User's Adoption of Mobile Financial Service (MFS): An Application of the Structural Equation Model (SEM)

Md. Abdur Rouf

Associate Professor Department of Marketing Faculty of Business Studies, Hajee Mohammad Danesh Science and Technology University (HSTU), Dinajpur-5200

Md. Asaduzzaman Babu

Lecturer Department of Marketing Faculty of Business Studies, Hajee Mohammad Danesh Science and Technology University (HSTU), Dinajpur-5200

Abstract

This study aims to figure out the constructs of mobile financial service (MFS) and examine the user's adoption of MFS by measuring the impact of individual constructs on users' adoption. This study is quantitative, and it takes a deductive, positivist approach. SPSS version 25 and SEM-Amos version 24 were used to analyze the data. Based on the structural equation model (SEM), the study found that trust variables, financial variables, and information variables all have a significant positive effect on user adoption. On the other side, the hypothesis that usage and security would lead to greater adoption was proved to be false. This study helps policymakers and managers better understand their customers and offer products and services that meet their needs by creating a secure and effective usage policy. Besides the study, introduce some leads to conduct further study considering the individual service provider more specifically.

Keywords: User's Adoption, Mobile Financial Service (MFS), Theory of Planned Behavior (TPB), Structured Equation Model (SEM).

1. Introduction

The banking industry has become more cutthroat as a result of the widespread availability of digital communication, significantly altering the way business is conducted. For the betterment of economic systems and people's standard of living, people nowadays depend heavily on the use of technology (Hasan, 2022). Delivering banking and financial services through a mobile phone is one of the most cutting-edge uses of electronic services. This has led to a more competitive banking industry and more demanding clients throughout the globe. Even in low-income nations, mobile financial services are increasingly sought out because of the availability of information and communication technologies (ICT) (Salam et al., 2021). In addition to the modernization of the country's traditional banking system, the emergence of Mobile Financial Service (MFS) providers, payment service providers, and financial technology has played a significant role in the widespread adoption of technology throughout the banking sector (Hasan, 2022). The ability to send and receive money, make deposits, and pay bills all via a mobile device or app is what makes mobile financial service (MFS) a standout feature of mobile commerce (Al Saedi et al., 2020).

The term "Mobile Financial Services" (MFS) is used to describe the provision of electronic monetary services against a customer's cell phone number (known as a "Mobile Account"), with the associated record of monies being kept in an electronic general ledger. These services can be requested by sending authenticated payment instructions via the bearer's mobile phone or other digital process or device (Bangladesh Mobile Financial

Services Regulations, 2022). When it comes to reaching people at the base of the economic pyramid with financial services, mobile financial services (MFS) have emerged as the most promising and cost-efficient option (Della Peruta, 2015). The following are examples of the kind of services offered by mobile financial institutions, as shown in a 2017 Bangladesh Bank report titled "An Impact Study on Mobile Financial Services (MFSs) in Bangladesh." Use MFS for a variety of financial transactions, including, but not limited to, obtaining cash in and out, transferring funds, shopping, paying bills, topping off mobile phones, and more (University of Dhaka and Bangladesh Bank, 2017). Mobile financial service has expanded extremely whereas the number of registered clients are 187.3 million and the active clients are 55.4 million, despite the fact that traditional consumer banking service has not seen significant expansion (Mobile Financial Services, 2022) and It's no secret that the country's mobile internet user base, which hit about 123.82 million in December 2021, and the mobile internet users of 113.73 million are major drivers of this expansion (Internet Subscribers in Bangladesh, 2021). In 2011, Mobile Financial Services (MFS) launched in Bangladesh under the supervision of the Bangladesh Bank. The Dutch Bangla Bank was first to introduce MFS (Hasan, 2020). Thirteen banks in Bangladesh currently offer MFS (Mobile Financial Services, 2022) and so reach out to those who do not have access to conventional banking services (Noor Khan, 2017).

In today's world, a robust financial system is essential to the expansion and improvement of the economy. Banks play a crucial role in facilitating growth and development because of the resources they provide and the increasing number of people they can serve (Beyene, 2020), and the adoption of mobile phones has caused a drastic shift in the habits of modern citizens (Islam & Tareq, 2017). Information technology is crucial in developing an inclusive financial system since it is the primary basis for lowering costs considerably and reaching a large number of people. However, because of their cost, accessibility, security, and privacy, not all technologies are appropriate for financial inclusion. The use of mobile phones for inclusive finance has become more common in countries where the majority of the population does not have access to traditional banking services (Sumanjeet, 2010). Almost everyone in the world now relies on mobile phones as their primary form of communication. Mobile banking is becoming popular, especially in developing nations where the number of mobile customers considerably outnumbers the number of fixed line subscribers due to superior mobile infrastructure (Bamoriya & Singh 2011). As a result, many stakeholders engaged in delivering mobile banking services, such as banks, financial institutions, service providers, operators, and so on, anticipate a potential rise in mobile banking.

