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Issues & Challenges in Mobile Banking In India: A Customers' Perspective

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Abstract

Mobile banking is a revolution that is driven by the world's one of the fastest growing sectors – mobile communication technology. Like in any emerging technology, there exist barriers to the adoption of mobile banking services. This study explores the issues in mobile banking perceived critical for adoption by both mobile banking users as well as non-users. The study identified certain issues pertaining to banks, mobile handsets and telecom operators viz. mobile handset operability, security/privacy, standardization of services, customization, Downloading & installing application software and Telecom services quality. For this a descriptive design was adopted to empirically explore the selected issues. Study suggests that from consumers' perspective mobile handset operability, security/privacy and standardization of services are the critical issues. Although the research has its limitations, the implications of the results provide practical recommendations to the all concerned parties.

Key Words: Banking & Financial Services, Customer, Issues, Mobile Banking, India

1. Introduction

In India traditional branch-based banking remains the most widely adopted method of conducting banking transaction, at same time commercial banks are undergoing a rapid change majorly driven by the information & telecommunication (ITC) technology. ICICI bank pioneered in mobile banking services in India. Among public banks, Union Bank of India was first to introduce mobile banking (Ali et al. 2010). Today many commercial banks have launched mobile banking using ITC technology and now they can reach out to customers and provide them with not only general information about its services but also the opportunity of performing interactive retail banking transactions anytime, anywhere.

1.1 Concept of mobile banking

Mobile Banking refers to provision and availment of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank transactions, to administer accounts and to access customized information (Tiwari and Buse 2007). In the broader sense mobile banking as that type of execution of financial services in the course of which - within an electronic procedure - the customer uses mobile communication techniques in conjunction with mobile devices (Pousttchi and Schurig 2004).

Mobile Banking can be said to consist of three inter-related concepts viz. Mobile Accounting, Mobile Brokerage and Mobile Financial Information. Mobile Accounting is sometimes characterized as transaction-based banking services that revolve around a bank account and are availed using mobile devices. Not all Mobile Accounting services are however necessarily transaction-based. A more precise definition of Mobile Accounting would therefore characterize it as "availment of account-specific banking services of non-informational nature". Whereas Mobile Brokerage, in context of banking services, refers to intermediary services related to the bourse, e.g. selling and purchasing of stocks. Mobile Brokerage can be thus defined as transaction based mobile financial services of non-informational nature that revolve around a securities account. At last, Mobile Financial

Information refers to non-transaction based banking and financial services of informational nature. It includes subsets from both banking and financial services and is meant to provide the customer with anytime, anywhere access to information. The information may either concern the bank and securities accounts of the customer or it may be regarding market developments with relevance for that individual customer. The information may be customized on the basis of preferences given by the customer and sent with a frequency decided by him (Tiwari and Buse 2007).

1.2 Mobile banking business models

1.2.1 Bank-focused model

The bank-focused model emerges when a traditional bank uses non-traditional low-cost delivery channels to provide banking services to its existing customers. Mobile phone banking to provide certain limited banking services to banks' customers which are additive in nature. This model may be seen as a modest extension of conventional branch-based banking.

1.2.2 Bank-led model

The bank-led model offers a distinct alternative to conventional branch-based banking in that customer conducts financial transactions through mobile phones instead of at bank branches or through bank employees. This model promises the potential to substantially increase the financial services outreach by using a different delivery channel i.e. mobile phones and may be significantly cheaper than the bank-based alternatives. The bank-led model may be implemented by either using correspondent arrangements or by creating a JV between bank and non-bank mobile operator. In this model customer account relationship rests with the bank

1.2.3 Non-bank-led model

The non-bank-led model is where a bank does not come into the picture (except possibly as a safe-keeper of surplus funds) and the non-bank/mobile operator performs all the functions (Morawczynski et al. 2008).

1.3 Mobile Banking in India

Mobile phones have become an essential communication tool for almost every individual worldwide. In India, where mobile subscribers far exceed fixed line subscribers because of better mobile infrastructure in comparison to fixed line infrastructure has made mobile banking much more appealing in India today. Various players involved in providing mobile banking services whether banks, financial institutions, service providers, operators etc. are therefore expecting a potential growth in mobile banking in India (Unnithan and Swatman 2001). However, the actual mobile banking usages don't match the great number of mobile subscribers (617 mn, May 2010 source: TRAI) in the country. Reason could be various issues involved in mobile banking services like Interoperability- due to lack of mobile banking technology standards and large number of different mobile phone devices (Banzal 2010; Mas 2008; Lyman et al. 2008), Security of financial transaction – both at physical level i.e. security of mobile device and data encryption level (Sharma and Singh 2009; Astha 2009; Banzal 2010), Regulatory authority – RBI & TRAI conflicts on regulations in India (Weber 2010; Cheney 2008), Telecom service quality - network congestion, delay in SMS delivery while using any mobile banking service (Morawczynski 2008), Personalization of services – preferred language of user, standard beneficiary list, customized alerts etc. (Owens et al. 2006), Customer illiteracy – a serious issue at reading illiteracy level and technical illiteracy level (Manuel 2008), Revenue sharing basis – problem in the revenue sharing agreements between mobile service providers, banks, content providers and aggregators (Banzal 2010), Know Your Customer issue – to prevent money laundering (Hayat 2009) etc. Mobile banking users are affected by above mentioned issues directly or indirectly.

