affecting the Actual Usage**

To support the model shown in Fig. 1, we have developed certain hypotheses and to test the hypotheses and the model, we have carried out a customer's survey using the Questionnaire [Aithal P. S. (2008)].

#### **1. Customers' Demographics**

The effect of demographics has been found to be a significant determinant of behavior in various studies concerning electronic banking. High income, relatively young age, and good education have been found explaining the acceptance of electronic banking. In addition, a typical electronic banking user has been identified as a high involvement person belonging to the upper middle class or in parts as a member of the career-orientated upper middle class (Roemer and Buhl, 1996, Jayawardhena and Foley, 2000).

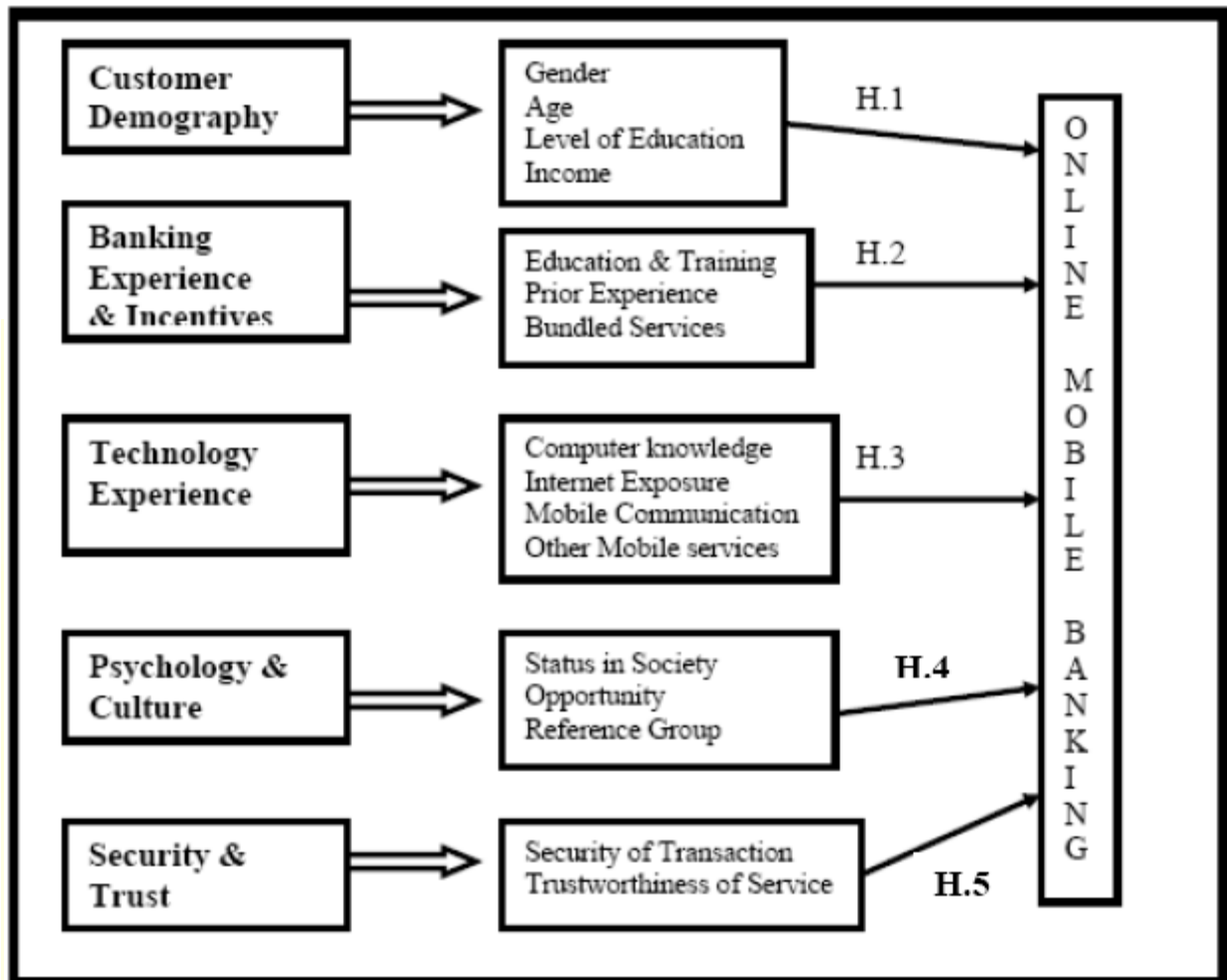


Figure 1 : Factors affecting the actual usage : Conceptual model of online mobile banking used in this study.