Like with traditional banking, there are problems and difficulties with mobile banking. It involves difficulties with transaction safety and security, device usability, and issues with network availability across different mobile networks (Jamshidi et al., 2018; Bansal, 2020). They discussed the challenges that banks face when adopting these services. The adoption of mobile banking was influenced by technological and social factors (Bansal, 2020). So, a situation is made where any improvements in technology and the ease of using electronic services won't help their users adopt them or use third-generation technologies. Banks throughout the globe are trying to learn their customers' e-behaviors as digitalization and mobile technologies make these services more accessible to consumers for banking, payments, budgeting, and shopping (Sundararaj, 2022). Since banks and other financial institutions now provide clients with the opportunity to conduct financial transactions through their mobile phones, it is important to evaluate the system's rate of adoption and any challenges it may present (Beyene, 2020). Some researchers evaluated the success of their interventions by observing the extent to which users overcome obstacles to adoption and reap the advantages of those interventions. The purpose of the research is to examine the adoption behavior of users of mobile financial services in Bangladesh and also identify the constructs associated with the adoption of mobile banking.

2. Related works

Just 26% of women have checking or savings accounts with financial institutions, making the lack of financial inclusion among the country's population a major problem, especially for women. Women in remote locations, for example, may find it difficult to access banking services due to high fees, but MFS is well-suited to fill this need. The mobile financial services (MFS) business is expanding rapidly; however, just 6% of women use MFS (Lessons from the Field: Leveraging Mobile Financial Services to Accelerate Women's Financial Inclusion, 2017). Baten and Kamil (2010) have assessed the financial potential of e-banking, described the current state of the banking sector, and attempted to show the breadth and advantages of e-banking over the status quo. From a marketing perspective, I attempted to describe how things really stand with online banking in Bangladesh.

Financial services in today's market economy must be adaptable, customer-focused, widely available, and fit with the increasingly mobile lifestyles of both consumers and business owners (Atulkar and Kesari, 2017). Money transfer and bill payment services are now offered by a wide variety of businesses (Yu and Fang, 2009). As this is the case, the banking industry needs to provide customers with special services to win their contentment (Kim et al., 2009; Gu et al., 2009). Customers demand consistent service from mobile financial service providers that is assured and reliable (Rouf et al., 2019). Nonetheless, conventional methods were not wholly supplanted in practice by more modern alternatives such as online and electronic banking. In addition, the study found that consumers do not have full faith in their ability to use mobile financial service systems, which is supported by the weak relationship between customers' expectations of the time and effort required to use the service and their intentions to do so. This criterion evaluated their ability to do the tasks necessary to use a mobile financial service. The banking sector can take the lead in restoring public faith by promoting campaigns that emphasize in-house technological expertise (Islam et al., 2019).

According to research, mobile banking end-users have identified numerous adoption challenges based on their own considerations as consumers. Banks need to overcome these obstacles in order to generate widespread acceptance of mobile banking, which in turn will promote customers' intentions to utilize these services. Rogers groups people in society into five distinct types, labeling some as "laggards," "late majority," "early majority," "early adopters," and "innovators" based on their level of openness to new ideas. Several novel features and the reception of such usage, including operation speed, statement, usability, pursuit, and guarantee, all play a role in swaying customers' approval of the process of mobile banking services (Riquelme and Rios, 2010). Mobile financial service faces a number of obstacles. They include the complexity of using a mobile device, the time and effort required to download the software, and security, safety, and privacy worries (Bamoriya and Singh, 2011). At the moment, there does not appear to be a viable option that offers foolproof security against MFS hacking assaults. Hence, MFS's vulnerabilities are a major issue in developing countries. Users of MFS are likely to develop a negative attitude toward the technology (Rahman, 2021) and refrain from engaging in any of its recommended behaviors due to the high number of barriers related to MFS (use barrier, value barrier, image barrier, danger barrier, and many more). Many of the technical challenges now plaguing the country may discourage customers from embracing MFS platforms. A weak signal or other server issues can prevent the use of online payment methods. However, several banks restrict overseas wire transfers for safety reasons (Himel et al., 2021). Banks always implement new techniques to expand their business and attract clients at all phases of the customer life cycle. Banking institutions provide their consumers with a variety of technology-enabled services, including online banking, automated teller machines, and others. (Bamoriya and Singh, 2011; Goyal et al., 2012; Devadevan, 2013; Saini, 2014; Foroughi et al., 2019). Males are more likely to be early adopters of new technologies, and in many families, men have long held the role of handling banking relationships (Ahmed et al., 2011; Islam, 2013). Respondents had an average of 2.45 years'

