
IMPACT OF COVID-19 ON MOBILE BANKING ADOPTION: EVIDENCE FROM BANGLADESH

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Abstract

Mobile banking is an example of contactless financial inclusion which comes as a blessing for society during the COVID-19 pandemic. The study involves demographic factors i.e., gender, occupation, and income group as well as other social factors i.e., perceived ease, checklist expenditure, social protection, trust, satisfaction, and higher charge that influence the adoption of mobile banking during the pandemic. The regression analysis has been done to observe the influence of the variables over the users of mobile banking in Bangladesh. The result shows that gender, income and occupation have no significant influence over mobile banking adoption during COVID-19. Besides, higher mobile banking charges and satisfaction have a significant influence over the adoption of mobile banking during pandemic. On the other side, perceived ease, checklist expenditure, social protection, and trust seem to have little influence on the adoption of mobile banking during COVID-19. The paper suggests that mobile financial service providers should make mobile banking application more user friendly with a focus on cost effectiveness as well as emphasis on safety and security issue that trustworthiness be developed among the users. Thus, the proper consideration and governance on demographic as well as social factors of mobile banking can help to accelerate the wheels of the economy despite any pandemic.

Keywords: Covid-19; Financial Inclusion; Mobile Banking; Social Factor; Trust & Governance.

INTRODUCTION

Mobile banking service has brought about a dynamic change in the society. People get more involved in managing money and socializing within themselves with the help of mobile banking. According to Jonathan & Mishra (2020), they fetched on mobile application data from 74 countries whereas they found average daily increase of mobile applications download increased to 5.2 to 6.3 million. People get isolated and stay at home during pandemic. Their result shows market size and demographics, rather than level of economic development and ex-ante adoption rates, drive differential trends. The features of mobile banking are growing rapidly but the main concern should be provided on to the governance that only keeps it benefitting the society. Mobile banking is such type of financial technology that needs no physical interaction among the people and it can do maximum of the banking activities i.e., sending and receiving money, paying bills and vouchers, tracking the expenditure, contactless shopping, recharging phone for calls and so more.

The application of mobile banking has provided a society with thousands of benefits. Mobile banking adoption has become a blessing for the countries regardless of their nature of development. During COVID-19 the necessities and effectiveness of mobile banking have come to very much visible. Physical distancing policy is encouraged by the World Health Organization (WHO). WHO as well as the government of COVID-19 affected countries gives restrictions on transacting physical money as it easily transmits coronavirus. They inspire people to get friendly with such banking that needs no corporeal existence and this is mobile banking (Aji et al., 2020).

Mobile banking adoption can be varied among sexes. Riquelme & Rios (2010) in their study showed that male user compared to the female user has a relatively stronger perception on the use of mobile banking. On the contrary, the paper indicates that the mobile banking adoption during COVID-19 suggests no comparison for both male and female users. Rather, it gets more beneficial for all sorts of people in the context of occupation, age, and income group diversity. Due to COVID-19, the income status of the maximum people gets vulnerable. As a result, it increases poverty while simultaneously decreasing income and savings (Ferdous et al. 2021).

Thus, to check and balance the income and expenditure during COVID-19, the benefit of adopting mobile banking applications is many. Mobile banking adoption depends mainly on some important factors i.e., trust, security, convenience, complexity, and network availability (Khan et al. 2019). The gist that can be taken for COVID-19 is trust, social protection, perceived ease, etc. The rate of mobile banking usage will rise if these aspects are adequately

monitored by the companies that provide them. The paper tries to unearth the factors that the variables involving the perceived ease, controlling the spendthrift behavior, social protection, trust, satisfaction, and higher charge reflects the impact on the adoption of mobile banking.

Thus, the primary objective of the study is to analyze the users' perception and society's expectation regarding the adoption of mobile banking-based payment during COVID-19. The specific objectives are: a) To explore the demographic and social factors of mobile banking adoption during the COVID-19 pandemic; b) To identify the factors that create a good governance in the mobile banking adoption during the COVID-19 pandemic.

THEORETICAL FRAMEWORK

There are many works available on mobile banking but very few research has been done on mobile banking adoption considering social and demographic factors during COVID-19 in Bangladesh. The paper contributes to the community or society to get enlightened with the room for improvement in governance needed in the time of any pandemic.

