International Journal of Academic Research and Development
ISSN: 2455-4197
Impact Factor: RJIF 5.22
www.academicsjournal.com
Volume 2; Issue 6; November 2017; Page No. 305-310

Comforts and hurdles of mobile banking acceptance in Bengaluru city

[1] Dr. Ashoka ML, [2] Ramaprabha D

[1] Faculty & Research Supervisor, PG Department of Studies & Research in Commerce, University of Mysore, Manasagangotri, Mysore, Karnataka, India

[2] Research Scholar, University of Mysore, Manasagangotri, Mysore & Assistant Professor, PES Degree College, Bangalore, Karnataka, India

Abstract
The development of IT has contributed immensely to the field of mobile banking. Its usage in India shows that mostly youngster prefer m-banking with mean age of 30 which is lowest when compared with other countries in the globe. The growing number of tele-density, smart phone users and internet usage has made the banks as well non-banks to render financial services on mobile phone. Samples were drawn from Bengaluru to analyze the mobile banking usage pattern. 210 samples were distributed among mobile banking users out of which only 125 respondents were found valid for the analysis. Correlation analysis was made. Reliability test of the study was good. T-test was adopted to analyze the variables such as Perceived usefulness, perceived ease, perceived cost, perceived risk, security, trust and usage of mobile device for various services of mobile banking. The result signified that demographic factors such as gender, marital status and type of bank will not have bearing in the study of mobile banking usage. Adoption of internet banking also does not influence the mobile banking usage. As mobile banking usage is in the initial stage, education and training for adoption of m-banking is essential and ensuring financial security in the delivery channel can really pick the banking business.

Keywords: M-banking, MMID, M Pin, USSD, UPI

Introduction

The Indian demographic distribution shows that 24 to 54 year aged constitute the major population at 40.6% and their purchasing power influences the type of E-banking preference. Electronic mode of banking is an opportunity as well as a threat, but it is important to adopt it because of convenience it brings in this sector. To boost electronic transactions via internet or mobile based banking services better fraud management and security aspect is in place.

Certain key challenges exist in M- banking services such as interoperability, security, scalability, reliability and personalization of the usage of mobile phone. This necessitates for regulation and support for the growth of mobile payments and banking in India which is the key factor of success of financial Inclusion (Ravishankar 2007). The money transfer through network has reduced the cost and increased the reliability. The float earned in electronic money can also be used for countries development. Today, this socio-technical reform has become worldwide phenomenon. The theory of diffusion of Innovation developed by Rogers in 1983 and theory of planned behavior by S. Taylor and Todd in the year 1995 predicts that high risk perception in any innovation is hurdle for further adoption. However for person to person transfers across borders and between rural and urban area in m-banking there is significant increase in volume, speed and frequency where research study becomes essential.

If the mobile instrument only delivered voice data, then their use as a vehicle to deliver banking services would be limited. Most phones provide text-messaging capabilities and a growing number have a Web-enabled feature. This makes

mobile phone an ideal medium, through which banks can deliver a wide variety of services. World-wide, mobile banking has shown a rapid growth from just to begin with a transactional feature i.e. pull based SMS services to a much richer experience driven featured with customized services. The future of mobile banking is beyond imagination due to rapid growth in smartphone market in India to reach 130 million by 2018 which is 10 times greater than 2013 (KPMG, 2015).

