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Innovation in Banking Service: A Case of Mobile Banking in Bangladesh

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Abstract: *Successive innovation & development in Information and Communication Technology (ICT) in banking services make the process of banking more convenient and customized. Clients are more focused on speed in transaction process, convenience, quality service, information and cost. The aim of this paper is to state the status and to identify the factors of service quality of Mobile Banking in Bangladesh. Regression analysis was performed using SPSS to analyze the data. The analysis of the study has inferred that service quality in Mobile Banking comprises of seven factors such as convenience, cost, security, transaction limit, informativeness, mobile network connectivity and time consumption in getting service. The outcome of the study may be used as the basis for the continuous development of the Mobile banking service for the banks in Bangladesh.*

Key-words: *Mobile banking, electronic banking, mobile, service quality, Information and Communication Technology (ICT).*

Introduction

Mobile banking is a banking process that offers financial services like cash deposit, cash withdrawal, balance enquiry, merchant payment, utility payment, salary disbursement, remittance inflow and outflow, government allowance disbursement and fund transfer (transaction between different accounts of a user, from a user's account to someone else's account, etc.) services through mobile gadgets. The present banking system is mostly urban-based, so introduction of the mobile banking service has brought rural people into banking service net as they have easy access to mobile. Mobile phone has made a revolutionary contribution to fulfilling the anywhere and anytime connectivity marketer' wishes. A tremendous change has been observed in banking sector in Bangladesh in terms of providing innovative services to the customers. Bangladesh Bank had initiated a five-year strategy for banking sector development. Financial inclusion was one of the top of the agenda behind the move as mobile-banking is a part of financial inclusion. The factors of service quality of mobile banking are important to measure the satisfaction level of the clients. The overall satisfaction plays a critical role in the study of customer recommendation behavior because it affects individual motivations to recommend products or services to potential customers (Lam et al., 2004 and Morgan et al. 2005). The overall satisfaction includes the total customer experience after the evaluation of services or products (Anderson et.al., 1994, Sweeney and Soutar, 2001). However, with the rapid growth of user friendly

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technology, the factors of service quality of mobile banking has become important in defining the market periphery and designing appropriate marketing programs of mobile banking with the increasing competitive market.

Objectives of the Study

The study has general and some specific objectives. The general objective of the study is to understand the factors of service quality of Mobile Banking in Bangladesh. The specific objectives of the study can be expressed in short as follow:

- o To state the present status of Mobile Banking in Bangladesh;
- o To identify the dimensions of service quality of Mobile Banking;
- o To suggest some policy measures to design strategies on Mobile Banking.

Methodology of the study

A quantitative study, involving the administration of a survey conducted, in order to empirically validate the factors of service quality of Mobile Banking. A total of 200 people availing mobile banking service have been surveyed from whom 166 properly filled questionnaires have been obtained. The respondents were 45 business persons, 58 Non-Govt. service holders, 24 bank officials, 15 teachers, 14 Govt.-service holders and 10 MBA students. For the study, secondary data and literature such as standard publications, journals etc. of the relevant field have been studied and websites of relevant themes visited. Moreover some textbooks became helpful to compare reality with the theories. In the pre-testing phase, a total of 30 respondents have been asked to list down the attributes they consider while defining the service quality of mobile banking in an open-ended questionnaire. The respondents cited about 11 attributes (table 4 in appendix) but only seven attributes- convenience, cost, security, transaction limit, in formativeness, mobile network connectivity and time consumption in getting service have been considered in the study. Attributes having 10% and above opinion of respondents have been considered in determining the service quality of mobile banking. In a structured questionnaire, containing seven items covering the study information, the respondents were asked to identify their perception level of each item of service quality on five-point Likert scale considering the range from 1 (extremely disagreed) to 5 (extremely agreed). For the study, factor analysis and regression analysis were performed using SPSS to analyze the data. Simple random sampling technique has been used for the collection of primary data to generate reliable representative data. Richard and David (2005) inferred that simple random sampling method allows each possible sample to have an equal probability of being picked and each item in the entire population to have an equal chance of being included in the sample.

Data Analysis

Reliability refers to the lack of measurement error in the items on a scale (Kerlinger, 1973). The reliability of the valid questionnaires was assessed by the Cronbach alpha reliability coefficient. Seventy or higher is considered acceptable in most social science research situations (Nunnally, 1978 and http//www.ats.ucla.edu/stat/SPSS/faq/alpha.html). Reliability value in the study is calculated as 0.718. The result demonstrated that survey results have high reliability and ensure a proper ground for further analysis.

Research Framework

The dependent variable in the study is service quality. The independent variables in the study are the factors of service quality which measures the level of satisfaction with service performance. The factors of service quality included in the independent variable are convenience, cost, security, transaction limit, informativeness, mobile network connectivity and time consumption in getting service.