The adoption of mobile banking in gulf region has been tested by some factors and these factors are analyzed by regression and correlation. During Covid 19 the result shows that the customers have decreased due to the cost issue and security breach. The result also shows that the society gets benefitted during lockdown as none had access to physical banking freely. (Mustafa, M. et. al., 2021)

The Covid 19 has led to people in isolation. People forget to get socialized during the pandemic. Hence, the use of technological education and its implication in the society alleviate phobia during the tough time. The researchers consider social influence and social isolation among other variables for behavioral intention of the social people. The author also recommended their extended model be applied to analyze any pandemic's influence on e-learning acceptance. (Raza et al., 2020)

Dalerdas et al. (2022) in their study provided a cross-sectoral (primary, secondary, tertiary, and quaternary sectors) outline of the implications and challenges since the start of the crisis, integrating significant information and offering a view of the current socio-economic situation. Mobile banking has done a great help for keeping the socio-economic factors and also keeping monetary policy smooth.

A study showed India has done great with the help of mobile banking during COVID-19. The researchers showed that the user shift in the mobile banking platform has increased by 4% from January 2020 to April 2020. They also showed that India gets used to dealing with banking activities in times of pandemics like COVID-19. (Agarwal et al., 2020)

Sang (2021) in his study showed the intention and recommendation to use the mobile banking application during COVID-19. The research is being carried out in Vietnam, and it is being assessed by seven aspects that influence the customer's intention. Findings of the study indicate that the following factors (i) Innovativeness; (ii) Attitude; (iii) Perceived risk; (iv) Perceived ease of use, and (v) Perceived trust have the most significant impact on customers' behavior of using mobile banking applications in emerging markets such as Vietnam during the pandemic and continuous lockdown. The study also finds that people change their behavior to use more mobile banking applications now and bankers do motivate customers to continue mobile banking for banking activity.

Zakaria et al. (2021) in their study examine the factors that influence the adoption of mobile banking in Islamic banks in Malaysia. Their findings showed that besides the Isolation Intention of the COVID-19 construct, the Performance Expectancy, Price Value, Habit, and Trust have a positive significant influence on the behavioral intention of the customer whereas Cyberhondria shows a negative influence. The researchers emphasized that banks should be more adaptive to use and motivate people to let them use technology in terms of mobile banking.

Katema & Selassie (2020) in their study showed how M-banking overcomes a great challenge during COVID-19 in Ethiopia. The findings of the study revealed that e-service quality dimensions are a significant predictor of customer satisfaction, that among the dimensions, security, dependability, and ease of use have a significant impact on e-service quality, and that these aspects are perceived as critical by customers. All the six variables reliability, efficiency, security, responsiveness, empathy, and ease of use were found to be positively influencing m-banking customer satisfaction, while the variables; ease of use and reliability were found to have a significant impact.

Misrina & Nuskiya (2021) in their study showed how mobile banking and fintech opportunities play a great role while 'Work From Home' in Srilanka during COVID-19. Hence, the study recommended that the bank is at a great place in encouraging and influencing people to be great at using technology in working from home and mobile banking operations.

According to Alwi et al. (2021) in their research that the factors affecting behavioral intent to implement mobile e-wallet in Turkey after the COVID-19 outbreak. The indicators are perceived usefulness, perceived ease of use, perceived health, perceived social impact, and perceived value. Health alert, transactional costs and their impact on mobile e-wall adoption. The study revealed a significant impact on the behavior intent to implement mobile e-wallets.

A vital study is highlighted on the mobile banking opportunities in Albania during COVID-19. The researchers found out 310 questionnaires to highlight the factors which the most important benefits are the payment of bills, the transfer of funds followed by the ease of withdrawing money and electronic purchases. 61% of respondents are satisfied with the ATM service, while 55% and 62% are very satisfied with the internet banking and mobile banking service. Reliability analysis shows that ATM services are very reliable with a maximum number of respondents of 54%, followed by internet banking with 52% and mobile banking with 40% of respondents. (Zyberi, 2021)

Opinion of Purba et al. (2021) in their study assessed a framework for assessing digital technology especially in the time of COVID-19. The findings of the paper said that all variables have a positive strong effect on driving the choice of digital FinTech technology in ordering food and others to survive in Indonesia during the pandemic of COVID-19. The existence of digital-based technology applications related to the internet, big data, smart mobile phones, safe and comfortable technology power has motivated consumers to use them.