The technology acceptance literature points a strong relationship between age and the acceptance of new technologies, [e.g. Gattiker, (1992), Harrison et al., (1992)]. Older customers are found to have problems with new technologies, and hence, are expected to have negative attitudes towards innovations. Trocchia and Janda (2000), for instance, indicate that many older consumers possess more negative intention to change. However, they argue that person's overall perception of technology affects more than the age.

Gender has also been suggested as a factor of mobile banking adoption. Some studies argue that the mobile usage and internet is male dominated. In Finland the research counts that 45 percent of the Internet users are female (Statistics Finland, 2000). We are interested in examining whether demographic variables such as age, education, profession, and household income have

an influence on mobile banking usage. The adoption and use of mobile banking channel depends on the personal profile of the users' Gender, age, level of education, Household Income and social class. Hence we hypothesize that :

**H1 : There is significant association between adoption and usage of mobile banking channel and personal profile of the users.**

## 2. Personal banking experience and Incentives

Consumer behavior research has also studied the relationship between a person's experiences onto his/her behavior. In general, beliefs and attitudes are largely the result of personal experiences about a given object (e.g. Fishbein and Ajzen, 1975). The satisfied bank customers have more positive perceptions also about mobile banking and, thus, are more likely to move online. A dissatisfied branch office customer may also try mobile banking, but only a satisfied customers adopt mobile banking as their regular bill payment mode. By providing education about new channel and providing training about the usage of new channel will certainly decreases the fear of using new channel. Once the customers are exposed to new channel, they will be comfortable to use it and based on simplicity, usefulness and comparative cost efficiency they will be stimulated by new channel and adapt it for their regular transactions. Similarly, if the new channel has bundled services and service content compared to traditional branch banking then it has better attraction.

Based on the observation four propositions are developed.

1. People already using traditional banking are potential customers for new channel.
2. Proper training and education from the bank increases the usage of new channel.
3. Potential customers who are allowed to experiment an innovation will face more comfortable with it and are more likely to adapt it.
4. Bundled services and Increasing the service content through new channel have positive effect.

Hence by proper training and education by the banks, Customers of traditional banking can be converted into online mobile banking customers. Based on these propositions, we hypothesize that :

**H2 : There is significant association between adoption and usage of mobile banking channel and the banking experience of the customers.**

## 3. Technology experience

Prior technology experience, especially prior computer experience or mobile communication experience and/or internet usage experience have been found to impact consumers' beliefs about related systems and information technology (DeLone, 1988 & Igarria et al., 1995). Au et al. (2000) extended this idea to the observation that the more experience consumer has about technology, the better will he/she understand new technologies and their ramifications. Thus, consumer's familiarity with technologies in general facilitates his/her appreciation of the potential added value which is inherent in a technology. Trocchia and Janda (2000) introduce this logic to the realm of the Internet by arguing that consumers' adoption rate of the Internet is associated with their past experiences with the technologies.

Non-users' negative experiences are suggested to have a great impact on their perceptions about the Internet. This logic is in line with the classic attitude theories of Fishbein and Ajzen (1975) who claim that the more positive the person's past experience about an object is, the more positive beliefs he will hold about it. As a result, the positive beliefs create positive perceptions. It should be highlighted that some prior experience with mobile device has a positive influence on the adoption of new banking channels, since the consumer acquires skill in usage and communication using such device [Dholakia and Uusitalo (2002) & Korgankor and Moschis (1987)]. Hirschman (1980) noted that understanding of the characteristics and operation of a new device is needed before it can be adopted. In the context of M-banking, it is to be expected that consumers with more experience of usage of mobile devices should be potential candidates for adopting online mobile banking. Based on the observation four propositions are developed.