experience with mobile financial services; this is a sizable sample given that this new channel has been accessible in Bangladesh since the middle of 2011 (Islam, 2013). In light of the fact that (Shareef et al., 2011) used exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to investigated the reliability of the constructs using coefficient alpha to ensure that there was adequate internal consistency among the scale items used to measure the constructs in question, therefore validating the constructs and their measuring items. All of the independent and dependent variables received reliability scores within the range of 0.713 and 0.978, which is within the permissible range according to the internal reliability cutoff threshold proposed by Nunnally and Bernstein (1994). The mobile financial adoption at the interaction phase is measured using the exogenous variables of the GAM model proposed by Shareef et al. (2018), which are availability of resources, multilingual option, perceived ability to use, awareness, information, trust, uncertainty, functional benefit, security, and image. Bansal (2020) developed a set of variables—Intention to use and adaptation of mobile financial services—using Usage, Value, Risk, psychological barriers (tradition and image), and Information barriers. Money transfers, payment services, and remittance services are all part of the financial services a customer might receive. The rate of mobile banking adoption varies widely throughout the various stages of service delivery. Use of resources (ease of access, speed, and cost), Information quality (correctness, organization, and freshness), Personal information, financial information, Misuse of information, and Trust are the four service points to consider (reliability, safety, and integrity). These variables in adopter behavior and the metrics used to evaluate them are selected and modified based on the user's intention. In this case, mobile financial adoption is a dependent variable, while the construct is an independent variable (Laukkanen et al., 2008; Lee and Chung, 2009; Ganguly et al., 2009; Zhou, 2013; Jun and Palacios, 2016; Kaur et al., 2020; Akhter and Khalily, 2020; Bappy and Chowdhury, 2020; Shankar et al., 2020).

Despite the rapidly expanding body of literature on mobile financial services, no comprehensive study has been conducted to date on the topic of users' adoption of such services in developing countries. However, a few studies have taken into account variables such as usage, information, security, and trust, as well as the literature that supports them. This research aims to address that void and offer recommendations for expanding mobile financial services.

3. Materials and Methods

In this cross-sectional study, the authors employed a questionnaire to collect quantitative data from respondents of various genders, ages, professions, levels of income, and educational levels. This gave the researchers both a qualitative and quantitative understanding of the five constructs that were the focus of this study and the constructs incorporated from different research articles. The constructs are closely connected with mobile financial services, and the literature supports the constructs.

3.1 Research Approach

The study is quantitative, and it takes a deductive, positivist approach. Creswell (2014) argues that the quantitative method is best for studies that aim to determine the impact of a given intervention on a given outcome. With this in mind and the specifics of the study at hand, it has been decided to employ a quantitative approach.

3.2 Data Source

According to Hair et al. (2010), for a study like the one being conducted now, the sample size should be at least five times as large as the total number of questionnaire items. Kline (2011) discusses the appropriateness of sample size, that is, whether it should be greater than 200 respondents. Ten samples for a single observed variable are mentioned in Kahai and Cooper's (2003) definition of sample size depending on parameters. As a result, the sample size for this study followed the ten-sample-per-one-observed-variable rule, meaning that it

included more than 300 MFS users as respondents. The study was conducted with the responses of 350 respondents, who were collected through a Google Form and shared a structured questionnaire among themselves.

3.3 Sample Selection and Analysis Technique

This study's overarching objective is to learn more about the factors that boost mobile financial services user adoption. Non-probability convenience sampling was used since it was the most straightforward, economical, and efficient option for this investigation (Ary et al., 2009). The researcher followed a five-point Likert scale with multiple choice and multi-point scales. SPSS 25 and SEM-Amos 24 were used to analyze all of the data collected.

3.4 Conceptual Framework and Hypothesis Design

Several fields of study, including sociology, psychology, and information systems research, have looked into what factors influence people's adoption of information and communication technologies (Xie et al., 2021). Several different theoretical approaches have been used over the past three decades to analyze how people accept new technologies. The Theory of Rational Action (TRA) is the most popular framework (Fishbein and Ajzen, 1977). Several authors (Riquelme and Rios, 2010; Sripalawat et al., 2011; Mohammadi, 2015) have looked into what factors influence people's decisions to start using a mobile financial service based on TAM. Besides DOI (Al-Jabri and Sohail, 2012), several authors have also employed other citation styles like TPB (Ajzen, 1991; Puschel et al., 2010) and UTAUT (Zhou et al., 2010; Oliveira et al., 2014). This article's goal is to investigate what factors influence consumers to accept a certain solution, focusing particularly on those factors that are underexplored. Only by having positive expectations for using a mobile financial service could this be accomplished, according to the literature. The reason being that advancements in technology are constantly being made and human nature changes with time. Hence, the study incorporates the TPB model into the consideration of the factors that affect the adoption of mobile financial services. This study identified the following five factors as necessary for investigating user adoption (UA) with causative factors: 1) Trust variables (TV); 2) Financial variables (FV); 3) Usage variables (UV); 4) Information variables (IV); and 5) Security variables (SV).