Perception of mobile banking users towards these issues and their concern will definitely affect adoption of mobile banking in India. This papers attempt to explore various mobile banking issues from users' perspective and to alert various parties involve in mobile banking services viz. mobile operators, banks, content providers, aggregators etc. about relevant issues which could become challenges for them in providing effective mobile banking services.

2. Review of the literature

Barnes and Corbitt (2003); Scornavacca and Barnes (2004) suggest that recent innovations in telecommunications have enabled the launch of new access methods for banking services, one of these is mobile banking; whereby a customer interacts with a bank via a mobile device such as a mobile phone or personal digital assistant. Karjaluoto *et al*. (2002); Rugimbana (1995) found that there is vast market potential for mobile

banking due to its always-on functionality and the option to do banking virtually any time and anywhere. Unnithan and Swatman (2001) studied the drivers for change in the evolution of the banking sector, and the move towards electronic banking including mobile banking by focusing on two economies, Australia & India and suggested strong growth potential of new banking channel in India. Clark (2008) suggests that as a Channel the mobile phone can augment the number of channels available to consumers, thereby giving consumers more low-cost self-service options by which to access funds, banking information and make payments. Mobile as a channel delivers convenience, immediacy and choice to consumers. Vyas (2009); Rao et al. (2003) suggest banks will need to expand their thinking about mobile banking beyond online banking and should start to view mobility as its own powerful and compelling delivery channel that can help them deliver to end users new value such as immediate access and additional control of personal finances. According to Vyas (2009) Banks will target non-online banking users who may lack regular access to desktop Internet but are very likely to own a mobile device. Gupta (1999); Pegu (2000); Dasgupta (2002) also affirms future of mobile banking in India in their studies. Suoranta (2003) found that the average mobile banking user is married, 25 to 34 years old, has intermediate education and average income in clerical work. She found that age and education have a major influence on the use of the mobile phone in banking services. The adoption theories assume that use of Internet banking precedes the adoption of the mobile phone in banking. However, Suoranta (2003) found that some mobile banking customers omit Internet banking adoption when adopting the mobile phone for banking actions. Polatoglu et al. (2001); Al-Ashban and Burney (2001); Karjaluoto *et al*. (2002); Black *et al*. (2002) supports findings of Suoranat in their respective studies. Mas (2008); Lyman et al. (2008) found that there are a large number of different mobile phone devices and it is a big challenge for banks to offer mobile banking solution on any type of device. Some of these devices support J2ME and others support WAP browser or only SMS; presetting a serious challenge. Hayat (2009) suggests that for a banking regulator it is important to provide adequate protection for consumers, ensure economic stability, provide interoperability of electronic systems and guarantee security of transactions and Anti-Money Laundering and Know-Your-Customer principles must also be applied to mobile payments. Comninos et al. (2008) suggest that unbanked will only transact electronically (online/mobile banking) if there is convenience and security. Sharma and Singh (2009) found that Indian mobile banking users are specially concern with security issues like financial frauds, account misuse and user friendliness issue - difficulty in remembering the different codes for different types of transaction, application software installation & updation due to lack of standardization. Banzal (2010) found that another major issue is the revenue sharing agreements between mobile service providers, banks, content providers, aggregators and other service providers like utilities, travel agencies, hotel industry, retailers etc.

3. Scope of the study

On the basis of review of existing literatures following mobile banking issues were identified which would affect adoption of mobile banking services in India and were studied from urban users' perspective:

1. Mobile handset operability
2. Security/Privacy
3. Standardization
4. Downloading & installing application software
5. Customization
6. Telecom services quality

4. Objectives of the study

1. To study the selected issues in mobile banking form urban customers' perspective.
2. To explore the perceived utility of mobile banking in comparison to retail banking and online banking among the mobile banking users and non-users.

5. Methodology

The study is aimed to evaluate perceptions and opinions of urban mobile banking users. For this a cross sectional descriptive design was adopted with ad-hoc quota sampling. Sample was comprised of 50 mobile banking users and 50 non-users in Indore city, India. Non-users were defined as individuals having bank

account but not using mobile banking. Of the total respondents 68.16 % were male and 31.84% were female. The sample was comprised of relatively young respondents. Of the total respondents students were 68.18%; remaining were working. 24.4% respondents were graduates and 75.6% were postgraduates.