1. Negative attitude of customer to use new technology based services prohibits the new channel usage.
2. Fear of fraud and mis-transaction decreases customer attitude of usage of new financial channels.
3. Lack of guidance in using mobile devices for financial transactions has negative effect.
4. Prior Mobile phone usage experience has positive influence on adoption of online Mobile banking channel.

Prior Mobile phone usage experience has positive influence on adoption of online Mobile banking channel. Based on these propositions, we hypothesize that :

**H3 : There is significant association between adoption and usage of mobile banking channel and the technology experience of the users like mobile phone and internet experience.**

#### 4. Psychology and Culture



Traditionally, all commerce has depended on trust, and that includes which is seen as complementary to traditional commerce. Although trust is of major importance and most people want it, they are wary of using the Internet technologies available for secure e-commerce transactions. Consumer behavior literature also suggests that reference groups, such as a social reference group, may impact on person's behavior (Fishbein and Ajzen, 1975). Two competing influences have been identified on the relationship between subjective norm and behavior: conformity and dissension (Snyder and Fromkin, 1977; Baumeister, 1982; Guerin, 1986; Simonson and Nowlis, 2000). Conformity is the result of people trying to conform to a subjective norm, thereby avoiding criticism and rejection. The research literature shows support for the role of culture on behavioral intention. For example, Mathieson (1991) shows that behavioral control influences intention to use an information system. A positive relationship between control and intentions is also found in Taylor and Todd (1995), who examine users in a computer resources center, and Pavlou (2002) in e-commerce behavior. Overall, there is strong theoretical and empirical support for the role of perceived behavioral control on behavioral intentions. Applied to the context of online transaction intentions, behavioral control should have a positive effect on such intentions since consumers would not have fears of fraud in online financial transactions. In sum, perceived behavioral control is likely to reduce barriers to the adoption of m-business (Pavlou, 2002).

Cultural differences between India and other developed countries are also relevant to perceived behavior control. These qualities are translated into the long-term orientation dimension, which also includes personal steadiness and stability. A longterm orientation means that people feel free to put off making a decision until they are comfortable with its ramifications. In essence, this gives such people more control over their actions. In contrast to India, the developed countries ranks low on long-term orientation. Therefore, we would expect Indians to demand more control of their online financial transactions through mobile devices than other developed country customers, and rely on this control in their online transaction behavior.

The research literature shows support for the role of subjective norm on behavioral intentions. For example, in a cross-sectional comparison of pre- and post-adoption of information technology use, Karahanna et al. (1999) found that top management, supervisors, and peers significantly influenced adoption intention for both potential technology adopters and actual users. In addition, they found that MIS staff and friends are important influences for potential adopters, while computer specialists played a significant role for actual users. It is expected that subjective norm will have an influence on the intentions of customers to engage in online mobile financial transactions. Subjective norm can be decomposed into (a) societal norm and (b) social influence. Societal norm refers to adhering to the larger societal fashion (large circle of influence), while social influence reflects adhering to opinions from family, friends, and peers (small circle of influence). India and the other developed countries share important cultural

differences with respect to societal norm and social influence. The consumption of banking services may be influenced by several reference groups of the customer such as the personnel of the bank and traditional ones such as friends and family. We hypothesize that reference groups do influence the adoption of mobile banking, and modify the hypothesis with the statement that even if mobile banking usage may be initiated by education and training provided by banking personnel, the continuance of the use of mobile banking depends more on other factors, mainly reference groups and customer's perception about technology in general. Based on the observation four propositions are developed.

1. Use of new electronic channel for financial transaction improves the customer status in the society.
2. More the bundled services provided by the banks, more the channel is used.
3. Lack of opportunities (like service area, mobile device etc) to use new channel will decrease the usage of such service channel.
4. Reference groups influence positively.

Human nature of testing new innovation, reference group influence, and status in the society, has positive effect in the usage of new electronic channel. Based on these propositions, we hypothesize that :

**H4 : There is significant association between Human nature of testing new innovation, reference group influence and status in the society and the usage of new online mobile banking channel.**

### **5. Security challenges and Trust**

One of the most significant challenges of online mobile banking has been consumers' security concerns about mobile banking. Security has been identified as one of the biggest barriers for the uptake of online banking [see e.g. Sathye, (1999). Mattila's (2001, p.129-133)] empirical study points out that Finnish Internet banking customers do not pay excessive attention to security concerns. For both developed and developing countries, consumers are of the perception that deception and risk of fraud and loss constituted one of the most important causes of the secure online financial transactions. Security and trustworthiness of usage of service is most important factor and has positive effect while switching to new service channel.

