

Customer Attitude Towards Mobile Financial Services: An Empirical Study on Dhaka City, Bangladesh

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Abstract:

This study examined the impact of mobile financial service (MFS) offerings among the customers for using it as well as ascertaining the factors that influence the customer attitude towards using MFS in Dhaka City, Bangladesh. To do so, a survey questionnaire was designed for data collection. Collected data was transcribed and analyzed which contains factor analysis, regression analysis, reliability test and correlation for testing hypotheses. The analysis brings lots of interesting findings in all dimension including dominant users of MFS, frequency of using MFS, customer mind-share of MFS providers and most preferred service from MFS. The findings elucidate those five factors are the most influential factors in affecting customers' decision making and attitude towards using MFS. Finally, the study suggested that even though there are several challenges about mobile financial services in Bangladesh, overcoming those encounters will significantly ameliorate the financial system of the country.

Key words: MFS, hypotheses, factor analysis, regression analysis, reliability test, correlation, customer attitude.

INTRODUCTION

The progressive new technology has presented us with a financial system that is swift, more comprehensive and more convenient. Mobile phone, a great invention of new technology, has already got a wide spread acceptance throughout the world. It has brought a different use that brings the opportunity to involve in the financial system as a medium of providing various financial services without any complexity. The financial services provided through mobile phone are known as Mobile Financial Services, which is completely different from the traditional concept of SMS Banking because of it, has used a very new procedure to conduct various services (Ali & Bharateaj, 2010)

In fact, according to Bangladesh Bank (BB) (2012), it is an approach to offering financial services that combines banking with mobile wireless networks helps customers to perform banking transactions. It means the ability to make deposits, withdrawals and to send money or receive funds from a mobile account. Often these kinds of services are enabled by the use of bank's agents that permit mobile account holder to transact at independent agent location and that is outside of bank branches.

Bangladesh Bank has presented approval for Mobile Financial Services on July 2011 to promote market development. Primarily five banks have responded confidently to establish active development where three largest of these were launched instantly at the time of launching and others in early 2012. According to CGAP (2014), by the end of the first quarter of 2015 the fastest early expansion has come from bKash (BRAC Bank) and Dutch Bangla Bank Limited Mobile Banking (now Rocket). Even though Bangladesh's Central Bank has approved more than 28 licenses to offer mobile financial service, more than 81.4% of transactions are through a single company – bKash limited (BIDS 2017). bKash launched in the second half of 2011, grew to 3 million accounts by the end of 2013. In addition, there are some other banks who are providing financial services in this industry like Upai of United Commercial Bank, EasyCash of Bank Asia, SureCash of Rupali Bank, MYcash of Mercantile Bank etc.

According to BTRC (June, 2019), the mobile phone subscribers are 161.772 million. So, a huge opportunity is waiting for the banking industry of Bangladesh in the podium of mobile banking service. However, people also use mobile banking or mobile financial services for some other purposes nowadays. Many products are being brought using mobile financial services like bKash, Rocket, iPay, SureCash etc. Online companies facilitated their transactions through this mobile banking for customers.

OBJECTIVE OF THE STUDY

The purpose of the study is to gain insight into the newly emerged promising financial platform – mobile financial service (MFS), customers' response and reaction toward such service. The specific objectives are as follows:

- a. To deduce the demographic characteristics of MFS users in Dhaka City,
- b. To ascertain the factors that influence customer attitude towards using MFS,
- c. To get an outline of MFS industry in Bangladesh,
- d. To examine the impact of MFS offerings among customers for using it.

LITERATURE REVIEW

The modern revolutions in telecommunications have capacitated the launch of new entrance method for banking services; one of these is mobile financial services, whereby a customer interacts with a bank via mobile phone (Shezan M., 2015).

Shezan (2015) described in his article that mobile financial services include conducting account balance and transaction history inquiry, bill payment, fund transfer, stock trade, portfolio management as well as insurance ordering, via a mobile device. In addition, Shezan (2015) also dictated those mobile financial services (MFS) and mobile banking is almost distinguishable. Therefore, mobile banking concept is needs to be cleared. As a definition of mobile banking, Herstatt et al., (2007) mentioned that it denoted to provision and availability of banking and financial services with the support of mobile telecommunication devices. However, MFS or mobile banking can be assumed as the convergence of mobile technology and financial services (Chung & Kwon, 2009). The necessities for this process are to have a mobile device and mobile network connection. In fact, mobile payment is a subset of mobile banking, which is defined as the use of a mobile device to conduct a payment transaction in which money, or funds are moved from a payer to a receiver via an intermediary, or directly without an intermediary (Mallat, 2006). Nowadays, mobile devices are being used in a variety of payment scenarios such as payment for digital contents (e.g., news, ring tones, music or games), physical goods, tickets, parking fees and transport fares or to entree electronic payment services to pay bills and invoices.

