



MOBILE BANKING – A REVIEW

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Abstract

The smart phone revolution in India has paved way for an unprecedented growth of Mobile Commerce and Mobile banking in India. Mobile banking is already the largest channel for banking transactions but the adoption is mostly high only in some urban areas and metro cities but very low and untapped in rest of the country. In this backdrop, it is highly imperative to understand the reasons as to why some consumers are hesitating to adopt m-banking. This review paper aims to succinctly review the existing literature on Mobile banking carried out worldwide and in India. The review paper has also made an attempt to synthesize the results and highlight the factors that affect Mobile banking adoption in India and Worldwide. The review results indicate that trust, perceived cost, perceived ease of use, perceived credibility, perceived usefulness, easiness of usage, facilitating conditions and social influence are found to be important factors that influence consumers' adoption of Mobile banking. The most common usage for Mobile banking continues to be checking account balances and transferring funds.

Keywords: *Mobile Banking, Adoption, Perceived Ease of Use, Trust, Cost, Security and Privacy.*

INTRODUCTION

The smart phone revolution in India has paved way for an unprecedented growth of Mobile Commerce and Mobile Banking in India. The Mobile banking services are playing a significant role in the interactions between consumers and financial service providers. The unique feature of Mobile banking is that it enables Anywhere Anytime Banking and is the most convenient and easy way to stay connected to the bank. Banks are permitted to offer Mobile banking services (through SMS, USSD or Mobile banking application) after obtaining necessary permission from the Department of Payment & Settlement Systems, Reserve Bank of India. Mobile banking services are made available to bank customers irrespective of the mobile network. It virtually allows consumers to do all their banking activities such as obtaining financial account information, conducting financial transactions with their financial institution and allowing consumers' to transfer money and make credit card payments anywhere.

These services have recently broadened with array of options like banking transaction details, viewing of account balance, mini statement, self-transfers, third party transfer of funds, utility bill payments, ticket booking features etc. has led to a surge in Mobile banking transactions. With the advent of Mobile banking, banks have also embraced Mobile Applications popularly called as Apps. The last two years has witnessed an increase in the number of customers using the mobile for banking transactions. India stands fourth¹ worldwide, ahead of all G7 countries and the cumulative value of the banking transactions by these customers have shot up over 11-folds during the period as per the BCG consulting group's report. This report has also forecasted that by end of December 2015, \$350 billion in banking transactions and payments could flow through mobile phones, compared with about \$235 billion of total debit and credit-card transactions today. Another KPMG report has predicted that more than 25 per cent of the world's population will use Mobile banking in the next four years. Mobile banking is clearly replacing all other channels as the main portal between the bank and the consumer. Increasing smart phone adoption and initiatives such as media promotions and awareness programmes for Mobile banking has led to this uptrend.

The current mobile adoption figures are good news for the economy as well as the banks. Experts believe improved applications by banks have helped Mobile banking gain acceptance among users. According to a KPMG report on Mobile banking 2015, Mobile banking is already the largest channel for banking transactions but the adoption is mostly high only in some urban areas and metro cities but very low and untapped in rest of the country. The low penetration rate of Mobile banking in rest of the country is an indication that customers are still hesitating to accept and adopt Mobile banking services.

In this backdrop, it is highly imperative to understand the reasons as to why some consumers are hesitating to adopt Mobile banking. Numerous studies have been carried out in this direction worldwide and in India to understand Mobile banking and

¹ India stands higher than G7 in m-banking penetration, *The times of India*, Mumbai, August 11, 2015



related issues. This review paper aims to succinctly review the existing literature on Mobile banking that is empirical, descriptive and conceptual in nature carried out worldwide and in India. The review paper has also made an attempt to synthesize the results and highlight the factors that affect Mobile banking adoption in India and Worldwide. The review is based on research studies on technology, innovation, finance, banking journals, and major conferences. The recommendations made for the Indian Mobile banking service providers is based on the implications of the resulting review and the typology for future research is also outlined.