**H5 : There is significant association between Security and trustworthiness of the usage of service and user attitude to switching to new online banking channel.**

Based on empirical study of collecting 400 primary data and its statistical analysis we realized that all the above hypotheses are significant [Aithal P. S. (2008)].

### **Findings of Customers Perspective Study:**

1. Based on Focus group interaction, a new conceptual model on penetration of new technological innovation to the society is developed and is named as Theory of Customers Stimulation through Education and Training (TCSET).
2. The TCSET model is applied to customer's perspective on adoption of mobile banking service and the model is tested by means of empirical study.
3. A conceptual model is developed to determine the factors affecting the customer's decision on adoption of mobile banking. The model is tested using empirical study.
4. It is found that the awareness and training on mobile banking usage based on usefulness, cost of transaction, and easy of use, changes the customers attitude and view on usage of mobile banking services.
5. It is also found that the security aspects of financial transaction have major roll in customer's perceived decision on adopting mobile banking for actual use.
6. The various factors such as demographical profile of users, earlier banking experience, technology experience, psychology and culture, and the security challenges and trust have substantial role in customers view while adopting mobile banking channel.
7. The study identified that the enhanced security and banks actions to improve the customers trust on this channel encourages the adoptability.

### **Conclusion:**

This study investigated evaluated factors that are significant in determining the satisfaction of customers using mobile banking. Banks in India do not use their websites strategically to improve customer relationship or to add real value. For instance, if banks want more of their customers to use mobile banking, they will need to provide more value add services than the ones provided by ATMs or phone banking. The study identified the factors that are significant for internet banking customer satisfaction. Security of transactions and convenience contribute significantly to satisfaction of internet banking customers. Banks while advertising their mobile banking services should emphasize these points. In the case of new users of the mobile banking service, banks should also concentrate on the independence aspect of this service. Customers can be encouraged to take advantage of online banking by providing them with incentives. For

example, successful online applications of frequent flyer programs in the airline industry may be a useful benchmarking exercise for mobile banking.

The study identified the factors that are significance for mobile banking penetration and customer acceptance. It is observed that the prior banking experience, education & training on usage, and benefits of mobile banking have substantial effect on acceptance of mobile banking transactions by Indian customers. In addition, the security and incentives by the banks have also significant affect on acceptance & usage of banking services over mobile phone. The concern of customers on security of banking transaction is supported by the figures given in response to a question in Parliament of India on March 4, 2008, the total number of Banking frauds have gone up from 12,374 in 2005 (amounting Rs. 1,385.91 crores) to 21,687 in 2006 (amounting Rs. 1,200.87 crores) in 2006, and to 22,280 in 2007 (amounting Rs. 1,077.84 crores). As per RBI a total of Rs 24,828 crore was involved in 29,653 cases of fraud detected in India's nationalised banks between 2009-10 and 2012-13. Overall, the amount lost to fraud in the banking sector quadrupled from Rs 2,038 crore in 2009-10 to Rs 8,646 crore in 2012-13. As per latest report of RBI, between April to December, 2014, public sector banks in India incurred losses to the tune of Rs 11,022 crore due to 2,100 cases of fraud. These studies reveals that proper education and training on availability and usage of mobile banking services channel is required in India to attract more customers towards usage of this new channel for their financial transactions along with other factors like technology experience, security & trust, psychology & culture, prior personal banking experience, and incentives from banks, studies in the model. The study also points out the requirement of new, comprehensive mobile business model for secured payment from the customers bank accounts.