The mobile platform offers a convenient additional method for managing money without handling cash. Mobile phone operators recognize M-banking as a potential service to offer customer. On the other hand, banks and other financial institutions see M-banking as a medium to provide services to "the unbanked". Government regulators also see a similar appeal, but are working on its security and taxation issues. Interestingly, scholarly work on the impact of mobile banking system on the developing economy is scarce (Maurer, 2008)

However, mobile banking has become a weighty source of profits to both banks and telecom service providers' (Nysveen & Thornbjornsen, 2005). Clark (2008) recommended that the mobile phone can expand the number of channels obtainable to consumers as a Channel and this can give consumers more low-cost self-service opportunities by which customers can search for banking information, access funds, transfer funds, and make payments. In this process of banking customers are permitted to access into the banking system in anytime from anywhere. Despite its many returns, the use of mobile phones in banking services is still in its evolutionary phases and internet banking holds its position as the leading channel in electronic banking. (Laukkanen, 2007).

Mobile Financial Services (MFS) Trend in Emerging Economies

The Boston Consulting Group did a study in 2011 on the Socio- Economic Impact of mobile financial services: analysis of Pakistan, Bangladesh, India, Serbia and Malaysia. This study shows that mobile banking system is highly used in Bangladesh regarding bill payment, savings and remittance, not so significant in the areas of credit and Insurance. Several other researchers e.g., Shibli & Tareq, (2007); Khan et al (2016); Parvin, A (2013) also conducted study on different aspects of mobile banking in Bangladesh. As mentioned earlier, Khan et al (2016), investigated the research questions related to the individual level factors (such as age, education and so on) that influence the adoption of mobile banking services in Bangladesh. Mobile banking services such as cash in, cash out, money transfer, business to individual money transfer, and bill payments among others have been helping the unbanked people of Bangladesh in getting the banking services for the last few years. Shibli & Tareq, (2007) investigated the macroeconomic antecedents and trends in mobile banking services in Bangladesh using a panel data, from January 2014 to January 2016.

According to the World Bank (2017), half the people in the world fifteen years of age and older- about 2.5 billion people do not have bank accounts. In emerging markets, formal banking reaches about 37% of the population, compared with a 50% perpetration rate for mobile phones. Christopher. et al (2010) stated that these countries have one bank branch and one ATM for every 10,000 people but 5100 mobile phones are used by these 10,000 people. in the Philippines, for instance, mobile subscriber penetration is almost 80%, but banking penetration is only around 35%, leaving 21 million mobile subscribers with no bank account. However, from a bank's viewpoint, bringing rudimentary financial services to the worlds unbanked is a massive market prospect - and a philanthropic one too. The opportunity isn't new, of course. In recent years, however, mobile technologies have matured to the point that they provide a cost-effective delivery channel, which has put the opportunity within reach (Sanjay, 2013).

In Bangladesh, Dutch Bangla Bank Limited (DBBL) is among the four runners in mobile banking for the unbanked. In early 2012, the Bangladesh- Best bank launched a suite of mobile banking services targeting the unbanked and under-banked. In only Ten months, it garnered more than one million new customers. Since then, an average of one lakh customers have been signing up for services each month, and these customers have deposited more \$ 7.75 million using the mobile banking platform. (Islam, 2010).

Actually, mobile banking services are especially popular in emerging markets such as Mexico, Peru, South-Africa, where bank branches are few and far between, roads are poor or non- existent, and transportation options are slow and / or unreliable. Mobile technology bridges this gap. Thomas (2010) mentioned in his article

that in countries as diverse as China, Brazil, Kenya, the number of new users of mobile banking ascended over 100% in 12 months, as banks leapfrogged traditional service models and moves directly to mobile. In fact, a new mobile banking report from Juniper research (2014) predicted that more than 1 billion people will use their mobile devices for banking by the end of 2017. Ashta, (2010) mentioned that after the launch of mobile banking in India, mobile banking transactions have seen some growth. What attracts customers to mobile banking is the round the clock availability and ease of transaction. Laforet & Li (2005) reasoned behind the barriers to mobile banking adoption were lack of awareness and understanding of the benefits provided by mobile banking. According to Gartner (2013), the proliferation of the mobile banking services and 3G (Third Generation of Wireless) and pervasive application will create the development of more refined service link to M-banking. As worldwide economies move away from cash and towards mobile payments, it is important to consider that those without banks accounts will be left even further behind unless mobile services are available that meet their unique needs- in both developing and developed economies. (Akinci, Aksoy & Apilgan 2014). DBBL's successful mobile banking deployment proved that the numbers are huge enough to grab an opportunity and mobile Technology can be used to provide a cost-effective delivery channel. There is still plenty of rooms for more. Sanjay (2013) added that the emerging markets have created a successful model for the unbanked that developed economies could follow.

Consumer's Attitude and Perception Towards Mobile Financial Services

During the past decades, a considerable amount of research on mobile financial services have emerged. Majority of these studies applied research models and Frameworks traditionally used within the IS literature (Hoehle & Huff, 2009)). Among the different models that have been proposed, the technology acceptance model (TAM) (Davis, 1989), adapted from the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980), appears to be the most widely accepted among information system researchers. The TAM mentioned that a user would adapt a new information system if it intended to use its system, which in turn is dependent on the users' belief about the system. The TAM also suggested that there are two beliefs namely perceived usefulness and perceived ease of use that are instrumental in explaining the variance in users' intention. In addition, Davis (1989) also described in his paper that future Technology acceptance research must address how other variables affect usefulness, ease of use and user's acceptance. Therefore, perceived ease of use and perceived convenience and usefulness may not completely illuminate behavioral aims towards the use of mobile banking, requiring a search for further factors that can better forecast the approval of mobile banking. Another theory pertains to the adoption of new technology is the Diffusion of Innovation Theory by Rogers (2003). Rogers (2003) described that there are five perceived characteristics of innovation that can be used to create a favorable or unfavorable attitude towards an innovation. They are relative advantage, compatibility, complexity, trial ability and observe ability.