1. OBJECTIVE OF THE STUDY

The main objective of the study is to review existing literature on Mobile banking studies carried out worldwide and in India and synthesize the results to identify the directions for future research. To achieve this stated objective, this study seeks to examine peer reviewed studies that comprises of descriptive, conceptual and empirical studies.

2. SIGNIFICANCE OF THE STUDY

The findings from this research work are expected to contribute to different cohorts of population. Firstly, the study attempts to help the banks to understand the customers and customize services based on demography and geography. Secondly, the gaps that exist in the regulations can be bridged by the government to protect the interests of the consumers.

3. REVIEW OF LITERATURE

The following section reviews prior literature on this topic and the comprehensive list of references presented in this review paper will provide a framework for the young m-banking literature to researchers interested in Mobile banking and help stimulate further interest.

According to Vinayagamoorthy and Sankar (2012), Mobile banking can perform various functions like checking of account history, mini statement, access to card statements, SMS alert, checking of balance etc. with the help of mobile phones. Banks are continuously trying to increase their base by updating technology and by trying to reach every customer. Even the rural customers can get easy access to Mobile banking whenever required.

During January 2008, ICICI bank started the first mobile services in India (Mr. V. Vaidyanathan, 2008) and SMS alerts started in 2005-06 (Alpesh Patel, 2013). Almost 16.5 per cent of wireless mobile phone subscribers are using the Internet over their mobile phones. (Alpesh Patel, 2013).

According to Chugh (2014), The RBI operative guidelines indicate that only those banks which are licensed and supervised in India and have a physical presence in India will be permitted to offer Mobile banking services. The following section contains a list of studies conducted in the area of Mobile banking both worldwide and in India. The reviews are presented in a chronological order.

4.1 REVIEW OF MOBILE BANKING STUDIES WORLDWIDE

According to Delvin (1995), customers literally have very limited time for activities like visiting a bank and want a higher degree of accessibility and convenience.

According to Nsoui Saleh M. and Schaechter Andrea (2002), Even though customers benefit a lot through electronic banking, there are lots of risks such a regulatory risk, reputational risk and operational risk. Liao and Cheung (2002) found that individual expectations regarding accuracy, security, network speed, user-friendliness, and user involvement and convenience were the most important quality attributes in the perceived usefulness of Internet-based e-retail banking.

Kolodinsky, Hogarth & Hilgert (2004) in their study suggested that relative advantage, simplicity, compatibility, risk tolerance, observability and product involvement are associated with adoption in Mobile banking.

A Research by Laforet and Li (2005) on consumer attitude and adoption of Mobile banking showed there are several factors that affects and influences the consumer's attitude towards online banking. They are person's demography, individual acceptance of new technology, motivation and behavior towards different banking technologies. It has been found that prior experience of computer and new technology also influences consumer's attitudes toward online banking.



According to Mavri and Ioannou (2006), the critical factors that affect an individual's decision to use or not to use online services are age, the difficulties of using the Internet, fear of changes in banking sector due to technological development and lack of awareness and information about products and services provided to customers through electronic delivery channels. Factors such as cost of using the Internet and speed of transactions have little impact on an individual's final decision.

Amin, Hamid, Tanakinjal and Lada (2006) in their study analyzed the adoption usage of Mobile banking of the students' future willingness to use Mobile banking. 250 Questionnaires were administered in two universities. Quota sampling technique was used to select the respondents. The results indicate that attitude and expectation were the factors which are useful to predict the willingness of the under graduate students to adopt Mobile banking in the future.

A study carried out in Newzealand by Gan, Clemes, Limsogunchai & Weng (2006) indicates that perceived risk factors, the service quality, user input factors, education and employment were the determinants of consumers' choice of electronic banking and non-electronic banking channels. According to Benamati and Serva (2007), the electronic banking adoption forces consumers to consider concerns about password integrity, privacy, data encryption, hacking and the protection of personal information.

According to Clark (2008), mobile phone as a channel is capable of giving customers more low cost service options such as access to banking information, funds and making payments. Comninos (2008) recommended that consumers will only transact electronically (Online/Mobile banking) if there is security and convenience.