In the study, it is found that the proper education and training on usage of mobile banking services has substantial effect on attracting more customers to use this new distribution channel. The study comes to the conclusion that Mobile Banking, as an interesting application in Mobile business, is winning the acceptance of the customers and enjoys sufficient demand in future days. Banks are seeing themselves increasingly forced to include Mobile Banking in their product portfolios to avoid negative differentiation against their competitors. Apart from this strategic relevance, there are other financial incentives, too. Their actual scope however depends, amongst others, on the product portfolio and the customer structure of individual banks. The study also reveal that proper education and training should be provided on availability and usage of mobile banking services to the Customers by the banks in terms of its importance, convenience and negligible cost.



## REFERENCES

1. Agarwal, N., Agarwal, R., Sharma, P. and Sherry, A. M. (2003), Ebanking for comprehensive EDemocracy: An Indian Discernment, *Journal of Internet Banking and Commerce*, Vol. 8, No. 1, June.
2. Aithal P. S. (2008) Ph.D. Thesis on "Mobile Business Services in Karnataka with special reference to Financial Sector" Manipal University, April, 2008.
3. Au, A. K. and Enderwick, P. (2000), 'A cognitive model on attitude towards technology adoption', *Journal of Managerial Psychology*, Vol.15 No.4, pp. 266-282.
4. Awamleh R, Evans J and Mahate A. (2003), Internet Banking in Emerging Markets The Case of Jordan - A Note, *Journal of Internet Banking and Commerce*, Vol. 8, No. 1, June.
5. Balwinder Singh, and PoojaMalhotra,(2004) Adoption of Internet Banking: An Empirical Investigation of Indian Banking Sector, *Journal of Internet Banking and Commerce*, July 2004, vol. 9, no. 2.
6. Baumeister, R.F. (1982), 'A self-presentational view of social phenomena', *Psychological bulletin*, Vol.91 No.1, pp. 326.
7. Booz-Allen & Hamilton, Inc. (1997)."Booz-Allen's Worldwide Survey Revealed A Huge Perception Gap Between Japanese And American/European Banks Regarding Internet Banking."
8. Corrocher, N. (2002), Does Internet banking substitute traditional banking? Empirical evidence from Italy, Working Paper, CESPRI, No. 134, November.
9. Dasgupta, P. (2002), Future of E banking in India, available at [www.projectshub.com](http://www.projectshub.com) December, accessed as on August 16, 2003.
10. DeLone, W.H. (1988), 'Determinants of success for computer usage in small business', *MIS Quarterly*, Vol.12 No.1, pp.51-61.
11. DeYoung, R (2001a), Learning-by-Doing, Scale Efficiencies, and Financial Performance at Internet-Only Banks, Working Paper 2001-06, Federal Reserve Bank of Chicago, September.
12. DeYoung, R (2001b), The Financial Performance of Pure Play Internet Banks, *Economic Perspectives* 25(1): 60-75, Federal Reserve Bank of Chicago.
13. Dholakia, R. and O. Uusitalo, (2002) "Switching to Electronic Stores: Consumer Characteristics and the Perception of Shopping Benefits", *International Journal of Retail and Distribution Management*, Vol.30, No.10, pp. 459-469.
14. Diniz, Eduardo (1998), "Web banking in USA" *Journal of Internet Banking and Commerce*, Vol.3, No.2, June.
15. Eglund, Kori L., Karen Furst, Daniel E. Nolle, Douglas Robertson (1998). Banking over the Internet, *Quarterly Journal*, Vol. 17, No. 4, Office of Comptroller of the Currency, December.