Sharma and Singh (2009) found that the users of bank are particularly worried about safety issues like account mismanagement, financial swindles and user kindness issue- difficulty in recalling the different codes for diverse types of transactions, application software installation and modernizing due to lack of Standardization. For customers in developed countries, m-banking can be a parallel service (more platform for managing financial transactions) offered by financial organizations in addition to ATM and internet banking. Therefore, factors such as simplicity, convenience, and ease of use may become an important criterion when they consider adopting M-banking. Yet, consumers of the developing countries give less importance on convenience, but more about accessibility and affordability owing to network exposure, connecting of quality and expenses (Donner & Tellez, 2008).

However, regardless of country there are some common factors such as: perceived social risk, usefulness, performance risk and perceived value directly affect outlooks towards mobile banking, and that attitude is the major factor of mobile financial service adoption (Akturan & Tezcan, 2012).

Market Development of Mobile Financial Service (MFS)

The second half of 2011 marked an important turning point in MFD in Bangladesh. Earlier ad-hoc permission from Bangladesh Bank were a set of guidelines providing the regulatory certainty critical to promote market development. Providers have responded positively with five banks establishing active deployments. The three largest of these were launched in 2011 and early 2012 just as the Bangladesh Bank's guidelines were being finalized and made public. By the end of the first quarter of 2012 the fastest early expansion has become from BRAC Bank/ bKash and DBBL that have the largest number of registered customers and agents. These two players have also each signed up 3 and 4 MNO partners respectively. Bank Asia is notable in that it offers an alternative mobile phone technology which does not require MNO agreements and instead enables transaction over smartphone. Using internet-based applications. The deployments that focus on establishing mobile accounts and basic P2P services have grown the fastest so far. Earlier licenses offered to banks and their MNO partners solely for inward foreign remittances have not grown much a pattern consistent with international experience. The MFS market is at an early stage of development as the newest providers are seeking to stabilize

their technology, built out agent network and acquire new customers. These involve a complex, sequenced set of activities that include:

- Finding and training agent,
- Marketing to bring attention to services,
- Acquiring customers using Know-your-customers, and
- Account opening processes while at the same time helping new customers to begin to transact.

The developments that are most active today are seeking to expand their customers bases during 2012. For example, BRAC Bank/ bKash and DBBL aim are aiming for multi- fold growth during 2012 which could push their combined customer accounts between 2 to 4 million within a year's time, possibly more. It is hopes that other provider entering the market might also grow and provide more alternative and competition. It is still early and much more will be learned from MFS in Bangladesh over coming years.

Mobile Financial Services (MFS) in Bangladesh

The financial sector in Bangladesh is continuously growing in response to the evolving needs of the vibrant economy. Rapid expansion of mobile phone users, modernization of payments and financial system based on IT infrastructure, country-wide reach of mobile operators' network have opened up the opportunities for spreading innovative cost efficient and prompt Mobile Financial Services (MFS) especially for the underserved, un-banked/under-banked and low-income group of population. As of June 30, 2019, total 15 banks and 1 subsidiary of bank have been permitted to provide MFS.

MFS Transaction Limit

Particulars		Number of Transactions (Maximum)	Amount in BDT (Maximum)
Cash-in	Daily	5	30,000
	Monthly	25	2,00,000
Cash-out	Daily	5	25,000
	Monthly	20	1,50,000
Person-to-Person (P2P)	Daily	-----	25,000
	Monthly	-----	75,000

Source: Annual Report 2018-2019, BB

With a view to provide an orderly, enabling and competitive environment for optimal utilization of the new windows of opportunity created by extension of the traditional financial services, Bangladesh Bank revisited the Guidelines on Mobile Financial Services for the Banks and issued Bangladesh Mobile Financial Services (MFS) Regulations 2018 on 30 July, 2018. On the basis of increasing demand of MFS market and to maintain the market equilibrium, Bangladesh Bank has increased the MFS transaction limit.

BB allowed MFS for disbursement of inward foreign remittance, cash in/out using mobile phone account through agents/bank branches/ATMs/mobile operators' outlets, person to business payments, business to person payments, government to person payments, person to government payments and person to person payments.

Category-Wise Transaction of MFS (in million BDT)

Category	CY14	CY15	CY16	CY17	CY18
Inward Remittance	379.5	381.5	747.1	841.0	3,605.8
Cash In	4,39,396.8	665,702.5	1,000,187.4	1,326,612.8	1,551,994.9
Cash Out	38,6616.5	576,696.0	902,224.4	1,202,220.0	1,432,646.5
P2P	1,79,955.9	278,795.6	351,243.3	471,564.6	591,109.7
Salary Disbursement (B2P)	5,844.2	12,985.7	24,550.2	45,992.3	67,108.5
Utility Bill Payment (P2B)	11,422.2	14,562.5	22,865.5	25,464.4	33,485.9
Others	7,684.9	28,610.5	45,041.4	73,154.7	55,800.4

Source: Authors own compilation using Annual Report of BB

The countrywide coverage of mobile operators' networks and the rapid growth of mobile phone users have made their delivery channel an important tool-of-the-trade for extending banking services to the unbanked population, especially to expedite faster delivery of remittances across the country helped to achieve a rapid growth.