Yang A. S. (2009) in his empirical study investigated the factors associated with adopting and resisting Mobile banking technologies in Taiwan. Three hundred (300) students were selected for the purpose of the study using the stratified sampling technique. The primary factors associated with resistance included concerns over system configuration security and basic fees for Mobile banking web connections. The research found out that security and cost of connection to the internet was a hindrance to the adoption of Mobile banking facilities among students in Taiwan.

Riquelme and Rios (2010) examined the factors that could influence the adoption of Mobile banking usage among the current users of internet banking facilities using gender as a variable. Respondents were selected using purposive sampling technique and analysis was done using the regression model. Findings suggest that social risk, social influence and perceived usefulness are the most important factors that influence consumer intention to use and adopt Mobile banking facilities among male and the influence on each factors also differs among male users.

Lin H. F. (2011) in his research model examined the effect of knowledge based trust and innovation attributes on behavioral intention and attitude about continuing to use or adopting Mobile banking across repeat and potential customers. He conducted a survey on 368 participants out of which 191 were repeat customers and 177 were potential customers. Structural equation modeling approach was used to investigate the research model and the findings indicate that ease of use, perceived relative advantage, compatibility, integrity and competence significantly influences attitude and this in turn leads to behavioral intention to adopt (or continue-to-use) Mobile banking. Further, by using multi-group analysis with t-statistics, the results found that the experiences of attitude toward Mobile banking differ between potential and repeat customers.

Daud, Norzaidi, Ezalin and Maria (2011) in their study examined the factors that influence the adoption of Mobile banking in Malaysia using extended Technology Acceptance Model (TAM). The proposed model was empirically evaluated using the survey technique and data was collected from 300 banking users with reference to their perceptions of Mobile banking. The findings suggest that this model can predict consumer intention to use Mobile banking. Specifically, perceived credibility, perceived usefulness and awareness about Mobile banking have significant effect on user's attitude thus influence the intention toward Mobile banking.

Rangan, V. Kasturi and Lee, Katharine L., (2012) in their paper have described a case in detail the workings of two Mobile banking operators in M-PESA in Kenya and WIZZIT in South Africa. It explores the market for the unbanked and raises questions regarding the portability of the model to other countries and settings.

Cudjoe, Anim, and Nyanyofio (2015) in their study examined the determinants of Mobile banking adoption among bank customers in Ghana, with specific emphasis on Access Bank. He investigated 150 customers of access bank to find out the determinants of Mobile banking adoption in the Ghanaian banking industry. The results indicate that each factor measured



had some level of significant effect on consumer intention to adopt and use Mobile banking services provided by Access Bank. Further perceived credibility and perceived financial cost were the major factors that formed a negative behavioral pattern towards Mobile banking of Ghanaians. It also found that perceived financial cost and perceived credibility have a stronger effect on consumer intention to use and adopt Mobile banking service than perceived ease of use and perceived usefulness.

4.2. REVIEW OF MOBILE BANKING STUDIES IN INDIA

Roger's (1995) innovation diffusion model which has used attributes like compatibility, complexity, relative advantage has been used in their study. The findings indicate that compatibility, relative advantage, ease of use has a significant effect on attitude to adopt Mobile banking services. An important suggestion made by them is to reduce complexity to increase mobile adopters. The customers will have a positive belief about the relative advantage of Mobile banking only if they have a favourable attitude towards adopting Mobile banking services. According to Rao & Prathima (2003), 'Indian banks offering m-banking services still have a long way to go but there is huge potential of Mobile banking in India.

Benamati, J.S. and Serva, M.A. (2007) in their study have suggested that banks can study the profile of the customers to understand and identify who are the real customers. This will aid in understanding the factors that influence their purchasing behavior and the challenges faced by them during online transactions. Some of the determinants of consumer adoption of Mobile banking are individual acceptance of new innovation or technology, motivation, demographic profile, issues of hacking, the integrity of the password been used, data encryption and personal protection of information. They have also said that previous experience in related technology is another important factor that influences customers in developed countries.