Literature Review

1. Tai Kuei Yu, Kwoting Fang (2009) [13], this research was done in Taiwan by testing on 23 attributes of customers post adoption behavior for mobile banking services. Exploratory factor analysis for 6 factor deemed appropriate and confirmatory factor analysis for all 21 items found significant. It was concluded that 6 constructs are important for post adoption behavior analysis i.e. security, interactivity, relative advanta/ge, ease of use, interface creativity and customer satisfaction. Limitation of the study is pre-adoption behavior is not considered to obtain comparative analysis.
2. Prerna Sharma Bamoriya, Preeti Singh (2011) [9], the author empirically explored some of the issues as critical from consumers view. Those are mobile handset operability, security/privacy and standardization of services which was recommended to all stake holders as challenges in providing effective mobile banking services. It was also identified that the majority of consumers were indifferent towards the use of mobile banking compared to retail/online banking. The study cannot be generalized as the research is restricted to urban users. However it was also recommended to conduct a study from banker's perspective as a holistic study.
3. Amit P.Wadhe, Shamrao Ghodke (2013) [3], the paper attempts to know the consumer awareness and perception on mobile banking for people located in Pune city. Analysis of chi-square value showed that there is a significant impact of consumer awareness on interest to use m-banking. Usefulness and ease of use had an impact on the interest to use m-banking. The major findings of the study showed that there is awareness via informal channels among consumers which was highest between the age group of 18-25 years, many are not familiar with usage pattern of mobile banking. Significant factors were suggested to be used by stake holders to deepen the reach of mobile banking service. It was recommended to make a detailed study of the factors which will help the vast population to adopt the mobile technology for all type of banking transactions.
4. Shamsher Singh, (2014) [12], the urban population consisting of 200 customers of banks in Delhi was surveyed using convenience sampling method. Anova and factor analysis was done. Four factors safety/security, reliability, efficiency and responsiveness were found significant. The study shows that demographic factor has an impact on customer perception. Safety and security are prime concern of respondents. Consumers with high education find easy when compared to undergraduate. It was found that reliability, money transfer and completing a particular transaction were significant based on age factor. Occupation does not influence as a factor. It was recommended to provide high quality of services with available resources; this will help in customer retention and also reduce cost in acquiring new customers. Young customers, who are techy -savy can be promoted for m-banking services.
5. Nagaraju, (2015) [8], Exploratory research was done by collecting data from consumers and bankers. Chi-square test and factor analysis was made where it was found that the most important factor affecting mobile banking operations is cost, security, time and customer satisfaction. It was concluded that awareness about the mobile banking usage and familiarize the benefits of using m-banking is essential. However a cheap, reliable and secure technology development is must for mobile banking adoption to address the security problem.

Need of the study

From the Investigation of literature, it was seen that exclusive study focusing on m-banking usage and its variables in urban Karnataka is important. Since Bangalore region is the representative of the urban Karnataka, it was chosen as the study area.

Scope of the study

The present study was conducted to know whether the Mobile Banking Technology is accepted by the vast spread consumers. It aims towards the growth and development of financial services leading to cashless economy. The study would also ensure how realistic is the RBI vision of mobile banking as a tool for financial inclusion.

Objectives of the study

- To review the services of mobile banking provided by commercial banks.
- To study the impact of various demographic features on the usage of mobile banking channel.
- To measure the mobile banking factors which influence the perception of customers about mobile banking usage.

Hypothesis of the study

H01- Demographic factors has no significant impact on the mobile banking usage

H02- Factors of mobile banking will not have positive impact on the mobile banking usage

Research Methodology

The present study utilizes both primary and secondary data sources. The secondary data sources primarily consisted of the following:

- Published studies in various international and national journals, magazines and conference proceedings, those studies which deal with topics such as the adoption studies on electronic banking /mobile banking services, studies on factors affecting perception of these channels, theoretical frameworks pertaining to adoption of innovation and so on.
- Articles published in periodicals relating to the above subjects.

- Information contained in websites such as RBI website, websites of various banks in India.
- Unpublished studies pertaining to the above topics.

The primary data was collected by distributing 160 samples using structured pre-tested questionnaire through a sample survey method. Out of which 125 bank customers were found to be valid responses residing in the Bengaluru city of Karnataka.

Statistical techniques for the study

The primary data collected from the respondents were tabulated and analysed using the Statistical Package for Social Sciences (SPSS. 20). Descriptive statistics were used to know about the characteristics of the respondents. The statistical tools such as the weighted means and independent sample test were used to test the adoption levels of the mobile banking channel among various demographic categories belonging to different bank groups. The same tools were used to find the differences in the perception levels and mobile usage pertaining to the mobile banking channel among these groups. Correlation tests were used to find out the pairwise relationships between adoption and variables that influence mobile banking usage. Reliability test was also conducted.

Table 1: Measuring the perception with regard to the usage of mobile banking services in Commercial Banks

		Frequency	Percent
Region	Bengaluru	125	100
Gender	Male	87	70.11
	Female	37	29.89
Age	18-30	94	75.68
	31-45	21	16.53
	>46	10	7.79
Education	Illiterate	1	0.64
	High school	7	5.56
	Intermediate	8	6.04
	Degree	73	58.51
	Masters Degree	33	26.71
	Others	3	2.54
Marital status	Married	44	35.2
	Single	81	64.8
Occupation	Employee	47	38
	Business	21	17.01
	Profession	11	9.22
	Student	42	33.39
	Others	3	2.38
Monthly Income	<20,000	65	51.99
	21,000-40,000	40	32.27
	41,000-80,000	14	11.13
	>80,000	6	4.61
Type of Bank	Public	63	50.24
	Private	62	46.4

The respondents surveyed were from Bengaluru. Males constituted the vast majority of the sample at 70.11%. The respondents from the age group of 18 to 30 years constituted the vast majority of the sample at (75.68%). The 'single' respondents constituted majority of the sample (at 64.8%). Employees constituted the single largest category at (38%) of respondents. The respondents earning less than Rs. 20,000 per month constituted the majority of the sample at (51.99%). The respondents from public banks constituted the majority of the sample at (50.24%).