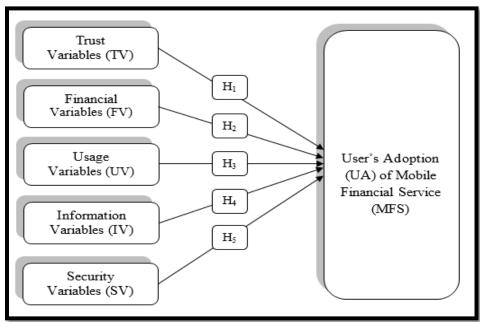


Figure 1: Conceptual Framework: Model of user's adoption towards MFS (Applied from theory of planned behavior, Ajzen, 1991)

Trust Variables: Users' perceptions of the mobile financial service's dependability, credibility, safety, and integrity from a variety of aspects, including technological, organizational, social, political, and customer service. The use of mobile money financial services is positively correlated with users' adoption of trust (Shareef et al., 2018).

 \mathbf{H}_1 = Trust has a positive relationship with adoption of mobile financial service.

Financial Variables: Financial service means the all the financial related function and benefits offered by mobile financial service like, payment, deposit, operation cost and profits.

 H_2 = Financial variables has a positive relationship with adoption of mobile financial service.

Usage Variables: User confidence in their ability to use mobile banking services in a way that is both convenient and in line with their personal values, social expectations, and worldview. The rate of adoption of mobile financial services is positively correlated with usage variables(Shareef et al., 2018).

 H_3 = Usage variables has a positive relationship with adoption of mobile financial service.

Information Variables: In the context of mobile financial services, "information quality" refers to the extent to which customers may obtain comprehensive, accurate, well-organized, easily-understood, up-to-date, and timely data for achieving their goals. Adoption of mobile financial services is correlated with the quality of the information(Shareef et al., 2018).

 \mathbf{H}_4 = Information has a positive relationship with adoption of mobile financial service.

Security Variables: How confident users are that their personal and financial data won't be misused or leaked when they interact and transact with mobile financial services. Security in a mobile financial service is positively correlated with user's adoption(Shareef et al., 2018).

 H_5 = Security has a positive relationship with adoption of mobile financial service.

3.5 Demographic Profile of the Respondents

Table 1: Demographic Presentation

Respondents charac	Frequency	Percentage	Cumulative Percent	
Gender	Male	224	64.0	64.0
Gender	Female	126	36.0	100.0
	18-25	251	71.7	71.7
A za (Vasza)	26-35	90	25.7	97.4
Age (Years)	36-45	7	2.0	99.4
	More than 45	2	0.6	100.0
	Business	3	0.9	0.9
Profession	Service	82	23.4	24.3
Profession	Student	260	74.3	98.6
	Others	5	1.4	100.0
Monthly Income (BDT)	Less than BDT 15,000	262	74.9	74.9
	BDT 15,000 - BDT 25,000	19	5.4	80.3
	BDT 26,000 - BDT 35,000	44	12.6	92.9

	More than BDT 35,000	25	7.1	100.0
Education Level	Secondary	2	0.6	0.6
	Higher Secondary	49	14.0	14.6
	Graduate	214	61.1	75.7
	Post Graduate	85	24.3	100.0

After submitting the survey to 500 individuals, the study got answers and proceeded with 350 plausible viewpoints that are pertinent to this topic was found in the study. According to the respondents' demographics (see Table 1), 260 of them were students and the majority of them were males in the 18 to 25 years age range. Moreover, 262 of the respondents had incomes below BDT 15,000, and the majority of respondents were graduates. So the study carry out with the above respondents accordingly.

4. Result and Discussion

4.1 Empirical Results

In order to analyze the data and test the hypotheses, this study used structural equation modelling (SEM). The test was conducted with the help of the Amos-24 data analysis tool because it allows for simultaneous evaluation of the measurement and structural models. Specifically, this method is useful for ensuring the measurement model's validity and reliability, as well as for clarifying the theoretical connections between the structural model's various constructs. It also measures some model fit indices, which confirms its effectiveness.

4.2 Measurement Model Assessment

Our proposed research model was examined to ensure convergent validity of the measurement. That was accomplished by calculating factor loadings (FLs), composite reliability (CR), and average variance extracted (AVE). Table 2 clearly displays the convergent validity of each and every measurement item. As can be seen in the table above, the FLs values for all of the measurement items were above the minimum acceptable threshold of 0.7 (with few exceptions). Furthermore, AVE values were between 0.50 and 0.72, which is extremely close to the 0.50. The extent to which operationalization accurately measures the intended variables is assessed by means of construct reliability. Composite reliability (CR) and Cronbach's alpha are two ways to quantify this consistency. The CR values were above the recommended level of 0.70, ranging from 0.79 to 0.89. Cronbach's alpha values ranged from 0.77 to 0.88, indicating that the critical value (0.70) is supported. These findings provided evidence in favor of the validity of the measurement scheme.