According to Chaipoopirutana, Combs, Chatchawanwan and Viji (2009); Lin (2010) there are many challenges faced by the Indian banks like increasing the Mobile banking user database like Handset operability, Security, Scalability, Application Distribution etc. This innovative technology is very complex to accept and adopt and researches carried out indicate that these services should be made user friendly as the Indian population is not very well versed with this upcoming technology. They have also claimed that embracing of Mobile banking is 'complex' as it has the negative relation with intention to adopt Mobile banking.

Sharma and Singh (2009) in their study have found that Indian Mobile banking users are specifically more concerned about security issues like financial frauds, misuse of account, ease of use, difficulty in recollecting the codes and passwords for different transactions, software installations and updates.

Further Vyas (2009) predicts great Mobile banking potential in Indian banks as Indian banks will aim to target online banking users without regular access to internet but are very likely to own mobile devices. This report of Vital Analytics recommended huge potential of Mobile banking in India, as the study found that checking account balance is the most frequently cited reason by urban Indian customers' for using Mobile banking. This report has found that 40 million Urban Indians used their mobile phones to access their bank account balances followed by accessing last three transactions.

Financial cost is an important attribute according to Singh, Srivastava, and Srivastav (2010) as it has a negative effect on the intention to use Mobile banking. According to Astha (2010), Mobile banking is a new invention for untapped demand of the customers especially for the economically weaker section. They have suggested for Mobile banking regulation to avoid risks as regulation will reduce the risk level. Mobile banking is a part of new banking dimension i.e. branchless banking to make any bank digital which has great potential to extend the distribution of financial services to people who are not reached by traditional bank branch network.

Sadi and Noordin (2011) have studied cost as an attribute and they found out that perceived cost has negative relation with the intention to adopt Mobile banking services. This study recommends that pricing and creative promotional strategies, including cost reduction should be executed to attract more price-conscious customers.

Sudhakar A. M., Suryanarayana, (2011) in their study have said that common man's life has gone through a sea change due to mobile penetration which has in turn put a major thrust on Banking service sector of India. The status of Mobile banking in India and other countries with emphasis on data standards and security and its implication on banking sector has been discussed in detail. Further they have also said that a revolutionary approach to banking transactions is witnessed with the



launch of Mobile banking services that has created a strong connectivity between the banks and the customers in terms of minimal time and transaction cost.

V. Raja, Joe A. (2012) in their paper explored the various levels of internet banking services of banks using the secondary data. A comparison is made among the traditional banking systems with net banking. This paper has listed out the different security measures adopted by different banks.

Samudra and Phadtare (2012) in their study used the UTUAT model to examine the adoption of Mobile banking services in Pune city and have suggested that Mobile banking services should be promoted to middle level managers whose salaries are in the range of 1-6 lacs and the age group is 25-30. The reason cited in their study is; this is the most active age groups of 3G mobile. They have used five factors of UTUAT model to study the adoption of Mobile banking such as Effort expectancy, Performance expectancy, facilitating conditions, Social Influence, and Voluntariness. Facilitating conditions is also another major factor that influences Mbanking adoption in this study.

Prerna and Preeti (2012) in their study explored the barriers in adoption of Mobile banking services in Indore city. They further focused on preferred services by the Mobile banking customers and influence of demographic variable on Mobile banking service adoption. The study adopted cross section descriptive design and data collected was subject to frequency analysis, Product moment correlation and Oneway Kolmogorov-Smirnov test. Findings suggest that the major barrier in adopting Mobile banking services is customers' security concern. As far as preferred services are concerned checking the account balance is the most used service.

Goyal, Pandey and Batra (2012) in their study evaluated perceptions and opinions of urban Mobile banking users. A cross sectional descriptive design was adopted with ad-hoc quota sampling for this purpose and sample comprised of 50 Mobile banking users and 50 non-users of Ghaziabad city, India. Findings indicate that 'mobile handset operability' is an important issue in Mobile banking, due to availability of various handset models (supporting different type of technology) in the market.

According to Kuchara Varsha (2012) Convenience, security, easy to maintain banking transaction, curiosity, better rate and low service charges are major factors responsible for internet banking. The study found out that 50 per cent of respondents agreed that internet banking is convenient and is definitely a flexible way of banking and has various transaction related benefits.