Data was obtained by using structured questionnaire. Data was screened for missing values (available case method was adopted to handle missing values) and outliers. Data was further subject to normality- data was found to be normally distributed as skew index ranged from -.29 to .46 (reference absolute value 3) and kurtosis index from -.1.91 to 2.05 (reference absolute value 10). This questionnaire was analyzed for scale reliability analysis which suggests that items makeup the scale measured the same underlying constructs, as cronbach's alpha coefficient was found to be 0.764 (*Annexure 1*). At last convergent validity was confirmed as significant correlation (moderate to large, sig .05) was present between items measuring single construct.

6. Analysis & Discussion

Data was subject to Correlation analysis, Independent Samples T-test, ANNOVA, Percentile analysis.

6. 1Mobile banking users: Demographic profile

Two-tailed Pearson Correlation was conducted to evaluate the relationship between mobile banking users and demographic variables viz. age, sex, education, occupation and income. Only demographic variable had significant correlation with user was sex ($r=0.293$, $N=100$, $p<0.05$, correlation strength moderate). Thus analysis suggests that males are more inclined to use mobile banking in comparison to females.

(Table 1)

6.2 Mobile banking users: Service usages pattern

Data was further subject to Percentile Analysis which suggested that among mobile banking users majority, 87.87 were availing mobile banking services from public/govt. banks. State Bank of India was largest mobile banking service provider overall followed by Panjab National Bank. Among private banks ICICI Bank was leading in mobile banking services *(table 2)*. Percentile Analysis also suggested that majority of users were using services from less than 2 years and frequency of uses among majority of users was weekly *(table 3)*.

(Table 2)

(Table 3)

6.3 Mobile banking users: Services preference

Data related to various mobile banking services in users were interested was also subject to Percentile Analysis to explore currently most preferred services in mobile banking. Checking balance through mobile banking was most used service where as checking status of D.D. or cheque was least used.

(Chart 1)

6.4 Mobile banking issues: Overall analysis

Overall Percentile Analysis was done for the responses of mobile banking users and non-users to explore selected issues in mobile banking which may impose challenges to service providers (banks), RBI, telecom operators etc. and thus may influence success of mobile banking in India.

(Table 4)

Analysis suggested that majority of respondents i.e. 81.36% strongly agree or agree that mobile handset operability is a issue in mobile banking as different types of handsets support different types of technology leading to complexity. 64.83% respondents think that mobile banking is not secure, also data privacy is absent.

On standardization again majority 59.08 % respondents strongly agree or agree that mobile banking service standards are lacking among Indian banks which makes it difficult to do mobile banking from multiple service providers.

On the issues of download & installation of application s/w, customization (user's preferred language) and telecom service quality; majority of the respondents were either indifferent or disagree. Reason may be that study was conducted in urban area so technological aspect of application s/w, absence of local/preferred language and telecom service quality like network unavailability were not perceived as major issues.

6.5 Mobile banking issues: Users vs. non-users

One way ANOVA was applied to explore any significant difference in opinions of mobile banking users and non-users on selected issues in mobile banking. Results showed that there was no statistically significant difference in opinions of users and non-users for the selected issues *(Annexure 2)*.

(Table 5)

6.6 Mobile banking perceived utility in comparison to other channels: Overall and users vs. non-users

Percentile analysis (*Annexure 3*) suggest that majority of the respondents (53.6%) were indifferent towards perceived utility of mobile banking in comparison to retail banking and internet banking.

Further an Independent Samples T-test was conducted to explore perceived utility of mobile banking in comparison to retail banking and internet banking students of users and non-users. There was absolute no significant difference in perceived utility between users (M=2.55, SD=0.83) and non-users (M=2.55, SD=1.03; t= 0.000, p= 1.000).

7. Recommendations

Study shows '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. To resolve it service providers i.e. banks must coordinate with mobile handset manufacturers so that all handsets irrespective of manufacturer and technology (GSM or CDMA) become compatible with single mobile banking technology.

Majority customers perceived 'privacy and security' a critical issue. Here banks are advised to educate customers on this issue to raise their awareness. Especially for the customers' worries like losing money if once mobile handset is lost (substantial number of respondents worried about it). Secondly banks and telecom operators are suggested to draft comprehensive joint policy regarding security & privacy so that customers can be assured at both bank's and telecom operator's levels while doing mobile banking.

'Standardization' is another major issue as lack of standardization of mobile banking services in the country resulted in increased complexity while using mobile banking services (especially when using mobile banking services of multiple banks). For resolving this issue banks are advised to developed mobile banking standards in guidance of RBI.