Moreover, banks are vital system for any country's economic success. The advent of mobile banking was one of the most inventive technology improvements in Bangladesh's banking industry. Many banks in underdeveloped countries, such as Bangladesh, have incorporated mobile banking technology services, but customer adoption remains low. Therefore, the study sought to find out from the customer perception and to analyze their satisfaction level regarding the adoption of mobile banking-based payment services during this COVID-19 depending on the factors like perceived ease of use, checklist expenditure, social protection, trust, higher bank charge, and satisfaction, etc.

According to Bangladesh Bank reported up to September 2021, the number of mobile banking agents has reached 1,141,693, the number of registered clients reached 1,064.54 lac and the total average daily transaction is 2,171.17 crore. Despite pandemics, mobile banking use has kept the economy running.

The operational definitions of the independent variables selected are as follows:

- a) Perceived Ease of use means a user's belief how easily and comfortably he or she uses mobile banking for the payment service by not going outside home. (*A consumer will use mobile banking as a payment option only if s/he gets comfort zone staying at home*)
- b) Checklist Expenditure means a user's belief he or she can track the expenditure with the help of a mobile banking application. (*A consumer will use this mobile banking technology only if s/he has control on individual's spending behavior*)

- c) Social Protection means a user's belief that the mobile banking application saves people with good governance at an unexpected time. (*A consumer will use more mobile banking only if s/he is ensured that the application provides social protection*)
- d) Trust means a user's belief that by using a mobile banking application s/he does not face any deception and gets victimized in the society. (*A consumer will have this mobile banking if s/he does not face in any fraudulent activities while payment procedure*)
- e) Satisfaction means a society's belief that the usage of mobile banking application while the payment gives huge satisfaction as people need not to go outside home in the time of COVID-19. (*A consumer will be satisfied if s/he has the option of doing every banking activity staying at home*)
- f) Higher Charge means a user's belief that mobile banking companies levy higher charges on loads of usage in the COVID-19 period. (*A consumer will not use mobile banking while payment if s/he gets disturbed by paying irrelevant high price levied by the company*)

The author is interested in drawing the following hypothesis:

H₀: There is no significant relationship between social perception and adoption of mobile banking-based payment

H₁: There is a significant relationship between social perception and adoption of mobile banking-based payment

Dependent Variable: Number of mobile banking accountholders during 2020 and 2021

Independent Variables: Users' perception change considering perceived ease means, checklist expenditure, social protection, trust, higher charge, and satisfaction.

METHODOLOGY

The research type is descriptive and the study period is from 2020 to 2021 (COVID-19 period). The convenience sampling technique has been implemented on 200 respondents. The respondents are the account holders of the scheduled banks in Bangladesh.

The study was conducted on the citizens of Bangladesh basically from Dhaka, Cumilla, and Chattogram divisions. Multiple dimensions of users' perceptions have been recorded. Out of 210 full sets of questionnaires, a total of 200 questionnaires has been duly recorded and analyzed. A questionnaire was given through mail as well as social networking platforms. Thus, the regression equation of this study is as follows:

Adoption of Mobile Banking (Y) = $\alpha + B_1$ (Perceived Ease) + B_2 (Checklist Expenditure) + B_3 (Social Protection) + B_4 (Trust) + B_5 (Satisfaction) + B_6 (Higher Charge)

DATA ANALYSIS AND DISCUSSION

To determine the link between dependent and independent variables, data are regressed and evaluated utilizing IBM SPSS Version 25. The model's significance is determined at a 10 percent level of significance. Each demographic characteristic and perception are utilized to determine the impact on mobile banking adoption.

Analysis of Descriptive Statistics

Table 1: Descriptive Statistics of Demographic Variables

Items	Frequency	Percent
<i>Gender wise mobile adoption</i>		
Male	110	0.55
Female	90	0.45
<i>Profession wise mobile adoption</i>		
Student	67	0.34
Service Holder	49	0.25
Business Man	38	0.18
Home maker	46	0.23
<i>Income Group wise mobile adoption</i>		
BDT less than 10000	55	0.28
BDT 10000 to BDT 25000	58	0.29
BDT 25000 to 40000	45	0.22
BDT above 40000	42	0.21

From Table 1, it can be seen that almost 55 percent of the respondents are male and the rest 45 percent are female. Hence, there is a good combination of both genders. It is also visible that majority (34 percent) of the respondents are students and a good participation came from home maker (23 percent), service holders (25 percent) and business man (18 percent). Looking into the income category between BDT 10,000 and BDT 25000 accounts for the majority of respondents (29 percent). 28 percent are those who earn less than BDT 10000, 22 percent are who earn between BDT 25000 and BDT 40000 and 21 percent are those who earn above BDT 40000.