Table 2: Mobile Banking Component Analysis

		Frequency	Valid percent
Adoption of Internet Banking	Yes	115	92.21
	No	10	7.79
Usage of Internet Banking	<4 yrs.	96	81.90
	4-6 yrs.	15	12.69
	>6 yrs.	6	5.41
Frequency of using Internet Banking	Daily	20	16.92
	Weekly	51	43.65
	Monthly	46	39.42
Usage of Mobile banking	<1 year	58	46.42
	1-3 years	54	43.40
	>3 years	13	10.17
I am Using Mobile banking	Daily	19	14.94
	Weekly	54	43.40
	Monthly	52	41.65
Using Mobile banking through	Bank app	98	78.70
	Web mobile	26	20.51
	SMS	1	0.79

The vast majority of the respondents at (92.21%) stated that they have adopted Internet banking. The vast majority of respondents constituting (81.90%) of the sample stated that they have been using Internet banking for less than four years. The single largest category of the respondents constituting (43.65%) of the respondents uses Internet banking on a weekly basis. Almost half of the respondents constituting (46.42%) of the sample stated that they have been using mobile banking for less than one year. The single largest category of the respondents constituting 43.40% of the respondents uses Mobile banking on a weekly basis.

A. Measuring the perception with regard to the usage of mobile banking services in Commercial Banks

Table 3: Descriptive statistics Overall– Various Mobile Banking Factors

	N	Max	Min	Mean	Std. Dev
Perceived Usefulness	125	1	5	4.09	.59
Perceived Ease	125	1	5	3.97	.70
Perceived cost	125	1	5	3.76	.78
Perceived Risk	125	1	5	3.61	.76
Security	125	1	5	3.85	.69
Reliability /Trust	125	1	5	3.88	0.63
Using Mobile Device for various service	125	1	5	3.78	0.68

An analysis of the above table brings out that 'Perceived Usefulness' achieved the highest mean score while the 'Perceived Risk' achieved the least mean score. A business user responds that "People easily share information; they are easily trapped by hackers like personal details are revealed hence lot of risk arises."

Table 4: Correlations – Various Mobile Banking Factor

	Perceived Usefulness	Perceived Ease	Perceived cost	Perceived Risk	Security	Reliability /Trust	Using Mobile Device for various services
Perceived Usefulness	1.00						
Perceived Ease	.655**	1.00					
Perceived cost	.538**	.506**	1.00				
Perceived Risk	.164*	.174*	.275**	1.00			
Security	.513**	.449**	.356**	.13	1.00		
Reliability /Trust	.544**	.521**	.469**	.151*	.686**	1.00	
Using Mobile Device for Various Services	.250**	.215**	.193*	.01	.318**	.316**	1.00

**. Correlation is significant at the 0.01 level (1-tailed)

*. Correlation is significant at the 0.05 level (1-tailed).

An analysis from the above table signifies from the correlation analysis that when risk exists there is no relation with the other variables in the usage of mobile banking transactions. It can be analyzed that the respondents are not risk takers.

Table 5: Reliability Test

	Cronbach's Alpha	N of items
Perceived Cost	0.839	7.00
Perceived Ease of Use	0.801	2.00
Perceived Risk	0.627	5.00
Perceived Usefulness	0.747	5.00
Security	0.781	5.00
Trust	0.812	5.00
Usage of Mobile Applications	0.761	8.00

An analysis of the above table shows that there exists good reliability of the sample.

Findings of the study

The important findings which have emerged from the analysis have been summarized below:

1. Based on the mean score, the demographic profile of customers from Bengaluru constitutes the majority in the sample. Males dominate the sample population mostly with youngsters. The major population is educated with degree qualification and is unmarried. The single large categorized people are employees with income composition of less than 40,000 with more than 50% from public sector banks. Respondents with more than 90% of the sample are internet banking users with majority having frequency of less than 4 years usage experience. The mobile banking majority users in the sample are older by one year with frequency of use mostly on weekly basis.
2. An analysis of the study reveals that the time saving attribute is the most relevance factor contributed by younger generation between the age group 18-30 years.
3. The Study revealed that overall ease show a good score constituting the majority of younger generation while it can be interpreted that the older generation may find it difficult to understand.
4. Report on overall cost of m-banking shows a good score indicating cost effectiveness of mobile banking with less than 40000 income indicating the affordability by the users. The impact of transaction cost migrating from branch to mobile is 43times in branch, 13 times greater in a call center, 13 times greater than in ATM and 2 times greater than online channel (Javelin Strategy and Research, August 2015). This ensures that mobile is cost effective channel due to which the adoption rate in urban as well as rural area would increase.
5. The study revealed that perceived risk indicates that there is high risk in losing phone, followed by transaction error and fraud or misuse of accounts. Banks and manufacturers have to invest more in information technology in the security aspects of mobile banking.
6. From the point of security issue, the report of the study revealed that the valid MMID, MPIN and real time alerts is said to be satisfactory. There seems to be perception about account password as not being safe such as phishing, snoofing etc., the 'not faced any difficulty during mobile banking transaction' seem to be not so satisfactory in the minds of users because of the incomplete transactions, wrong debit, timed out error etc., which is respondent by some of the user who faced difficulty.
7. Analysis about the trust factor revealed that the mobile banking users trust the bankers with respect to providing accurate information followed by the belief that banks are honest and trust worthy. With respect to keeping the best interest in mind and showing the sincere interest in solving customer's problem the users do not feel this is true for mobile banking.
8. Familiarity in mobile device for various banking function report reveals that the more frequent usage pattern of users is buying tickets, bill payment as well as top up of mobile phone. The usage pattern for share trading and merchandise payment is comparatively less. It is also observed that occupation influences while the income and age may not influence the usage of mobile banking.
9. Evidently, there is good mean score of 4.09 for overall satisfaction in mobile banking, there is a huge scope for banking transactions to be promoted through mobile banking among users especially in metro dominated by male, who are youngsters with degree qualification, unmarried and have less than 40,000 being mostly customer of public sector bank as per the sample responses. The overall factors result showed that perceived usefulness achieved significant influence while perceived risk achieved the least significant influence and cannot be an important variable in mobile banking adoption
10. The correlation analysis showed that respondent are not

risk takers to some extent as th variable is positive and significant at 5% level while all other factors are significant at 1% level of significance.

11. Comparison of the relationship between the demographic profile mainly gender of the respondents with the mobile banking usage, it is inferred that gender do not influence the perception of mobile banking adoption for all variables.
12. Comparison of the relationship between marital status of the respondent and the mobile banking usage, shows that marital status will not influence the various mobile banking parameters.
13. Comparison of the adoption of internet banking and mobile banking factors, shows that adoption of internet banking will not influence the various mobile banking parameters.
14. Comparison of the type of bank and mobile banking usage has been compared to know any significant relationship exist and it is interpreted that type of Bank does not influences the various mobile banking parameters.

Recommendations and conclusion

In the light of outcome of the research work involving the process of testing the hypothesis, the following recommendation has been taken place.

1. 1. Demographic consideration shows that younger generation are mobile savvy and find mobile banking useful and easy. The population of India also shows that majority constitute young population, who are male and graduated with moderate level of income. Hence, government vision of digital India can be envisaged by incubation center to educate and train youngsters in companies, colleges/universities, malls, Corporation building, offices or halls. These youngsters should in-turn train family members and other elders of society.
2. The respondents find problem about connectivity issues and not availing high speed network. Education about open access of network like Jio- network of Reliance Company to customer is also essential. The socio-political influence for digitalized India and National telecoms new policy (for more than 2 Mbps) will lead to higher network quality. The USSD platform NUUP is more secured and do not have interoperability issues.
3. It is implicated that since mobile banking is in the initial adoption stage the user lacks hands on experience. Hence education and training to consumers about safe banking tips and developing demo-banking apps with graphical interface to rural as well as urban consumers is essential. Alternatively, customer guidance cell in very banks will help in assisting customer's query about usage of mobile technology and new services offered. This will increase the banking business.
4. The opinion of users about frauds or misuse of account existing with the mobile banking technology make it essential for banks to make more investment in IT infrastructure to combat security issues. Precautions should be taken to control IP spoofing risk on bank computer network. High technology standard like advanced biometric authentication, high network standards such as 3DES which requires huge investment, high standard for hardware security has to be accomplished for safe Banking. Customer service centers ensure to resolve issues within the time limit but the existence of the technical fault may not encourage the users to go for mobile banking channel. Default on the side of technical providers has to be reduced in mobile banking channel. This should make the banks to adhere to stricter third party agreements with the service/technical providers for effective mobile banking operations.
5. Mobile banking users believe banks but there seems to be an element of fear psychosis among the users. Banks should assure about the financial security and work more on upgrading software and hardware solutions. Extensive awareness through advertisement in regional languages should be promoted about fake sms, fake calls, downloading the bank app only from the right source and not to share the bank information to others as well as to bankers who will never ask bank details.