Devadevan (2013), in his study identifies the mindset and analyses the security issues in Mobile banking among the banking customers in India. Primary data was collected from 65 respondents using online questionnaire in this study. Secondary data was also used from the website of Telecom Regulatory Authority of India (TRAI). The findings indicate that most of the respondents are using online banking facility from their respective banks. However around 25per cent of customers are using Mobile banking and remaining 75per cent are not. The majority of the online banking users are comfortable without using the Mobile banking facility and they are also interested to test the facility. The rapid technology development in Mobile technology like 2G, 3G, and 4G has become major challenges for banks and it was found that customers also feel there are chances of misuse in Mobile banking due to mobile handset theft.

Nitin, Vikas and Nancy (2014) explored the factors that influence the adoption behaviour of Mobile banking services by Indian consumers. This study also discusses the various steps that Mobile banking providers should take to increase their Mobile banking services user's database. The study found that trust, perceived ease of use and perceived cost are some of the important factors that influence the adoption behaviour of Mobile banking services by Indian consumers. The study further suggested that banks should create awareness about the Mobile banking services through Advertisements, Pamphlets, Demo Fares, and Campaigning etc. to create interest among them. The study also found that customers will adopt Mobile banking if they understand and find it easy to use.

Singh Shamser (2014) examined the adoption and impact of Mobile banking on customers of different banks located in Delhi. A survey opinion of 200 customers was conducted. ANOVA and Factor Analysis have been used and there were five factors identified; Security/Privacy, Reliability, Efficiency, and Responsiveness on the basis of understanding of customer's perception regarding Mobile banking. Results indicate that the demographic factors can have significant impact on the customer perception.



5. DISCUSSIONS

The review reveals how Mobile banking service has been accepted/ adopted/ experienced/ appropriated depending on their objectives. The literature not only gives us an insight in to the modality of Mobile banking transactions but also identifies numerous factors affecting consumers' adoption of Mobile banking services. Literature review has observed some important points that needs to be given due attention by the banks as these findings can help the banks to understand the customers and customize services based on demography and geography.

The adopters of Mobile banking users are highly satisfied due to reasons like availability of access to account and card statement, facilities of balance checking, checking recent transactions, ordering of cheque books, blocking of lost cards, better rate and low service charges etc. The most common usage for Mobile banking continues to be checking account balances and transferring funds. From the Mobile banking adoption studies carried out worldwide and in India, it is clearly proved that trust, perceived cost, perceived ease of use, perceived credibility, perceived usefulness, easiness of usage, facilitating conditions and social influence are found to be important factors that influence consumers' adoption of Mobile banking. It has been observed from the literature review that there is a direct causal relationship between trust and Internet banking adoption.

Self-Efficacy and Awareness of internet banking are also widely mentioned as important influencers of Mobile banking adoption by consumers. Additionally demographic variables have also been cited as important factors. The specific concerns of Mobile banking users are security issues like financial frauds, misuse of account, hacking, difficulty in recollecting the codes and passwords for different transactions, software installations and updates. It has also been observed that the experiences of attitude toward Mobile banking differ between potential and repeat customers.

6. CONCLUSION AND RECOMMENDATIONS

In the backdrop of above reviewed literature, it is evident that Mobile banking is evolving rapidly in India and worldwide and is a new era in banking, in which banks are spending considerable amount of money to make it available to their users. The review has outlined diverse findings of studies and has clearly reflected the mindset of the customers which can be used to understand the customers' expectations and customize services accordingly.

From the review it can be observed that the studies on Mobile banking have failed to address the use of m-banking applications via smart phones or tablets and its drawback. So studies can be carried out in this direction. Moreover the customers' feelings, complaints and the feedback have to be considered by banks before they take decisions on services. In addition to this, Mobile banking service provider should consciously take measures to increase the awareness about the Mobile banking services and reach out to remote villages with local language services and customer friendly banking software to reduce complexity.