16. Fishbein, M and Ajzen, I., (1975), 'Belief, Attitude, Intention and Behaviour: An Introduction to Theory and Research', Addison-Wesley, Reading , MA.
17. Fishbein, M. and Ajzen, I. (1975), Belief, attitude, intention, and behavior: an introduction to theory and research, Addison-Wesley, Reading, MA.
18. Furst K, Lang W. W. and Nolle E. Daniel (1998), Technological Innovation in Banking and Payments: Industry Trends and Implications for Banks, Office of the Comptroller of the Currency, Quarterly Journal, Vol. 17, No. 3, September.
19. Furst K, Lang W. W. and Nolle E. Daniel (1998), Technological Innovation in Banking and Payments: Industry Trends and Implications for Banks, Office of the Comptroller of the Currency, Quarterly Journal, Vol. 17, No. 3, September.
20. Furst, K; Lang, W., William and Nolle, E., Daniel (2000), Who Offers Internet Banking? Office of the Comptroller of the Currency, Quarterly Journal, Vol. 19, No. 2, June.
21. Furst, K; Lang, W., William and Nolle, E., Daniel (2002). Internet Banking: Developments and Prospects, Working Paper, Center for Information Policy Research, Harvard University, April.
22. Gattiker, U.E., ed. (1992), Technology-mediated communication, New York: W. De Gruyter.
23. Guerin, B. (1986), 'Mere presence effects in humans: a review', Journal of Experimental Social Psychology, Vol.22 No.1, pp. 38-77.
24. Gupta, D. (1999), Internet Banking: Where does India Stand? Journal of Contemporary Management, Volume 2, No. 1, December.
25. Guru, B., Vaithilingam, S., Ismail, N. and Prasad, R. (2000). Electronic Banking in Malaysia: A Note on Evolution of Services and Consumer Reactions. Journal of Internet Banking and Commerce, Volume 5, No. 1, June.
26. Harrison, A.W. and Rainer, R.K. (1992), 'The influence of individual differences on skill in enduser computing', Journal of Management Information Systems, Vol.9, No.1, pp. 93-111.
27. Hasan, I., (2002). Do Internet Activities Add Value? The Italian Bank Experience, Working Paper, Federal Reserve Bank of Atlanta, New York University.
28. Hirschman, E., (1980) "Innovativeness, novelty seeking and consumer creativity", Journal of Consumer Research, Vol.7, No. 3, pp. 283-295.
29. Igarria, M., Guimaraes, T. and Davis, G.B. (1995), 'Testing the determinants of microcomputer usage via a structural equation model', Journal of Management Information Systems, Vol.11 No.4, pp.87-114.
30. Irwin Brown, and AlemayehuMolla, (2005), Determinants of Internet and Cell Phone Banking Adoption in South Africa, Journal of Internet Banking and Commerce JIBC, Vol. 10, 1.
31. Janice, David and Dennis (2002), Click and Mortar of Retail Banking A Case Study in Hong Kong, Nanyang Business School, Nanyang Technological University.

32. Jasimuddin, Sajjad M. (2001), "Saudi Arabian Banks on the Web" *Journal of Internet Banking and Commerce*, Vol.6, No.1, May.
33. Jayawardhena, C. and Foley, P. (2000), 'Changes in the banking sector - the case of Internet banking in the UK', *Internet Research: Electronic Networking Applications and Policy*, Vol.10 No.1, pp.19-30.
34. JukkaRiivari, (2005) Mobile banking: A powerful new marketing and CRM tool for financial services companies all over Europe, *Journal of Financial Services Marketing*, Vol. 10, 1 pp. 11–20.
35. Karahanna, E., D. W. Straub and N. L. Chervany, (1999) "Information Technology Adoption Across Time: A Cross-Sectional Comparison of Pre-Adoption and Post-Adoption Beliefs," *MIS Quarterly*, Vol. 23, No. 2, pp. 183-213, June.
36. Karjaluoto, H., Mattila, M. and Pentto, T. (2002), "Factors underlying attitude formation towards online banking in Finland", *International Journal of Banking Marketing*, Vol. 20 No. 6, pp. 261-72.
37. Koedrabruen, P. and Raviwongse R. (2002), A Prototype of a Retail Internet Banking for Thai Customers, *ScuolaSuperioreGuglielmo Reiss Romoli (SSGRR)*, May 31.
38. Korgaonkar, P. and G. Moschis, (1987) "Consumer adoption of videotext services", *Journal of Direct Marketing*, Vol.1, pp. 63-71.
39. Lee K. S., HyungSeok Lee, and Sang Yong Kim, (2007) Factors Influencing the Adoption Behavior of Mobile Banking: A South Korean perspective, *Journal of Internet Banking and Commerce*, August 2007, Vol. 12, No. 2, Page 1-9.
40. Lustsik, O.( 2003), E-Banking in Estonia: Reasons and Benefits of Rapid Growth, *Kroon & Economy*, No. 3.
41. Mari Suoranta, and MinnaMattila, (2003) Mobile banking and consumer behaviour: New insights into the diffusion pattern, *Journal of Financial Services Marketing* Vol. 8, 4, pp. 354–366.
42. Mari Suoranta, Mattila, M. and Munnukka, J. (2005) 'Technology-based services: a study on the drivers and inhibitors of mobile banking', *Int. J. Management and Decision Making*, Vol. 6, No. 1, pp. 33–46.
43. Mathieson, K., (1991), 'Predicting user intentions: Comparing the technology acceptance model with theory of planned behavior', *Information Systems Research* , Vol. 2 , No. 2, pp. 173-191.
44. Mattila, M. (2001), 'Essays on Consumers in the Dawn of Interactive banking', Dissertation, ERPainoKy, Lievestuore.
45. Mookerji, N. (1998), Internet Banking Still in Evolutionary Stage, at [www.financialexpress.com/fe/daily/19980714/19555264.html](http://www.financialexpress.com/fe/daily/19980714/19555264.html), July 14, accessed as on August 22, 2003.