Table 2: Standardized estimates, and reliability statistics

Item	Standardized Factor	ρ	Average Variance	Composite	Cronbach's
	Loading		Extracted (AVE)	Reliability (CR)	Alpha (α)
Trust Va	riables		0.56	0.84	0.84
TV1	0.75	***			
TV2	0.80	***			
TV4	0.83	***			
TV5	0.61	***			
Financia	l Variables		0.72	0.89	0.88
FV2	0.94	***			
FV3	0.90	***			
FV4	0.68	***			

Usage V	ariables		0.62	0.86	0.77
UV1	0.51	***			
UV2	0.99	***			
UV3	0.96	***			
UV4	0.54	***			
Informat	ion Variables		0.50	0.79	0.79
IV2	0.75	***			
IV3	0.66	***			
IV4	0.78	***			
IV5	0.60	***			
Security	Variables		0.65	0.84	0.84
SV1	0.70	***			
SV2	0.92	***			
SV3	0.78	***			
Adoption	n Variables		0.50	0.81	0.81
UA1	0.67	***			
UA2	0.72	***			
UA3	0.71	***			
UA4	0.62	***			
UA5	0.67	***			

Note: *** ρ < 0.001. Source: SEM-Amos output and reliability analysis

The discriminant validity of the constructs is assessed using the Fornell-Larcker (1981) criterion.

Discriminant validity is the degree to which a construct's indicators represent a single construct and are distinct from other constructs in the model. Table 3 displayed the variables' squared inter-correlations. Those squared inter-correlations represent the shared variance among the study variables, and they do not exceed the square root of the average variance explained, indicating discriminant validity. We came to the conclusion that the model's constructs were reliable and valid. The table also shows that the relative/normed chi-square is 1.328. A value less than 3 indicates a good model fit and equals the chi-square index divided by the degrees of freedom. CFI is shown as 0.981, which is close to 1, indicating a good model fit. The GFI and NFI values are 0.935 and 0.929, respectively, indicating a good model fit. The RMSEA value, which indicates the amount of unexplained variance/ residual, is shown as 0.031, which must be less than 0.08 for a good model fit. The model fit measures reported by these values, namely CMIN/df, CFI, GFI, NFI, and RMSEA, meet the criteria for acceptable model fit.

Table 3: Discriminant validity and model fit indices

Table 5: Discriminant variety and model fit indices									
Constructs		Mean	SD	1	2	3	4	5	6
1. Trust Variables		3.75	0.72	0.751					
2. Financial Variables		3.63	0.94	0.075	0.850				
3. Usage Variables		3.84	0.78	0.191	0.106	0.786			
4. Information Variab	les	3.77	0.73	0.117	0.0 03	0.082	0.700		
5. Security Variables		3.68	0.83	0.227	0.188	0.141	0.188	0.804	
6. Adoption Variables		3.94	0.73	0.123	0.127	0.028	0.123	0.051	0.680
Indices	Model	Fit Obtained Value		Reco	Recommended Value		Reference		ı
CMIN/DF	1.328	.328		<3	<3			Hair at al., 2010	

GFI	0.935	≥0.80	Doll et al., 1994
AGFI	0.916	≥0.80	Doll et al., 1994
NFI (Delta 1)	0.929	≥0.90	Hair at al., 2010
IFI (Delta 2)	0.981	≥0.90	Hair at al., 2010
TLI (rho2)	0.978	≥0.90	Hair at al., 2010
CFI	0.981	≥0.90	Hair at al., 2010
RMSEA	0.031	≤0.08	Browen & Cudeck, 1993

Note: Bold diagonal numbers are the square roots of AVE. Source: SEM-Amos and SPSS output Hypothesized paths shown in table 4 and figure 2, β values, standardized errors, ρ values, and whether or not the hypotheses were accepted or rejected. Values of standardized path coefficients (β values) and statistical significance were compared to determine the strength of association between the constructs (ρ values). The results supported three of five hypotheses. User's adoption is significantly predicted by trust (β = 0.527, ρ < 0.004), financial variables (β = 0.477, ρ < 0.005), indicating support for Hypotheses H_1 and H_2 . Information variables (β = 0.693, ρ < 0.000) was found to have significant effects on user's adoption for mobile financial services, However, usage variables and security variables do not have significant effects on user's adoption of mobile financials services, thus leading to the rejection of H_3 and H_5 .

Table 4: Summary of results

Hypothesized Paths			Estimate (β)	S.E.	ρ	Hypothesis
Trust Variables	\rightarrow	User's Adoption	0.527	0.057	**	H ₁ Accepted
Financial Variables	\rightarrow	User's Adoption	0.477	0.033	**	H ₂ Accepted
Usage Variables	\rightarrow	User's Adoption	-0.075	0.028	0.521	H₃ Rejected
Information Variables	\rightarrow	User's Adoption	0.693	0.068	***	H ₄ Accepted
Security Variables	\rightarrow	User's Adoption	-0.093	0.026	0.448	H₅ Rejected

Note: *** p < 0.001, ** p < 0.05. Source: SEM-Amos output.