METHODOLOGY

The study was developed in quantitative point of view. Information was collected by conducting a survey to measure consumers' attitude towards mobile financial service. Information was analyzed using statistical models and finally decisions were made based on the findings.

Sample Size

Convenience-sampling technique was used with random respondents for sampling, nearest mobile banking service agents' locations were accessed to and the customer who came to take the service were conducted. Sample size was determined by following sample size formula. Researcher checked Slovin's sample size formula. The formula is:

$$n = N / (1 + Ne^2)$$

where, N = Population Size (324.58 Lacs in June 2019) [1 lac = 0.10 million]

e = Marginal error (standard 8%)

However, the population size does not affect directly the sample size, except the finite population correction factor has to be applied. In fact, the sample size is affected by the variability of the characteristics in the population. So, another formula was also used to find out sample size that is applicable for huge or unknown population. The formula is:

$$n = (Z^2 * p * q) / e^2$$

Where, Z = 95% confidence level (1.96)

p = Sample portion (Standard 50%)

q = (1 - p) = 0.5

e = Marginal error (Standard 8%)

Based on the formula 158 respondents were selected and conducted for this extensive study.

Questionnaire Design

The questionnaire was based on review of literatures and the specific characteristics of Bangladeshi people and market context. The questionnaire was in English and simple to understand by every respondent. The items of the questionnaire are constructed based on the consumer attitude and acceptance of mobile financial services.

Data Collection

The sample size decisions are primarily based on cost considerations and in line with studies on consumer attitude of mobile banking. A total of 158 respondents from Dhaka metropolitan area were collected randomly at the time of transaction from M-banking agent stores through interview and using Google forms by email and social media. There are about 6531 M-banking agents in Dhaka City (September 2019). Out of 158 Google forms, 158 responses were received. Respondents replied to a structured questionnaire and their answers were recorded accordingly by the interviewers.

Research Hypothesis

The following hypotheses were formulated for the research purpose:

Hypothesis 1:

H₀: Offerings of MFS have no impact on customer usage

H₁: Offerings of MFS have impact on customer usage

Hypothesis 2:

H₀: Factors have no influence on customer attitude towards using MFS

H₁: Factors have influence on customer attitude towards using MFS

Data Analysis

The returned questionnaires were coded and the collected data was transcribed and processed using the Statistical Package for Social Sciences (SPSS) 25.0. SPSS was used in the data analysis. A standard statistical procedure, which includes factor analysis, regression analysis, reliability test, correlation was used to test. Percentages and frequencies were determined for the demographic information. For the descriptive statistics, simple frequency was calculated to display the distribution of respondent's demographic profile.

RESULTS & INTERPRETATIONS

Demographic Characteristics

The theory of consumer attitude for a service sector points out that customers' choice behavior, buying behavior and levels of satisfaction are influenced by the customers' background, characteristics and external stimuli. Due to unique motivations, some individuals maybe have positive feelings towards the belief while other could respond with negative reaction. Demographic characteristics of consumer of MFS is presented in following table:

Table-1: Profile of Respondents

Variables	Name	Frequency	Percentage (%) of Total
Age (in Years)	15-20	9	5.7
	21-25	28	17.7
	26-30	60	38.0
	31-35	49	31.0
	36-40	6	3.8
	41-50	6	3.8
Gender	Male	121	76.6
	Female	37	23.4
	Others	-	-
Educational Status	Below Secondary	4	2.5
	Secondary	-	-
	Higher Secondary	17	10.8
	Undergraduate	91	57.6
	Post Graduate	46	29.1
	Others	-	-
Profession	Business	41	25.9
	Service	43	27.2
	Student	38	24.1
	Housewife	11	7.0
	Garments Worker	2	1.3
	Others	23	14.6
Monthly Income (BDT)	<10,000	33	20.9
	11,000 – 19,000	3	1.9
	20,000 – 29,000	67	42.4
	30,000 – 39,000	23	14.6
	> 40,000	32	20.3

Source: Authors own calculation

Thus, we can interpret that in Bangladesh, middle income, middle aged people with higher education are dominating the user group of MFS industry.

Analysis of Current Scenario of MFS

MFS is becoming very popular at a faster rate in Bangladesh than many of us could comprehend. At a gradually growing pace, more and more customers are coming under the network. Mostly people of the middle-income groups frequent the service providers at least once a month to send or receive money from any destination.