Banks can also aggressively advertise their internet banking services to the consumers to help them relate it to their values, beliefs and experiences of the adopters. These measures will increase Mobile banking penetration which will further reduce the cost of banks. The process of M-PIN generation need to be simplified to make transactions simplified and reduce barriers to entry. The Mobile apps that allow the holders of crypto currencies to perform transactions have been poorly understood by the public. So the banks should educate the customers in this direction as they may prove to be the true future of Mobile banking.

It is clearly evident from the reviews that there are numerous challenges but to overcome these challenges a multi-pronged approach with concentrated involvement of all stakeholders is necessary. By harnessing the potential of mobile technology, large sections of the untapped segment can be empowered to become financially inclusive through the use of Mobile banking services. Going forward, mobile phone will in due course grow into a full-fledged virtual bank branch and ATM and with a matured ecosystem and an effective agent network transform the landscape of banking services in India.

7. SCOPE FOR FUTURE RESEARCH

The present study has made an attempt to review the existing literature on Mobile banking carried out worldwide and in India. Future direction of research that can enhance the body of knowledge is outlined below. The effect of demographic variables such as race, age, gender and culture on the usages of mobile banking can be intensively explored region wise. Including people of different age groups both from rural and urban areas can provide better results. More empirical studies on trust and risk factors can be conducted with larger sample size to penetrate mobile banking throughout the country. Thus it



can be observed that many important research areas are still unexplored and more research is required in order to elucidate various facets concerning Mobile banking in India.

REFERENCES

1. Alpesh Patel. (2013). M-Banking and M-Payments: The Next Frontier. Delhi: Deloitte.
2. Amin, H., Hamid, M.R., Tanakinjal, G.H. and Lada, S. (2006). Undergraduate Attitudes and Expectations for Mobile banking. *Journal of Internet Banking and Commerce*, 11, 15-20.
3. Ashta, A (2010). Evolution of Mobile banking Regulations. Retrieved from <http://www.arraydev.com /commerce /JIBC/0306-04.htm> accessed on 02-08-2013.
4. Benamati and Serva, (2007). Trust and Distrust in Online Banking: Their Role in Developing Countries. *Information Technology for Development*, vol. 13, no. 2, pp. 161-175.
5. Chaipooipirutana, S., Combs, H., Chatchawanwan, Y., & Vij, V. (2009). Diffusion of innovation in Asia: A study of Internet banking in Thailand and India. *Innovative Marketing*, 27-31.
6. Chugh, V. (2014). Reserve bank of India. Retrieved from RBI Website:http://www.rbi.org.in /Scripts/bs_ view content .aspx?Id=1660.
7. Clark, Adam (2008). Mobile banking & Switching. Retrieved from www.mcom.co.nz/assets/sm /163/.../ Critical Switching Events-WhitePaper.pdf.
8. Comminos, A., Esselaar, S., Ndiwalana, A., & Stork, C. (2008). Towards evidence-based ICT policy and regulation M-banking the unbanked. Retrieved from http://externo.casafira.es/aeo/pdf/english/overview_part_2_09_aeo_09.pdf
9. Cudjoe, A.G., Anim, P.A. and Nyanyofio, J.G.N.T. (2015). Determinants of Mobile banking Adoption in the Ghanaian Banking Industry: A Case of Access Bank Ghana Limited. *Journal of Computer and Communications*, 3, 1-19.
10. Daud, Norzaidi, Ezalin and Maria. (2011). Determining Critical Success Factors of Mobile banking Adoption in Malaysia, *Journal of Applied Sciences Research*, Vol. 7 Issue 9, p252.
11. Delvin. (1995). Technology and Innovation in Retail Banking Distribution. *International Journal of Bank Marketing*, vol. 13, pp.19-25.
12. Devadevan. (2013). Mobile banking in India – Issues and Challenges. *International Journal of Emerging Technology and Advanced Engineering*, Volume 3, Issue 6.
13. Gan, C., Clemes, M., Limsounchai, V., & Weng, A. (2006). A logic analysis of electronic banking in New Zealand. *International Journal of Bank Marketing*, 24 (6), 360-383.
14. Goyal, Pandey and Batra. (2012). Mobile banking in India: Practices, Challenges and Security Issues. *International Journal of Advanced Trends in Computer Science and Engineering*, Volume 1, No.2. .
15. Kuchara Varsha. (2012). A Study on Customers' perception towards Internet Banking at Ahmedabad City. *Indian journal of Research*, Vol.1, Iss. 9, pp 83-85.
16. Laforet and Li. (2005). Consumers' attitudes towards online and Mobile banking in China. *International Journal of Bank Marketing*, Vol.23, no. 5, pp. 362-380.
17. Liao and Cheung. (2002). Internet-based E-Banking and Consumer Attitudes: An Empirical Study. *Information & Management*, Vol. 39, pp. 282-295.
18. Lin, H.-F. (2011). An empirical investigation of Mobile banking adoption: The effect of innovation. *International Journal of Information Management*, 252-260.
19. Maria, R.A. (2011). Adoption of E-Banking in Romania: An Exploratory Study. 1: 785-790.
20. Mavri and Ioannou, G. (2006). Consumers' Perspectives on Online Banking Services. *International Journal of Consumer Studies*. Vol. 30, no. 6, pp. 552-560.
21. Nitin, Vikas and Nancy (2014), "A study of adoption behaviour of Mobile banking services by Indian Consumers. *International Journal of Research in Engineering & Technology*, 2: 3. 209-22
22. Nsouli Saleh M. Nad Schaechter Andrea. (2002). Challenges of the E-Banking revolution, *Finance and Development*, 39(3).
23. Prerna and Preeti. (2012). Mobile banking in India: barriers in adoption and Service preferences. *Integral Review- A Journal of Management*, 5(1), 1-7.
24. Rangan, V. Kasturi and Katharine Lee. (2012). Mobile banking for the Unbanked. Harvard Business School, Case 511-049.
25. Rao, G. R., & Prathima, K. (2003). Online banking in India. *Mondaq Business Briefing*, 11 April 2003.
26. Riquelme, H.E. and Rios, R.E. (2010). The Moderating Effect of Gender in the Adoption of Mobile banking. *The International Journal of Bank Marketing*, 28, 328-341. <http://dx.doi.org/10.1108/02652321011064872>
27. Rogers, E. M. (2003). *Diffusion of Innovations*. New York: Free Press.