Conclusion

With the 120 million population at an annual growth rate of around 7%, it is noticed that there is no significant growth in banking access. However the progress of India can be envisaged from the emerging innovations in the modern banking system. As per World Bank, it is learnt that a 10% increase in broad band connection will lead to an increase of 1.38% in developing countries. Government vision of digital India and smart cities can be realized only by enabling digital infrastructure. Lower e-transaction fees, providing discounts and waive the service tax on cashless transaction, promoting cashless infrastructure for merchants, availability of low cost android phones, enhance government gateways like UPI an open network, BHIM a local app will certainly lead to digital based economy. Government has also come up with the implementation of JAM (Jan Dhan, Aadhar, mobile) to reach out the unbanked population as a part of financial inclusion strategy. RBI strict adherence to mobile banking guidelines is a dire need for growing security issues in digital world. The use of Arificial Intelligence, virtual reality and automation tool which is quite famous in online purchases is gaining significance but an eye should be on cutting costs and increase productivity by the mobile manufacturer. This will add to richer customer experience needful to the Gen Y consumers prompting usage of banking on small device in real time. Encouraging cashless purchases/sale by offering discount, additional discount, cash back offer and gift coupons on mobile based transactions will give further push in adoption of m-banking.

References

1. Adewoye JO. Impact of mobile banking on service delivery in the Nigerian commercial banks' International Review of Management and Business Research, retrieved from www.irmbrjournal.com, 2013; 2(2).
2. Aditya kumar Tiwari, Ratish Agarwal, Sachin Goyal. Biometric Authentication for Mobile Banking Security retrived from http://ssrn.com/abstract/2438213, 2013.
3. Amit PW, Shamrao Ghodke. To study consumer awareness & perception towards usage of mobile banking

IBMRD's Journal of Management and Research, 2013.ISSN:2277-7830.
4. Bindiya Tater, Manish Tanvar, Krishna Murari. Customer adoption of Banking technology in Private Banks of India The International Journal of Banking and Finance, 2011; 8(3):73-88.
5. Ganesha Parimalarani. Digital inclusion in India: A case of Mobile Banking International conference on technology and Business management, 2013.
6. Mbali Tshitenge. Mobile banking and financial needs of the poor: An adoption framework' Research report, University of Pretoria, 2011.
7. Mohini SS, Milind Phadtare. Factors Influencing the Adoption of Mobile banking with special reference to the Pune city ASCI Journal of Management. 2012; 42(1):51-65
8. Nagaraju. Mobile banking-perception of customers and bankers International Journal of Business and Administration Research Review, 2015; 3(9):236.
9. Prerna Sharma Bamoriya, Preeti Singh. Issues & challenges in mobile banking in India: A customers Perspective Research Journal of Finance and Accounting, retrieved from www.iiste.org, 2011; 2(2),ISSN:2222-1697.ISSN 2222-2847.
10. Ramdhony Dineshwar, Munien Steven. An Investigation on mobile banking Adoption and usage: A case study of Mauritius Proceedings of 3rd Asia-pacific Business research conference, Kaula Lumpur, 2013, 25-26.
11. Xin Luo, Han Li, Jie Zhang, JP Shim. Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: An empirical of mobile banking services' X Luo *et al.*/Decision support systems, 2010; 49:222-234.
12. Shamsher Singh. Customer perception of mobile banking: An empirical study in National Capital Region Delhi Journal of Internet Banking and Commerce, Array Development, retrieved from http://www.arraydev. com/commerce/jibc, 2014; 19(3).
13. Tai Kuei Yu, Kwoting Fang. Measuring the post adoption customer perception of mobile banking services Cyber psychology and behavior, 2009; 12(1).
14. Tiwari Rajnish, Buse Stephan, Herstatt Cornelius. Mobile Services in Banking Sector: The Role of Innovative Business Solutions in Generating Competitive Advantage, in: Proceedings of the International Research Conference on Quality, Innovation and Knowledge Management, New Delhi, 2007, 886-894.
15. Kothari CR. Research Methodology-Methods and Techniques, New Age International Publishers.
16. Krishnaswami OR, Ranganathan M. Methodology of Research in social sciences, Himalaya publishing House.
17. Deepak Chawla, Neena Sondhi. Research methodology, Vikas publication house.
18. Indian Institute of Banking and Finance, Principles of Banking, Macmillan, 4-14:298-315:323-335