Table-2: MFS Awareness

		Frequency	Percent (%)	Valid %	Cumulative %
Valid	Yes	158	100.0	100.0	100.0

Source: Authors own calculation

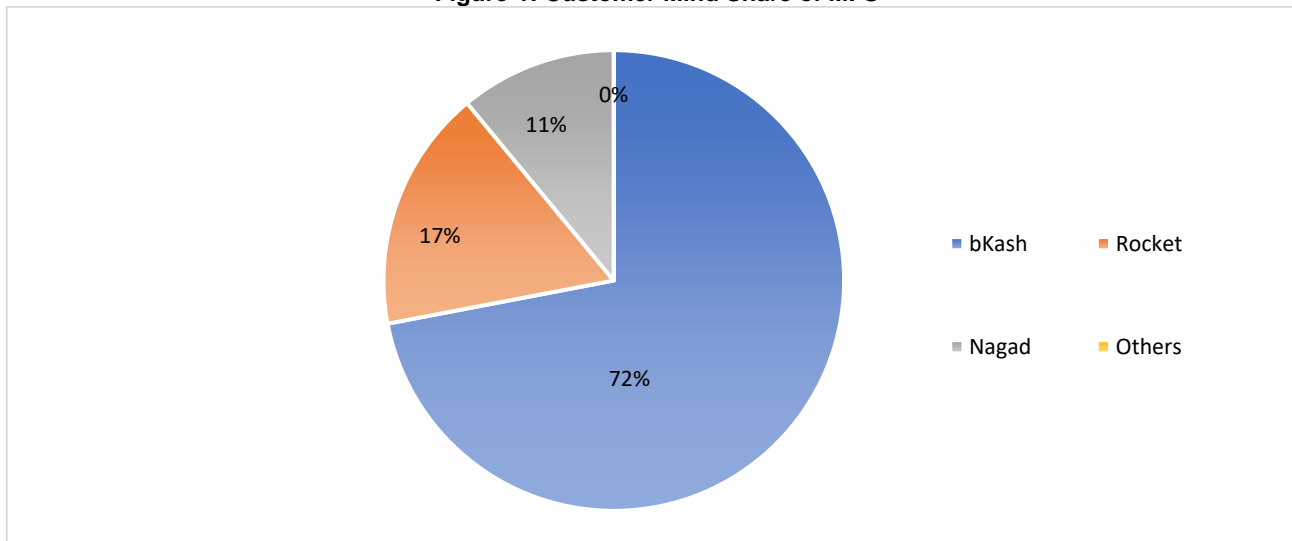
Table 2 shows that 100% people know about the mobile banking or mobile financial service or mobile bank account and those who have an account of mobile financial services among them 50% are using it daily as shown in Table-3.

Table-3 Frequency of using MFS

		Frequency	Percent (%)	Valid %	Cumulative %
Valid	Daily	79	50.0	50.0	50.0
	Weekly	27	17.1	17.1	67.1
	Monthly	52	32.9	32.9	100.0
	Total	158	100.0	100.0	

Source: Authors own calculation

Figure-1: Customer Mind Share of MFS



Source: Authors own calculation

Figure-1 shows that bKash significantly gained success in capturing customer mind in terms of branding. Around 72% respondents prefer or know bKash as mobile financial services. Though bKash is not the first in this industry, they have become the market leader. Rocket previously known as Dutch Bangla Bank Mobile Banking has captured 17% customer mind. Finally, Nagad, a digital payment system introduced by government, recently captured 11% mind share of customers within a short span of time.

Factors Influencing Customers’ Attitude in MFS

There are several factors of mobile financial services which can build customers’ attitude toward using it. For the purpose of the study, the most relevant factors those influence customers’ attitude has been used.

Table-4: Factors of MFS influencing customer attitude

Factors	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Mobile banking swifter than traditional banking	48.7%	49.7%	-	1.9%	-
Mobile banking is more convenient than traditional payment system	42.4%	50.0%	5.7%	1.9%	-
Charges of MFS are reasonable	10.8%	65.8%	10.8%	8.9%	3.8%
Mobile banking reduces dependability on branch banking	12.0%	60.1%	23.4%	4.4%	-
Mobile banking is for illiterate people	1.9%	8.2%	22.2%	42.4%	25.3%
Mobile banking is for educated people	3.8%	17.7%	15.2%	38.0%	25.3%
Opening a MFS account is easy	12.7%	72.2%	9.5%	4.4%	1.3%
Traditional banking is more secure than MFS	10.8%	74.1%	11.4%	3.8%	-
Privacy is well secured in MFS	-	22.2%	17.7%	60.1%	-
Technological difficulty is prominent in MFS	1.9%	38.0%	48.7%	11.4%	-
Security threat is a barrier for gaining people trust in mobile banking	46.8%	41.1%	6.3%	5.7%	-
MFS’s offer helps you in your buying decision	6.3%	81.0%	9.5%	3.2%	-
MFS stimulates you in impulse or sudden buying decision	10.1%	74.1%	10.8%	5.1%	-

Source: Authors own calculation

Regression Analysis

For this study, the independent variables are the offerings or benefits which has been discussed above and the dependent variable is customer attitude for MFS. The model equation is like:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \dots + e$$

This equation can be translated as:

$$Y = \beta_0 + \beta_1 * \text{Airtime Recharge} + \beta_2 * \text{Fund Transfer} + \beta_3 * \text{Bill Payment} + \beta_4 * \text{Cash Withdrawal} + \beta_5 * \text{Purchasing} + \beta_6 * \text{Savings} + \beta_7 * \text{Peer Pressure} + \beta_8 * \text{Receiving Money Time} + \beta_9 * \text{Agent Distance} + \beta_{10} * \text{Buying Decision} + \beta_{11} * \text{Impulse Buying} + \beta_{12} * \text{Others} + \text{error}$$