Model Development

Service Quality = f (convenience, cost, security, transaction limit, informativeness, mobile network connectivity, time consumption in getting service). Using the function a regression model can be estimated to find out the effect of the independent variables on the dependent variable. So the equation is estimated as, $Y=\alpha+\beta X$ [where, Y and X are the dependent and the independent variables respectively].

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 *$$

$* \alpha, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ and β_7 are coefficients.

Thus the model becomes:

Service Quality $=\alpha+ \beta_1$Convenience $+ \beta_2$Cost $+ \beta_3$Security $+ \beta_4$Transaction Limit $+ \beta_5$Informativeness $+ \beta_6$Mobile Network Connectivity $+ \beta_7$Time Consumption in Getting Service.

Now the following hypothesis has been considered for justifying the coefficients in the service quality of mobile banking:

H_O: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = 0$ (There is no significant relationship among the regression coefficients).

H_1: All the regression coefficients are not simultaneously zero.

Status of Mobile Banking in Bangladesh

Most of the Asian countries have already introduced the mobile-banking and this service has become so popular in India that it has spurred the country's

Gross Domestic Product (GDP) growth. E-banking services have been available in Bangladesh since 2001. Almost all of the commercial banks in Bangladesh offer at least minimum online financial services. Banks in Bangladesh have invested huge amounts of money in offering financial services online. E-banking grows faster than other e-commerce sectors, as financial services are data intensive and require no physical delivery (Zekos, 2004). The first-ever mobile banking service in the country was launched on 31st March 2011 as a part of modernizing the banking sector. Dutch-Bangla Bank Limited (DBBL) launched the service in collaboration with the mobile phone operators Banglalink and CityCell in the capital city Dhaka. Primarily mobile banking provides the clients with cash deposit, cash withdrawal, utility payment, salary disbursement, foreign remittance and fund transfer services. The standard package of mobile banking covers : mini-statements and checking of account history; alerts on account activity or passing of set thresholds; monitoring of term deposits; access to loan statements; access to card statements; mutual funds/equity statements; insurance policy management; pension plan management; status on cheque, stop payment on cheque; ordering cheque books; balance checking in the account; recent transactions; due date of payment; PIN provision, change of PIN and reminder over the internet; blocking of (lost/stolen) cards; domestic and international fund transfers; micro-payment handling; mobile recharging; commercial payment processing; bill payment processing; peer to peer payments; withdrawal at banking agent; and deposit at banking agent (Banking agent is a post office or other similar institution that make payment as per bank instruction facilitating the remote payment system). Initially the government has given its approval to 10 banks to introduce mobile-banking services. DBBL is the first bank to grasp the opportunity. The other banks are Dhaka Bank limited, Trust Bank Limited, Mercantile Bank Limited, Brac Bank Limited, Eastern Bank Limited, AB Bank Limited, The City Bank Limited, The Premier Bank Limited and Southeast Bank Limited. Under the service, any mobile handset with subscription to any of the two partner cellular companies would be able to avail the service. The formal inauguration was done by Dr. Atiur Rahman, Governor of Bangladesh Bank, the country's central bank, using his mobile phone to deposit Tk 2,000 ($28) and to withdraw Tk 1,500 through Banglalink and Citycell mobile networks in Motijheel area in the capital. Customer's money is safe as no one can withdraw money without taking possession of the mobile set, PIN and the cheque digit all together. No one will be able to deposit unwanted money into a mobile banking account without knowing the cheque digit, although the mobile number is publicly known. Though the mobile banking service is faster than other forms of banking services and would include the people even of the remote areas covered by the CityCell and Banglalink networks, it has a little more expensive for the users. The users will have to pay a service charge of Tk 50 for depositing Tk 5,000

and Tk 100 to withdraw the same amount of money. The service charge is whichever amount is higher between Tk 5 and 1% of the deposited money at the cash-in end and whichever amount is higher between Tk 10 and 2% of the money withdrawn from the cash-out end. However, the registration fee, salary and remittance disbursement services are provided free of cost. A customer can deposit or withdraw money five times a day and can deposit or draw Tk 5,000 per transaction. The customer will hand over cash to the agent and the agent will initiate the transaction from his/her mobile phone, the agent will help the account holder to do the banking using his PIN number. At present subscribers of Banglalink and CityCell are able to do banking transactions. Clients need not to open traditional accounts at the DBBL to access the mobile phone service. Any Banglalink or CityCell mobile user can register as a recipient of the service by paying Tk 10 as fee to any authorised agent of the DBBL or any retailer of CityCell and Banglalink. After registration, the users are given a Personal Identification Number (PIN) and a check digit ranging from one to nine which is added to his/her mobile number that acts as security measures. Every user will need his/her mobile set, check digit and PIN for making any transaction.

Findings and Discussions

The multiple regressions show that all the factors of service quality (time consumption, security, cost, transaction limit, convenience, informativeness and mobile network) represent 81.7% of the service quality.

