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Challenges of Mobile Banking in Bangladesh: A Study on Dhaka City

Shahneaz, Mir Abdullah

School of Business, Independent University,Bangladesh

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Mir Abdullah Shahneaz
Department of Business Administration
Shanto-Mariam University of Creative Technology, Uttara, Dhaka, Bangladesh

Mohammad Bin Amin
Department of Business Administration
Bangladesh Army University of Science & Technology, Saidpur Cantonment, Saidpur.

Abu Sayef Md Muntaquimul Bari Chowdhuri
Department of Management Studies,
Jahangirnagar University, Savar, Dhaka, Bangladesh,

ABSTRACT

The revolution of mobile money transfer (mobile banking) has become larger consumers of financial services in Bangladesh to access financial services offered by formal providers outside of traditional bank branches. 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.

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

INTRODUCTION

In Bangladesh 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. BRAC bank and Dutch Bangla Bank Ltd. are the pioneered in mobile banking services in Bangladesh. Among all banks of

Bangladesh, Dutch Bangla Bank Ltd. was first to introduce mobile banking. 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 transaction anytime, anywhere.

Concept of Mobile Banking

Mobile banking is a system that allows customers of a financial institution to conduct a number of financial transactions through a mobile device such as a mobile phone or personal digital assistant. Mobile banking differs from mobile payments, which involve the use of a mobile device to pay for goods or services either at the point of sale or remotely.

The earliest mobile banking services were offered over SMS, a service known as SMS banking. With the introduction of smart phones with WAP support enabling the use of the mobile web in 1999, the first European banks started to offer mobile banking on this platform to their customers. Mobile banking has until recently (2010) most often been performed via SMS or the mobile web. Apple's initial success with iPhone and the rapid growth of phones based on Google's Android (operating system) have led to increasing use of special client programs, called apps.

Mobile Banking In Bangladesh

Mobile phones have become an essential communication tool for almost every individual worldwide. In Bangladesh, 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 Bangladesh 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 Bangladesh. However, the actual mobile banking usages don't match the great number of mobile subscribers 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 device, 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), 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 Bangladesh. 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.

REVIEW OF THE LITERATURE

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 & Bangladesh and suggested strong growth potential of new banking channel in Bangladesh. 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.

Jayawardhena (2004) transforms the original SERVQUAL scale to the internet context and develops a battery of 21 items to assess service quality in e-banking. By means of an Exploratory Factor Analysis (EFA) and a Confirmatory Factor Analysis (CFA), these 21 items are condensed to five quality dimensions: access, website interface, trust, attention and credibility. Meuter et al. (2000) have identified critical incidents of customer satisfaction and dissatisfaction with technology-based service encounters. Given that business-to-business transactions are the fastest growing segment of technology-driven services (Hof, 1999); Meuter and his colleagues (2000) suggested investigating what drives business customer satisfaction or dissatisfaction with technology driven services.

According to Gönroos (1982), customers distinguish the quality of customer interactions that take place during service delivery (functional quality) and the quality of the outcome the customer receives in the service encounter (technical

quality). Divya Singhal and V. Padhmanabhan, (Dec 2008), "A Study on Customer Perception towards Internet Banking: Identifying Major Contributing Factor", Internet banking is becoming is increasingly becoming popular because of convenience and flexibility.

The present paper explores the major factors responsible for internet banking based on respondents' perception on various internet applications. The study employs primary data as well as secondary data. Secondary data was collected from different published sources. Primary data was collected by structured survey. Thus, Providing Internet banking is increasingly becoming a "need to have" than a "nice to have" service.

Umma Salma & Mir Abdullah Shahneaz, (2013), "Customer Satisfaction: A Comparative Analysis of Public and Private Sector Banks in Bangladesh", this paper discuss about attempts to make a comparative analysis of level of customer satisfaction towards services provided by public and private sector banks. The study has been conducted in 5 cities. But when we talk about public sector banks customers of public sector banks were more satisfied with reputation, reliability and the prices which public sector banks impose on services like cheque/cash deposit and cheque/cash withdraw (it has been shown that price charges are lower in public sector banks than in private sector).

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 Bangladesh 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.

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 Bangladeshi 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 & up gradation due to lack of standardization.

OBJECTIVES OF THE STUDY

- To study the selected issues (Mobile handset operability, Security/Privacy, Standardization, Downloading & installing application software, Customization, Telecom services quality) in mobile banking form urban customers' perspective.
- To explore the perceived utility of mobile banking in comparison to retail banking and online banking among the mobile banking users and non-users.

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 Dhaka city, Bangladesh. 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.

A method has been designed to meet the second objective of research. For this purpose a questionnaire has been adapted from three different research studies and circulated in 5 different areas of Dhaka city (Uttara, Banani, Mirpur, Dhanmondi and n Nawabpur). This questionnaire consists of two different parts. The first part is showing respondents personal data such as gender, bank type, income, age, qualification and the second part asked respondent to rate their satisfaction level to retail banking and online banking among the mobile banking users and non-users

from “strongly agree” to “strongly disagree” on such variables which lead to build strong relationship with customers such as prices, reliability, technology, customer service, location and infrastructure etc. This questionnaire was given to 122 different respondents out of which 100 questionnaires were returned. Most of these responses were conducted ourselves and rest through the help of friends and family.

ANALYSIS & DISCUSSION

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

Mobile 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.

Mobile Banking Users: Service Usages Pattern

Percentile Analysis suggested that majority of users were using services from less than 2 years and frequency of uses among majority of users was weekly.

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 whereas checking status of D.D. or cheque was least used.

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), telecom operators etc. and thus may influence success of mobile banking in Bangladesh.