Table-5: Regression Analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.813a	0.661	0.635	0.53864
a. Predictors: (Constant), MFS stimulates you in impulse or sudden buying decision, Fund Transfer, Average distance to Agents, Others, Bill Payment, Savings, Purchasing, Airtime Recharge, Cash Withdrawal, Average waiting time for receiving money, MFS's offer helps in your buying decision				

Source: Authors own calculation

From the table above, the value of R is 0.813 which is greater than 0.050 and this value indicates high extent of positive relation between the independent variables and the dependent variable. The R² represent the variance of the analysis of independent variables. Here, R² value is 0.661 which indicates MFS offerings have 66% variation on customer attitude for using MFS. The adjusted R² represents the goodness of model fit whereas R² > Adjusted R² (66% > 63%). This indicates a good regression model. Besides the gap between R² and Adjusted R² is very low which shows that the number of non-significant variables are minimal in this analysis.

Table-6: ANOVA Testing

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	82.559	11	7.505	25.869	0.000b
	Residual	42.359	146	0.290		
	Total	124.918	157			
a. Dependent Variable: Based on your experience, rate your attitude towards MFS						
b. Predictors: (Constant), MFS stimulates you in impulse or sudden buying decision, Fund Transfer, Average distance to Agents, Others, Bill Payment, Savings, Purchasing, Airtime Recharge, Cash Withdrawal, Average waiting time for receiving money, MFS's offer helps in your buying decision						

Source: Authors own calculation

From the ANOVA analysis, the study has found that the value of F statistics is 25.869. By considering the degree of freedom of both regression and residual the critical value is 1.91. In F Distribution Table (Malhotra, Marketing Research 5th edition), F value is higher than critical value at 0.05% level of significance. Consequently, null hypothesis of Hypothesis-1 is rejected and we can affirm that offerings of MFS have impact on customer usage.

Table-7: Analysis of Co-efficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	1.471	0.432		3.403	0.001
	Airtime Recharge	0.196	0.158	0.089	1.239	0.217
	Fund Transfer	0.169	0.134	0.083	1.264	0.208
	Bill Payment	-0.442	0.119	-0.231	-3.713	0.000
	Savings	0.069	0.131	0.038	0.523	0.602
	Cash Withdrawal	0.476	0.141	0.264	3.374	0.001
	Purchasing	-0.319	0.132	-0.178	-2.421	0.017
	Others	-1.417	0.180	-0.422	-7.878	0.000
	Average Waiting Time	0.890	0.193	0.387	4.614	0.000
	Average Distance to Agents	0.635	0.218	-0.240	2.915	0.004
	MFS helps in your buying decision	1.009	0.175	0.596	5.782	0.000
	MFS stimulates you in impulse or sudden buying decision	1.297	0.134	0.922	9.686	0.000
	a. Dependent Variable: Based on your experience, rate your attitude towards MFS					

Source: Authors own calculation

Using the table-7, we can modify the regression equation as:

$$Y = 1.471 + 0.196 * \text{Airtime Recharge} + 0.169 * \text{Fund Transfer} - 0.442 * \text{Bill Payment} + 0.476 * \text{Cash Withdrawal} - 0.319 * \text{Purchasing} + 0.069 * \text{Savings} + 0 * \text{Peer Pressure} + 0.890 * \text{Receiving Money Time} + 0.635 * \text{Agent Distance} + 1.009 * \text{Buying Decision} + 1.297 * \text{Impulse Buying} - 1.417 * \text{Others}$$

It is clearly evident that the four significant variables are: Receiving Money Time, Impulse Buying, Buying Decision and Agent Distance since these variables value is more than 50%.

Factor Analysis

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity has been used here to test the Hypothesis-2. Here, the significant value = 0.000 < 0.05. Subsequently, the null hypothesis is rejected and we can accomplish that the mentioned factors have influence on customer attitude toward using MFS.

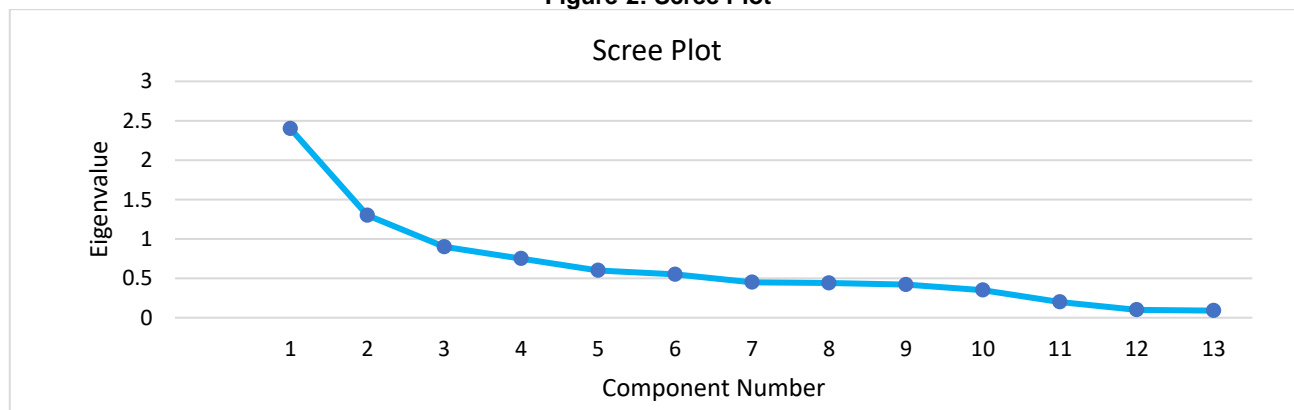
Table-8: Chi-Square

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.331
Bartlett's Test of Sphericity	Approx. Chi-Square	987.516
	df	78
	Sig.	0.000
a. Based on correlations		