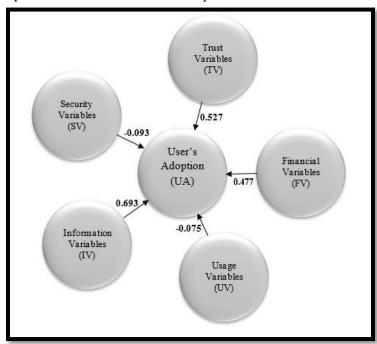


Figure 2: Result of Hypothesized Paths

4.3 Discussion

The study of how users of mobile financial services embrace and use new technologies in order to facilitate the spread and adoption of these services and their associated benefits This study revealed that trust variables, financial variables, and information variables have a significant positive effect on user adoption. Actually, this is the very first time we used the financial variable as a construct of user adoption of mobile financial service (MFS) and the relationship found as positive. Users are not comfortable adopting any change or modification about usage variables and security variables. Thus, the user prefers to attach with the homogeneous functionality and security is the major issue where there is always zero tolerance. Thus the study found rejected hypothesis results for usage and security variables.

5. Conclusion

This research into mobile financial service adoption is based on the theory of planned behavior (TPB) model. Mobile financial services researchers have conducted a large number of studies on customers' behavioral intent to utilize mobile financial services as a general and unique service channel. In adopting this approach, researchers in the fields of mobile financial service marketing and consumer behavior anticipated that the demand for customer support services across all of the different types of mobile financial services would be uniform and consistent. Yet, the present study established the existence of five different types of constructs, including trust, financial, usage, information, and security variables. The aforementioned research indicated that there is a positive correlation between the use of MFS and the variables of trust, finances, and information. Users often embrace consequential modifications that enhance their financial and nonfinancial rewards and features. Consumers are understandably anxious about the system's usability and security; after all, no one likes a cumbersome user guide or shoddy protections. Good security also entices customer and suggest that their money is safe here. Hence, it is the responsibility of policymakers and service providers to oversee issues concerning the use and safety of mobile financial services (MFS).

5.1 Practical Implications

The present research aids business practitioners in understanding how to effectively target an audience and offer for their needs and wants by implementing a suitable usage and security policy. Modern MFS users are savvier and better equipped to identify authentic recommendations. Finding the correct features and perks to use to drive MFS consumers is essential for a long-term strategy. Despite the fact that "recommendations from friends or family" consistently ranks as the most trusted source of information in market research surveys, the fact that users view influencers as an extension of a friend suggests that the question "why should I use mobile financial service?" is best answered by looking at the reasons why users themselves use such services (MFS).

5.2 Limitation and Future Research Scope

This investigation has certain limitation due to the exploratory nature of the study. Because of this, customers now associate it with a third-world nation. Consumers in industrialized nations may have vastly different priorities when it comes to various matters of security and privacy. The expectation and perception of MFS benefits and feature must varies from individual to individual. This study brought financial variables besides four independent variables and there will have further research to bring a few more new variables which have a very close connection with the users of mobile financial service (MFS). In order to gain a more nuanced understanding of how users' expectations compare to what they experience, future studies might account for the moderating impacts of demographic variables such as age, gender, education, income, and uncertainty avoidance.

Conflicts of Interest: The authors declare that they have no conflicts of interest.