Table 2: Responses on Mobile Banking Adoption

Responses	Frequency	Percent
<i>Perceive Ease</i>		
Strongly Disagree = 1	8	4
Disagree = 2	22	11
Neutral = 3	46	23
Agree = 4	97	48.5
Strongly Agree = 5	27	13.5
Total	200	100
Mean = 3.5421 SD = 1.00542		
<i>Checklist Expenditure</i>		
Strongly Disagree = 1	6	3
Disagree = 2	19	9.5
Neutral = 3	41	20.5
Mean = 3.245		

Agree = 4	105	52.5	SD = 1.0121
Strongly Agree = 5	29	14.5	
Total	200	100	
Social Protection			
Strongly Disagree = 1	6	3	
Disagree = 2	35	17.5	
Neutral = 3	57	28.5	Mean = 3.3741
Agree = 4	76	38	SD = 1.0233
Strongly Agree = 5	26	13	
Total	200	100	
Trust			
Strongly Disagree = 1	20	10	
Disagree = 2	47	23.5	
Neutral = 3	37	18.5	Mean = 3.1622
Agree = 4	74	37	SD = 1.1921
Strongly Agree = 5	22	11	
Total	200	100	
Satisfaction			
Strongly Disagree = 1	15	7.5	
Disagree = 2	72	36	
Neutral = 3	60	30	Mean = 2.7322
Agree = 4	40	20	SD = 1.03765
Strongly Agree = 5	13	6.5	
Total	200	100	
Higher Charge			
Strongly Disagree = 1	13	6.5	
Disagree = 2	42	21	
Neutral = 3	47	23.5	Mean = 3.2251
Agree = 4	80	40	SD = 1.07214
Strongly Agree = 5	18	9	
Total	200	100	

With the response that using mobile banking during COVID-19 gives ease to the user, the majority (48.5 percent) respondents gave consent and almost 23 percent remain neutral. As the advantage is on the peak the dispersion among the response is low and which is 1.00542. In response to the statement that adopting mobile banking during COVID-19 control users' spendthrift behavior, almost 53 percent people agreed to this point. As people can track their expenditure through mobile banking application the standard deviation among the answers are quite low. The majority of respondents (28.5 percent) agreed with the assertion that adopting mobile banking provides people with social protection, and the response dispersion was moderately lower. In response to the statement that the people during COVID-19 can have a full trust on mobile banking application, majority (37 percent) of the respondents give positive consent. As during the COVID-19 crisis the mobile banking application has made a good trust on the people, the dispersion gets also lower. In response to the statement that the usage of mobile banking during COVID-19 gives satisfaction to the people, majority showed

disagreement to the statement. As users want to avoid fraudulent calls, frequent messages from the operators, promotional calls, they become the concern of dissatisfaction. In response to the statement that the mobile banking companies levy higher charges during COVID-19, majority (40 percent) of the people showed agreement to the statement. Since the financial condition of the people gets deteriorated during COVID-19, the excessive charge levied by mobile banking companies creates discomfort to the users.

Regression Analysis of Demographic Profile

Regression analysis is done on the gender, income group and the occupation of the respondents.

Table 3: Regression Analysis of Demographic Profile

Factor	B	R ²	P
Gender			
Male	0.726	0.284	.464
Female	0.726	0.284	.464
Occupation			
Student	-0.619	.385	.390
Service Holder	0.518	0.221	.512
Businessman	3.823	0.523	.204
Home maker	2.872	0.031	.796
Income Group			
Less than BDT 10000	4.235	0.282	.461
BDT 10000-25000	-0.842	0.597	.195
BDT 25000-BDT 40000	0.650	0.075	.652
Above BDT 40000	3.262	0.654	.174

The study found that neither gender played a role in the rise in mobile banking utilization during COVID-19. Hence, the models used to show the supremacy of a specific gender over mobile banking usage are insignificant as their *p* values are higher than significance level of .1. Hence, R²s are very low in both the cases. The results also show that though the students and service holders occupy a major proportion of the total respondents, neither of the occupation groups exerted a significant amount of influence on the overall growth in mobile banking adoption during COVID-19. The conclusion is made using the *p* value, significantly higher than the significance level of 0.1. Finally, the results show that though the income group BDT 10000-25000 occupies a major proportion of the total respondents, none of the income group has particular impact to the total increase of mobile banking adoption rate during COVID-19. The inference is made using the *p* value, significantly higher than the significance level of .1. In addition, R² values are so poor to determine the variability in the dependent variable caused by independent variables.