Analysis suggested that majority of respondents i.e. 81.36% strongly agree or agree that mobile handset operability is an 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 Bangladeshi 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.

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.

ANOVA

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

Independent Sample Test

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

	Equal variances		
		.000	1.000
	not assumed		

[H_0: $\sigma_{21} = \sigma_{22} = \ldots = \sigma_{2k}$

H_a: $\sigma_{2i} \neq \sigma_{2j}$ for at least one pair (i,j).

Test Statistic: Given a variable Y with sample of size N divided into k subgroups, where N_i is the sample size of the ith subgroup, the Levene test statistic is defined as:

$$W = \frac{(N-k)}{(k-1)} \frac{\sum_{k i=1} N_i (Z_{-i} - Z_{-..})_2}{\sum_{k i=1} \sum_{N_i j} (Z_{ij} - Z_{-i.})_2}]$$

Mean Std. Deviation of Each Question (for objective ii)

Questions	**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
My bank gives me good compensation at retail banking.	100	1.00	5.00	1.8195	1.10592
Services charges my bank imposes is competitive at online banking.	100	1.00	5.00	2.0514	0.93188
My bank gives good interest rate on saving accounts.	100	1.00	5.00	2.1519	1.06262
My bank provides variety of service charges on mobile banking.	100	1.00	5.00	2.2000	1.07325
My bank provides good credit facilities at retail banking.	100	1.00	5.00	2.2659	1.19120
My bank doesn't charge unnecessarily for not maintaining minimum balance in account at mobile banking.	100	1.00	5.00	2.3642	1.19917
My bank provides ATM service in multiple locations.	100	1.00	5.00	1.8971	1.05480
My bank provides safety for my funds at mobile banking.	100	1.00	5.00	1.9484	1.00440
My bank's image and reputation is good at all banking system.	100	1.00	5.00	2,1686	1.11473

I have open account in this bank because for personal relationship with any of the employee.	100	1.00	5.00	2.2486	1.25921
Location of my bank is convenient.	100	1.00	5.00	2.0460	1.14543
My bank has multiple branches in Bangladesh.	100	1.00	5.00	2.0259	1.14169
Infrastructure of my bank is attractive and friendliness.	100	1.00	5.00	2.1326	1.09751
My bank staff attitude is friendliness.	100	1.00	5.00	2.2393	1.19718
My bank staff gives prompt attention to my needs.	100	1.00	5.00	2.0543	1.19511
My bank staff understands my needs.	100	1.00	5.00	2.0812	0.98496
My bank staff handles my problems efficiently.	100	1.00	5.00	2.1729	1.06660
My bank provides me a good customer service.	100	1.00	5.00	2.2000	1.13552
My overall opinion about my bank is good.	100	1.00	5.00	2.1441	1.09491
I am satisfied with my bank.	100	1.00	5.00	2.1810	1.12810
I will not switch to any other bank.	100	1.00	5.00	2.1710	1.08493

RECOMMENDATIONS

Analysis of the 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.

Young male and female customers are more interested to use mobile banking system rather than retail banking and other online banking system. But, they demand more updated system and user friendly apps. They also demand to ensure the security and well linkup to all payment systems.

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 banks 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.

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 Bangladesh adoption of mobile banking.

CONCLUSION

In this paper we 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.

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ANNEXURE

Table I: 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 II: Mobile Banking Service Usages Pattern

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

Table III: Analysis of Mobile Banking Issues

Mobile Banking Issues	Level of agreement of the respondents (in 5 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 quality	10.09 %	9.06 %	43.93 %	27.27 %	9.60 %

Table IV: 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 services quality	0.753	0.389

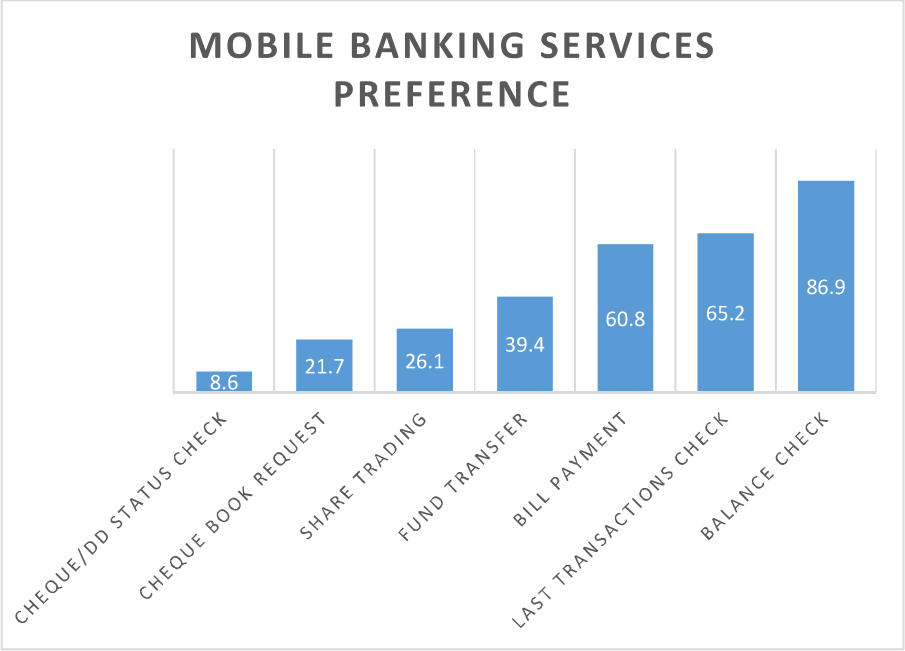

Chart I: Mobile Banking Services Preference