46. Pavlou, P.A. (2002), "What Drives Electronic Commerce? A Theory of Planned Behavior Perspective," Best Paper Proceedings of the Academy of Management Conference, Denver, CO, August 2002.
47. Pegu, R. (2000), Net-Banking is Fast Becoming Popular, The Week, June 25, 2000.
48. Pyun, C., Scaggs, L. and Nam, K. (2002), "Internet banking in the US, Japan, and Europe", Multinational Business Review, Fall, pp. 73-81.
49. Rao, G. R. and Prathima, K. (2003), Internet Banking in India, Mondaq Business Briefing, April 11.
50. Roemer, M. and Buhl, H.U. (1996), 'Das Web als Alternative zur Bankfiliale: Gestaltung Innovativer IKS für das Direktbanking', Wirtschaftsinformatik, Vol.6, pp. 565-577.
51. Sakkthivel, A. M., (2006), Impact of Demographics on the Consumption of Different Services Online in India, Journal of Internet Banking and Commerce, December 2006, vol. 11, no. 3.
52. Sathye, M. (1997), 'Adoption of Internet banking by Australian consumers: an empirical investigation', International Journal of Bank Marketing, Vol.17 No.7, pp. 324-334.
53. Sathye, M. (1999), 'Adoption of Internet banking by Australian consumers: an empirical investigation', International Journal of Bank Marketing, Vol.17 No.7, pp. 324-334.
54. Simonson, I and Nowlis, S.M. (2000), 'The role of explanations and need for uniqueness in consumer decision making: unconventional choices based on reasons', Journal of Consumer Research, 27 (July), pp. 49-68.
55. Snyder, C. R., and Fromkin, H.L. (1977), 'Abnormality as a positive characteristic: the development and validation of a scale measuring need for uniqueness', Journal of Abnormal Psychology, Vol.86 No.5, pp. 518-527.
56. Statistics Finland (2000), On the Road to the Finnish Information Society II, University Press, Helsinki.
57. Sullivan, R.J. (2000), How Has the Adoption of Internet Banking Affected Performance and Risk at Banks? A Look at Internet Banking in the Tenth Federal Reserve District, Financial Industry Perspectives, Federal Reserve Bank of Kansas City, December.
58. Taylor, S. and P. A. Todd, (1995) "Understanding Information Technology Usage: A Test of Competing Models," Information Systems Research, Vol. 6, No. 3, pp. 144-176.
59. Trocchia, P.J. and Janda, S. (2000), 'A phenomenological investigation of Internet usage among older individuals', Journal of Consumer Marketing, Vol.17 No.7, pp. 605-616.
60. Trocchia, P.J. and Janda, S. (2000), 'A phenomenological investigation of Internet usage among older individuals', Journal of Consumer Marketing, Vol.17 No.7, pp. 605-616.
61. Unnithan, C. R. and Swatman, P. (2001), Ebanking Adaptation and Dot.Com Viability Comparison of Australian and Indian Experiences in the Banking Sector, Working Paper, School of Management Information Systems, Deakin University, No. 14.



62. Vijayan P, VignesenPerumal, BalaShanmugam, (2005), Multimedia Banking and Technology Acceptance Theories in Malaysia, Journal of Internet Banking and Commerce JIBC, Vol. 10, 1, 2005