To sum up, it can be said that the demographic factors have insignificant relationship with the adoption of mobile banking during COVID-19. Regression of the six variables i.e., perceived ease means, checklist expenditure, social protection, trust, higher charge and satisfaction are to be analyzed as follows:

Table 4: Regression Analysis of Independent Variables

Factor	B	R ²	P
Perceived Ease	174.021	0.812	.104
Checklist Expenditure	37.625	.354	.325
Social Protection	185.26	0.845	.113
Trust	27.543	0.658	.180
High Mobile Banking Charge	83.583	0.821	.078
Satisfaction	-30.584	0.814	.092

The result depicted that higher mobile banking charge and satisfaction have significant impact on the mobile banking adoption during COVID-19 as the *p*- values are lower than 0.1 significance level and their R² are very close to 1. On the other side, perceived ease means, checklist expenditure, social protection and trust seem to have little influence over the adoption of mobile banking during COVID-19 as their *p*-values are significantly higher than 0.1 significance level.

Table 5: Relationship between Mobile Banking Adoption during COVID-19 and Usage

Summary Output									
Regression Statistics									
Multiple R				0.520546167					
R-Square				0.326417802					
Adjusted R-Square				0.384353694					
Standard Error				2.595135279					
ANOVA									
	Df	SS	MS	F	Sig.				
Regression	6	687.4503	114.5711						
Residual	194	133.56	6.883	16.085	3.8578E1-7				
Total	200	2025.13							
Factor	Coefficient	SE	T	P	Lower95%	Upper95%	Lower95%	Upper95%	
Intercept	0	NA	NA	NA	NA	NA	NA	NA	NA
Perceived Ease	0.22417824	0.112128	1.175788	0.657046	-0.15783762	0.678899	-0.1545499	0.645899	
Checklist	0.113635584	0.275248	0.32015	0.704218	-0.43456728	0.647128	-0.4379728	0.698238	

Expenditure								
Social Protection	-	0.3264	-	0.9401	-	0.6194	-	0.6190
Trust	0.021451	93	0.0852	3	0.668175	53	0.66818	73
High Mobile Banking Charge	0.604899	0.2400	0.8640	0.9312	-	0.4939	0.41246	0.4939
Satisfaction	0.112635	0.2752	0.3901	0.7042	-	0.6472	-	0.6122
	584	48	5	18	0.437967	38	0.46597	38
	0.621199	0.2524	1.2357	0.8542	-	0.2372	0.4326	0.6320
		48	88	18	0.756175	68		73
					753			

It shows that, with the exception of social protection, all five variables are significantly and positively connected to mobile banking adoption during COVID-19. Here, six predictors produced $R^2 = 0.32641$. The result depicts that people find comfort in using mobile banking in the period of the COVID-19 pandemic. Though some factors like higher mobile charges levied by mobile banking companies or not getting the full satisfaction what it should have been created a hindrance to avail the full opportunities of mobile banking-based applications.

CONCLUSION

Mobile banking adoption during Covid 19 has set a great example of financial inclusion for the convenience of the society. Alongside, good governance in mobile banking is also a blessing in Bangladesh during pandemic. Such blessing comes to appear brightly when the world faces the COVID-19 pandemic where social people are not welcomed to let out and do their normal banking activities what they had done before smoothly. Though the world is facing obstacles for the reason of the COVID-19 pandemic, the socio-economic factors cannot be let hampered due to all these. The alternative means of banking activity can be mobile banking whose application is quite handy. People are easily doing their banking activities with the help of mobile banking applications.

The paper studies the six variables i.e., perceived ease means, checklist expenditure, social protection, trust, higher charge, and satisfaction considering the adoption of mobile banking during the COVID-19 pandemic. The study reveals that higher mobile banking charges and satisfaction have a significant influence over the adoption of mobile banking during COVID-19; it means mobile banking companies should give emphasis on these two factors to ensure users' satisfaction. Furthermore, perceived ease measures, checklist expense, social welfare, and trust appear to have little influence on mobile banking adoption during the

COVID-19 pandemic. For a developing country like Bangladesh, mobile banking is a consecration. The flawless performance of mobile banking promotes socio-economic progress during COVID-19.

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