Reference

- 1. Ahmed, S.M.S., Rayhan, S.J., Islam, M.A., Mahjabin, S., (2011). Problems and prospects of mobile banking in Bangladesh. Journal of Information Engineering and Applications, 1 (6), 16–34.
- 2. Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- 3. Akhter, N., & Khalily, M. A. B. (2020, August). An Analysis of Mobile Financial Services and Financial Inclusion in Bangladesh. Indian Journal of Human Development, 14(2), 213–233.
- 4. Al-Jabri, I. M., & Sohail, M. S. (2012). Mobile banking adoption: Application of diffusion of innovation theory. *Journal of electronic commerce research*, *13*(4), 379-391.
- 5. Al-Saedi, K., Al-Emran, M., Ramayah, T., & Abusham, E. (2020, August). Developing a general extended UTAUT model for M-payment adoption. Technology in Society, 62, 101293.
- 6. Ary, D., Jacobs, L., Razavieh, A., & Sorensen, C. (2009). Introduction to Research in Education (pp 426–427). Wadsworth: Engaged Publishing.
- 7. Atulkar, S., & Kesari, B. (2017, November). Satisfaction, loyalty and repatronage intentions: Role of hedonic shopping values. Journal of Retailing and Consumer Services, 39, 23–34.
- 8. Bamoriya, P. S., & Singh, P. (2011). Issues & challenges in mobile banking In India: A customers' perspective. Research Journal of finance and accounting, 2(2), 112-120.
- 9. Bangladesh Mobile Financial Services (MFS) Regulations, 2022 (PSD Circular No: 04/2022). (2022, February 15). Retrieved February 20, 2023,
- 10. Bansal, S., (2020). Issues and Challenges involved in the adoption of Mobile Banking [Doctoral thesis, Institute Of Management Studies And Research, Maharshi Dayanand University]
- 11. Bappy, T.A. and Chowdhury, R.S. (2020). Antecedents of trust in online banking: a Bangladeshi perspective. AIUB Journal of Business and Economics, Vol. 17 No. 1, pp. 41-66.
- 12. Baten, M. A., & Kamil, A. A. (2010, August). E-banking of economical prospects in Bangladesh. *Journal of internet Banking and Commerce*, 15(2), 1-10.
- 13. Beyene, E. (2020). Adoption and challenges of mobile banking systems in Ethiopia: The case of cooperative bank of Oromiya. African Conference on Information Systems and Technology. 5.
- 14. Browen, M., & Cudeck, R. (1993). Alternative ways of assessing model fit in testing structural equation model. *Mark Sci*, 18(2), 31-43.
- 15. Creswell, J. W. (2014). Research design: Qualitative, quantitative and mixed methods approach (4th ed.). Thousand Oaks, California: Sage Publications
- 16. Della Peruta, M. (2015). *Mobile money adoption and financial inclusion objectives: A macroeconomic approach through a cluster analysis* (No. 2015-49). Groupe de REcherche en Droit, Economie, Gestion (GREDEG CNRS), Université Côte d'Azur, France.
- 17. Devadevan, V. (2013). Mobile Banking in India–Issues & Challenges. International Journal of Emerging Technology and Advanced Engineering, 3(6), 516-520.
- 18. Doll, W. J., Xia, W., & Torkzadeh, G. (1994). A confirmatory factor analysis of the end-user computing satisfaction instrument. *MIS quarterly*, 453-461.
- 19. Fishbein, M., & Ajzen, I. (1977). Belief, attitude, intention, and behavior: an introduction to theory and research. Contemp Sociol, 6:244
- 20. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- 21. Foroughi, B., Iranmanesh, M., & Hyun, S. S. (2019). Understanding the determinants of mobile banking continuance usage intention. Journal of enterprise information management.
- 22. Ganguly, B., Dash, S.B. and Cyr, D. (2009). Website characteristics, trust and purchase intention in online stores:-an empirical study in the Indian context. Journal of Information Science and Technology, 6(2), 1-24.

- 23. Goyal, V., Pandey, U., & Batra, S. (2012). Mobile banking in India: Practices, challenges and security issues. International Journal of Advanced Trends in Computer Science and Engineering, 1(2).
- 24. Gu, J. C., Lee, S. C., & Suh, Y. H. (2009). Determinants of behavioral intention to mobile banking. *Expert Systems with Applications*, 36(9),
- 25. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate data analysis: Pearson College division. *Person: London, UK*.
- 26. Hasan, M. T. (2020). M-Banking: The Transaction Revolution in Bangladesh. Science Research, 8(4), 98.
- 27. Hasan. (2022, September 25). How innovations are transforming banking in Bangladesh. The Daily Star. Retrieved February 19, 2023, from www.thedailystar.net
- 28. Himel, M. T. A., Ashraf, S., Bappy, T. A., Abir, M. T., Morshed, M. K., & Hossain, M. N. (2021, August 3). Users' attitude and intention to use mobile financial services in Bangladesh: an empirical study. South Asian Journal of Marketing, 2(1), 72–96.
- 29. Internet Subscribers in Bangladesh. (2021, December). BTRC. Retrieved February 20, 2023, from http://old.btrc.gov.bd/content/internet-subscribers-bangladesh-december-2021
- 30. Islam, M.S., (2013). Mobile banking: An emerging issue in Bangladesh. ASA University Review, 7(1), 123 –130.
- 31. Islam, M.S., Karia, N., Khaleel, M., Fauzi, F.B.A., Soliman, M.S.M., Khalid, J., Bhuiyan, M.Y.A. and Al Mamun, M.A. (2019) 'Intention to adopt mobile banking in Bangladesh: an empirical study of emerging economy', Int. J. Business Information Systems, Vol. 31, No. 1, pp.136–151.
- 32. Islam, S. R., & Tareq, M. (2017). A Study on the Macro Economic Antecedents and Trends of Mobile Banking Services in Bangladesh. In Proceedings of the Tenth International Conference on Management Science and Engineering Management. Springer.
- 33. Jamshidi, D., Keshavarz, Y., Kazemi, F., & Mohammadian, M. (2018). Mobile banking behavior and flow experience. *International Journal of SocialEconomics*. Vol. 45 No. 1, pp. 57-81.
- 34. Jun, M., &, Palacios, S. (2016). Examining the key dimensions of mobile banking service quality: an exploratory study. International Journal of Bank Marketing, 34(3), 307–326.
- 35. Kahai, S. S., & Cooper, R. B. (2003). Exploring the core concepts of media richness theory: The impact of cue multiplicity and feedback immediacy on decision quality. *Journal of management information systems*, 20(1), 263-299.
- 36. Kaur, P., Dhir, A., Singh, N., Sahu, G., & Almotairi, M. (2020, July). An innovation resistance theory perspective on mobile payment solutions. Journal of Retailing and Consumer Services, 55, 102059.
- 37. Kim, G., Shin, B., & Lee, H. G. (2009, May). Understanding dynamics between initial trust and usage intentions of mobile banking. Information Systems Journal, 19(3), 283–311.
- 38. Kline, L.B., 2011. Principles and Practice of Structural Equation Modeling, third ed. Guilford Press, New York.
- 39. Laukkanen, P., Sinkkonen, S., & Laukkanen, T. (2008, September 5). Consumer resistance to internet banking: postponers, opponents and rejectors. International Journal of Bank Marketing, 26(6), 440–455.
- 40. Lee, K. C., & Chung, N. (2009, December). Understanding factors affecting trust in and satisfaction with mobile banking in Korea: A modified DeLone and McLean's model perspective. Interacting With Computers, 21(5–6), 385–392.
- 41. Lessons from the Field: Leveraging Mobile Financial Services to Accelerate Women's Financial Inclusion. (2017, November 30). worldbank.org. Retrieved February 20, 2023, from www.worldbank.org
- 42. Mobile Financial Services. (2022, November). Bangladesh Bank. Retrieved February 20, 2023, from www.bb.org.bd