Table 1: Regression Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.904	.817	.809	.34074

Predictors: (Constant), Time Consumption, Security, Cost, Transaction Limit, Convenience, Informativeness, Mobile Network

On the basis of ANOVA table it is observed that the value of F-statistic is 101.003 and its correspondent significance value is 0.000. So the null hypothesis may be rejected.

Table 2: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	82.089	7	11.727	101.003	.000
Residual	18.345	158	.116		
Total	100.434	165			

Predictors: (Constant), Time Consumption, Security, Cost, Transaction Limit, Convenience, Informativeness, Mobile Network

Dependent Variable: Service Quality

The t-statistic given in the table 3 indicates that none of the regression coefficient is statistically insignificant considering 5% level of significance. Thus, a statistically significant relationship exists in between service quality and time consumption, security, cost, transaction limit, convenience, informativeness, mobile network ($p < 0.05$, $p < 0.01$). Thus the fitted model is:

$$Y = -.425 + .348X_1 + .100X_2 + .157X_3 + .154X_4 + .119X_5 + .090X_6 + .197X_7$$

Table 3 illustrates the estimates of the model coefficients.

Table 3: Estimates of Coefficients for the Model

Quality Dimension	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.425	.167		-2.546	.012
Convenience	.348	.036	.401	9.768	.000
Cost	.100	.029	.136	3.462	.001
Security	.157	.026	.243	5.978	.000
Transaction Limit	.154	.032	.181	4.752	.000
Informativeness	.119	.036	.145	3.336	.001
Mobile Network	.090	.037	.110	2.471	.015
Time Consumption	.197	.037	.217	5.333	.000

Dependent Variable: Service Quality

In terms of findings convenience is the most common factor that constitutes service quality of mobile banking. The second dominant factor that constitutes service quality of mobile banking is time consumption. It is better to access mobile banking than traditional banking that takes a reasonable time and formalities. The third dominant factor that constitutes service quality of mobile banking is security matter. As people availing mobile banking service make transaction and even carry the money irrespective of time and location. Customer privacy has always been a critical issue in marketing, but has assumed a greater significance in recent years with the rise of internet-based transactions (as similar by the statement of Rust et al., 2002). Transaction limit occupies the fourth rank. Informativeness stands on the fifth rank. Without proper information, the clients will be deviated from the benefits of mobile banking. Cost of mobile banking occupies stands on sixth rank and mobile network stands on seventh rank.

Recommendations

- The introduction of this new mobile banking service will prompt banks, micro-credit institutions and mobile phone companies to create a common IT platform to serve millions of urban and rural clients. Bangladesh has a fast-growing telecom network with half of a dozen operators, including India's Airtel Bharti, reaching millions of subscribers. So, sophisticated Information and Communication Technology (ICT) with easy transaction processing mechanisms should be developed in mobile banking.

- Mobile-banking will lay the bridge between banks and mobile operators. But presently only Banglalink and Citycell provide the service. So, other mobile phone operators should be brought under the mobile banking network by the banks to increase the number of clients. It will revolutionise Bangladesh's financial institutions if at least 50 per cent of the country's 70 million cell-phone subscribers are brought under the mobile banking services. Then every mobile phone can become a mini-bank.

- Mobile-banking has brought a new creativity to banking services. So, innovative services should be added to minimize time consumption in transaction processing.

- Mobile-banking service should be provided at the convenient locations.

- Information should be accurate, timeliness, and usefulness for the clients, should be checked and balanced timely.

- Transaction limit should be adjustable with the customer requirements.

- The Bangladesh Bank has given approval to ten private banks to introduce mobile banking services. It infers that mobile banking stands on the early stage of development. So, efforts should be given to minimize the cost of mobile banking service to earn long run sustainable profit.

Conclusion

Bangladesh has entered the era of mobile-banking in a remarkable technological leap in the financial sector after Dutch Bangla Bank Limited (DBBL), a private commercial bank, launched the service in collaboration with two mobile phone operators, Banglalink and Citycell. Convenience, cost, security, transaction limit, informativeness, mobile network connectivity and time consumption in getting service have been considered as the factors of service quality of mobile banking. The Mobile banking service now is on its growth stage. More intense the competition, more factors of service quality of mobile banking will be discovered. Thus, time demands to look into the development of the service quality of Mobile banking in Bangladesh with due care. Mobile-banking will help people access to banking service anytime and anywhere in the country. It will boost rural economy and national output by scaling up money circulation in villages. Therefore, understanding the mobile banking service factors is important for banking policy makers and bank

related organizations because it would help them to develop and implement mobile banking service.

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Appendix

Table 4 ⁎

Customers' opinion regarding different attributes that they consider while defining service quality of Mobile Banking

Attributes	Total respondents	Actual respondents	Percentage
Convenience	30	24	80
Cost	30	17	57
Security	30	21	70
Transaction limit	30	13	43
In formativeness	30	10	33
Mobile network connectivity	30	8	27
Time consumption in getting service	30	3	10
Availability of money	30	2	7
Nearness to bank branch	30	2	7
Crowd	30	1	3
AC room	30	1	3