28. Sadi, A., & Noordin, M. F. (2011). Factors influencing the adoption of M-commerce: An exploratory Analysis. International Conference on Industrial Engineering and Operations Management, (pp. 492-498).
29. Samudra, M., & Phadtare, M. (2012). Factors Influencing the Adoption of Mobile banking with Special Reference to Pune City. ASCI Journal of Management, 51-65.
30. Sharma, P, and Singh, P (2009). Users 'perception about Mobile banking- with special reference to Indore & around. Review of Business & Technology Research, Vol.2, 1-4.
31. Singh Shamser (2014). The Impact and Adoption of Mobile banking in Delhi. IRJBM, January - 2014 - Volume No – I, 19-31.
32. Sudhakar A. M., Suryanarayana, (2011). Emerging Mobile banking scenario and its adoption in India: a study. SRELS Journal of Information Management, Vol. 48 (1), pp. 41 - 50.
33. V. Raja, Joe A. (2012), "Global e-banking scenario and challenges in banking system", Asian Journal of Research in Banking and Finance, Vol. 2 (3), pp. 92 - 101.
34. Vaidyanathan. (2008). ICICI Bank launches iMobile: First bank in India to introduce complete. MUMBAI: ICICI Bank.
35. Vinayagamoorthy, A., & Sankar, C. (2012). Mobile banking –An Overview. Advances in Management, 5(10), 24-29.
36. Vyas, Charul (2009). Mobile banking in India - Perception and Statistics. Vital Analytics.
37. Yang, A.S. (2009) Exploring Adoption Difficulties in Mobile banking Services. Canadian Journal of Administrative Sciences, 26, 136-149. <http://dx.doi.org/10.1002/cjas.102>.