Source: Authors own calculation

Null hypothesis of Hypothesis-2 can also be tested by Chi-Square value. From the Chi-Square Table- 3 (Malhotra, Marketing Research 5th Edition), for 78 degrees of 0.05 significance level the value is 79.082 which is less than 987.516. So, we can reject the null hypothesis. These mentioned factors have influence on customer attitude toward using MFS. Besides, KMO measure of sampling adequacy is 0.331 < 0.5. Therefore, factor analysis is fit to this SPSS analysis.

Figure-2: Scree Plot



Source: Authors own calculation

Here, from the scree plot we can see that there are five components above the eigenvalue 0.5. So, the number of factors will be five of thirteen variables.

Table-9: Rotated Component Matrix

	Rescaled Component				
	1	2	3	4	5
MFS's offer helps you in your buying decision	0.892				
MFS stimulates you in impulse or sudden buying decision	0.774				
Mobile banking is for educated people		0.973			
Mobile banking is for illiterate people		0.832			
Charges of MFS are reasonable			0.900		
Mobile banking reduces dependability on branch banking			(0.567)		
Traditional banking is more secure than MFS			0.538		
Privacy is well secured in MFS				0.890	
Security threat is a barrier for gaining people trust in mobile banking				(0.631)	
Technology difficulty is prominent in MFS				0.511	
Mobile banking is more convenient than traditional payment system					0.824
Mobile banking swifter than traditional banking					0.666
Opening a MFS is very easy					(0.290)
Extraction Method: Principal Component Analysis					
Rotation Method: Varimax with Kaiser Normalization					
a. Rotation converged in 6 iterations					

Source: Authors own calculation

The rotated component matrix expresses the relationship between the variables and factors. MFS's offer (0.892) and impulse buying decision (0.774) both are positively correlated with component 1 in decision making. In component 2, named as education factor, also positively correlated with both educated (0.973) and illiterate people (0.832). In component 3, named as convenient factor, charges (0.900) and security (0.538) are positively correlated, whereas branch banking dependability reduction (-0.567) is negatively correlated. In component 4, named as security factors, privacy (0.890) and technology difficulty (0.511) are positively correlated whereas trust issue (-0.631) is negatively correlated. Last but not the least, component 5, named as feature factor, convenient payment system (0.824) and swifter action (0.666) are positively correlated, on the other hand, easy account opening (-0.290) is negatively correlated.

RECOMMENDATIONS

- Bkash is now in a leading position in this industry. The market of DBBL Rocket and Nagad is also on the rise but other mobile financial services like SureCash, mCash, MYcash, Upai is negligible. Therefore, these companies need to develop their marketing strategy.
- Since MFS mainly depends on technology, so these companies need to improve their technology, i.e., server speed and server capacity to handle substantial transaction. Also, security grip on these transactions should be tightened to avoid any risk of hacking or unwanted situations.
- Bkash needs to promote airtime recharge service since it has tremendous potentiality. DBBL should facilitate or simplify cash withdrawal service in their rocket financial service.
- MFS companies should accomplish more campaigns to encourage people to open personal account. Besides, they should expedite training programs for their agents.
- Recently, MFS users are purchasing product via their account. It is getting very popular. Nagad, Rocket and others need to establish user-friendly payment system for their users to create a competition for Bkash; otherwise Bkash will do business as monopoly in future.

LIMITATIONS OF THE STUDY

The sample size of this study was not necessarily representative of the Bangladeshi population as a whole as it ignored large rural population. Secondly, the generalizability of this research may be impacted by the fact that the sample is skewed towards males. This may be due to general tendency of Bangladesh culture to do outside tasks by maximum males. Thirdly, the time constraints may affect the study's profundity; this rigorous context needed more time. In addition, this research only explores the factors to influence motivators and inhibitors on behavioral intentions in Dhaka City. In terms of future research, a large-scale study with more representative sample could be conducted to validate the factors of this study and to enhance the generalizability of the research conclusions.

CONCLUSIONS

Mobile financial services are working as a valuable driver in the changing socio-economic pattern of Bangladesh. This research was conducted to find out the attitude of customers towards using MFS in Dhaka city, Bangladesh. It shows that MFSs are bringing noticeable breakthrough in individual's choice of Dhaka city dwellers. It is found that mobile money transfer and airtime recharge are the most preferred services of MFS's users in Dhaka City. MFS helps family to mitigate money crisis, purchasing and bill payment. It also finds that average agent distance is less than 0.5 km and average waiting time for receiving money is less than 5 minutes. This research also identifies the factors that influences customers' attitude towards using MFS in Dhaka City and most influential factors in affecting customers' decision-making. The factors of MFS's in affecting customers' attitude are categorized in five (5) components; those are 'Decision -making factors', 'Education Factors', 'Convenient Factors', 'Security Factors', and 'Feature Factor', which are significantly responsible for affecting customer attitude in using MFS. The service quality of MFS industry is Dhaka city is also analyzed in this study. The study shows that there is still large scope for improving many dimensions of MFS's services in Bangladesh. The other challenges of MFS's industry of Bangladesh are: illegal money transfer, weak security & privacy issue, misuse by miscreants, service fees of MFS etc. If these challenges are addressed immediately, the industry will get a big boost.