Issues of 'download & installation of application s/w', 'customization' (user's preferred language) and 'telecom service quality' were not perceived critical or important. Reason may be that study was conducted in urban area so technological aspect of application s/w, absence of local/preferred language and telecom service quality like network unavailability were not perceived as major issues. But banks are well advised not to overlook above issues as these may be critical in pan India adoption of mobile banking.

8. Conclusion

Paper attempts to explore selected mobile banking issues from customers' perspective and to make recommendation to various parties involve in mobile banking services viz. banks, mobile operators, content providers, regulators on relevant issues which could become challenges for them in providing effective mobile banking services in the country. Results show that from consumers' perspective mobile handset operability, security/privacy and standardization of services are the critical issues. Majority of the customers were indifferent towards utility of mobile banking in comparison to retail banking and online banking. The study has limitation as the data were collected only form urban customers so the results can not be generalized to pan India population. In this paper we focused on issues & challenges in mobile banking in India from customers' perspective. Similar study could be conducted from service providers i.e. bankers' perspective.

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Table 1: Results of Correlation Analysis

Demographic variable	**Correlation coefficient** (N= 100, p<0.05)
Age	0.067
Sex	0.293*
Education	-0.071
Occupation	-0.076
Income	0.031

Table 2: Mobile banking Service usages pattern (a)

Bank from which availing services	**% Users**
Public Banks	87.87
1. SBI	
2. PNB	
Private Banks	6.06
1. ICICI	
2. HDFC	
Both Public & Private Banks	6.06

Table 3: Mobile banking Service usages pattern (b)

Mobile banking Users			
Time period	**% of users**	**Frequency of use**	**% of users**
Less than 6 months	39.39	Daily	24.24
6 month to 2 years	42.42	Weekly	45.45
More than 2 years	18.18	Monthly	30.3

Table 4: Analysis of Mobile banking Issues

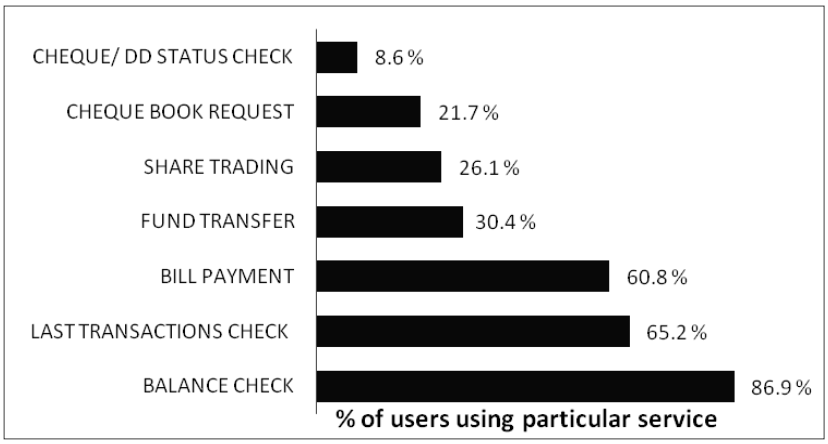
mobile banking issues ↓	**Level of agreement of the respondents (in % terms) with issues**				
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Mobile handset operability	34.09 %	47.27 %	10.06 %	6.81 %	0.75 %
Security/Privacy	27.77 %	37.06 %	20.10 %	9.75 %	5.30 %
Standardization	15.90 %	43.18 %	24.24 %	12.12 %	4.54 %
Downloading & Installing application software	10.63 %	10.30 %	33.33 %	42.70 %	3.02 %
Customization	7.57 %	26.06 %	52.72 %	12.12 %	1.51 %
Telecom Services	10.09 %	9.06 %	43.93 %	27.27 %	9.60 %

Quality

Table5: Mobile banking users vs. non-users

Issues	**F**	**Sig. (**p<0.05**)**
Mobile handset operability	0.789	0.378
Security/Privacy	3.313	0.073
Standardization	0.224	0.637
Downloading & Installing application software	0.015	0.902
Customization	0.020	0.888
Telecom Service Quality	0.753	0.389

Chart 1: Mobile banking services preference



Annexure

Annexure 1

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Reliability Coefficients N of Cases = 100.0 Alpha = .764

Annexure 2

Independent Samples Test

		Levene's Test		t-test for Equality of Means	
		F	Sig.	t	Sig. (2-tailed)
PER. UTL.	Equal variances assumed	3.043	.086	.000	1.000
	Equal variances not assumed			.000	1.000

Annexure 3

PER. UTL.

		Output	Percent
Valid	100	1	10.6
Missing	0	2	12.4
		3	53.6
		4	15.2
		5	8.2
		Total	100.0