Finally, the understanding of mobile financial services and influencing factors that impact the customers' attitude towards this sector will obviously help the different stakeholders of Bangladesh. Policy makers can take inputs from the relevant research works to formulate policies that will ensure the growth of this sector. Further works in this area are highly suggested so that the industry and others can always be updated about the dynamics of MFS industry of Bangladesh.

REFERENCES

- Akinci, S., Aksoy, S., & Atilgan, E. (2004), 'Adoption of internet banking among sophisticated consumer segments in an advanced developing country', *International Journal of Bank Marketing*, Vol. 22. No. 3, pp. 212-232.
- Akturan & Tezcan, N. (2012), 'Mobile Banking Adoption of The Youth Market Perceptions and Intentions', *Marketing Intelligence & Planning*, Vol 30, No 4 pp. 444- 459.
- Ashta, A. (2010), 'Evaluation of Mobile Banking Regulations', available at [http:// www.arraydev.com/Commerce/JIBC/0306-04.htm](http://www.arraydev.com/Commerce/JIBC/0306-04.htm), assessed on August 15, 2019
- Bangladesh Bank, (2018), 'Bangladesh Mobile Financial services (MFS) Regulations', available at: <http://bb.orgbbd/mediaroom/circulars/psd/jul302018psdl04e.pdf>, assessed on October 05, 2019.
- BIDS, (2017), 'Future Role of Mobile Financial Services in Bangladesh', available at [http:// www.bids.org.bd/uploads/events/D-2_S2A_MH.pdf](http://www.bids.org.bd/uploads/events/D-2_S2A_MH.pdf). assessed on August 15, 2019.
- CGAP, (2012), 'Landscape Study on International Remittances through Mobile Money', available at www.cgap.org, assessed on October 05, 2019
- CGAP, (2014), 'bKash Bangladesh: A Fast Start for Mobile Financial Services', available at www.cgap.org, assessed on October 16, 2019
- Chung, N., & Kwon, S.J., (2009), 'The Effect of Customers Mobile Experience and Technical Support on The Intention to Use Mobile Banking', *Cyber Psychology and Behavior*, 12, pp.539-543.
- Donner, J., & Tellez, C. (2008), 'Mobile Banking & Economic Development: Linking Adoption, Impact and Use', *Asian Journal of Communication*, 18(4), pp. 318-322.
- Emmanuel, O. O. And Adegboyega, E., (2014), 'Banking and Economic Growth in Nigeria: A Re-examination of the Financial Repression Hypothesis', *American Journal of Business and Management*, Vol 3, No 1.
- Fornell, C. (1992), 'A National Customer Satisfaction Barometer: The Swedish Experience', *Journal of Marketing*, 56, (January), pp.6-21.
- Harstatt, C., Buse, S., and Tiwari R. (2007), 'Mobile Services in Banking Sector: The Role of Innovative Business Solutions in Generating Competitive Advantage', paper was presented at the 8th International Research Conference on Quality, Innovation and Knowledge Management, 12-14, Feb. 2007, New Delhi.
- Hoehle, H., & Huff, S. (2019), 'Electronic Banking Channels and Task-Channel Fit', paper presented at the Thirtieth International Conference on Information System.
- Islam et al. (2007), 'Adoption of Mobile Banking in Bangladesh: A Conceptual Framework', *Review of Social Science*, Vol. 2(8).
- Islam, A. (2010), 'Exciting Development in Mobile Phone Remittance: A Road to Digital Bangladesh ', *BUET Journal*, 3, pp. 127-135.
- Khan H.U., and AlShare K.A. (2016), 'Factors Influencing Consumers Adoption of Mobile Payment Device in Qatar', *International Journal on Mobile Communications*, Vol 13, No. 6.
- Laforet, S., & Li, X. (2005), 'Consumers Attitudes towards Online and Mobile Banking in China', *International Journal of Bank Marketing*, 23.5., pp. 362-380.
- Laukkanen, T., (2007), 'Internet vs. Mobile Banking: Comparing Customers Value Perceptions', *Business Process Management Journal*, Vol 13, No. 6, pp.788-797.
- Levine, R. and Zervis, S. (1996), 'Stock Marketing Development and Long Run Growth', *World Bank Economic Review*, 10(2), pp.323-339.
- Mallat, N. (2006), 'Exploring Consumers Adoption of Mobile Payment- A Quantitative Study', PhD Thesis, Paper Presented at the Helsinki Mobility Roundtable, Helsinki, Finland, pp. 17-22.
- Maurer, B. (2008), 'Retail Electronic Payment System for Value Transfers in the Developing World', Department of Anthropology, University of California, California.
- Parvin, A. (2013), 'Mobile Banking Operation in Bangladesh: Prediction of Future', *Journal of Internet Banking and Commerce*, Vol. 18, No 1