- 43. Mohammadi, H. (2015). A study of mobile banking loyalty in Iran. *Computers in Human Behavior*, 44, 35-47.
- 44. Noor Khan, S. (2017). Factors Influencing Adoption and Usage of Mobile Banking: Bangladesh Experience. International Journal of Finance and Banking Research, 3(1), 1.
- 45. Nunnally, J.C., & Bernstein, I.H., (1994). Psychometric Theory. McGraw-Hill, New York.
- 46. Oliveira, T., Faria, M., Thomas, M. A., & Popovič, A. (2014). Extending the understanding of mobile banking adoption: When UTAUT meets TTF and ITM. *International journal of information management*, 34(5), 689-703.
- 47. Püschel, J., Afonso Mazzon, J., & Mauro C. Hernandez, J. (2010). Mobile banking: proposition of an integrated adoption intention framework. *International Journal of bank marketing*, *28*(5), 389-409.
- 48. Rahman, M. M. (2021, November 25). The Rural Users Challenges with Mobile Financial Services (MFS) In Bangladesh. Asian Journal of Management, 359–366.
- 49. Riquelme, H. E., & Rios, R. E. (2010, July 27). The moderating effect of gender in the adoption of mobile banking. International Journal of Bank Marketing, 28(5), 328–341.
- 50. Rouf, M. A., Babu, M. A., Khatun, M. A., Rasel, M., & Kumar, A. (2019). Measuring Customer's Satisfaction Level and Service Gap Between bKash and Rocket in Bangladesh.'. *American journal of marketing research*, 5(2), 29-35.
- 51. Saini, G. S. (2014). Mobile banking in India: Issues and challenges. Sai Om Journal of Commerce & Management, 1 (3), 30-37.
- 52. Salam, M. A., Saha, T., Rahman, M. H., & Mutsuddi, P. (2021). Challenges to mobile banking adaptation in COVID-19 pandemic.'. *Journal of Business and Management Sciences*, 9(3), 101-113.
- 53. Shankar, A., Datta, B., Jebarajakirthy, C., & Mukherjee, S. (2020, April 2). Exploring Mobile Banking Service Quality: A Qualitative Approach. Services Marketing Quarterly, 41(2), 182–204.
- 54. Shareef, M. A., Baabdullah, A., Dutta, S., Kumar, V., & Dwivedi, Y. K. (2018, July). Consumer adoption of mobile banking services: An empirical examination of factors according to adoption stages. Journal of Retailing and Consumer Services, 43, 54–67.
- 55. Shareef, M. A., Kumar, V., Kumar, U., & Dwivedi, Y. K. (2011). e-Government Adoption Model (GAM): Differing service maturity levels. *Government information quarterly*, 28(1), 17-35.
- 56. Sripalawat, J., Thongmak, M., & Ngramyarn, A. (2011). M-banking in metropolitan Bangkok and a comparison with other countries. *Journal of computer information systems*, *51*(3), 67-76.
- 57. Sumanjeet, D. (2010). The state of e-commerce laws in India: a review of Information Technology Act. *International Journal of Law and Management*, *52*(4), 265-282.
- 58. Sundararaj, J. (2022). Opportunities and Challenges on the Adoption of Mobile Banking Services. *Journal of Positive School Psychology*, *6*(8), 1951-1958.
- 59. University of Dhaka & Bangladesh Bank. (2017, December). An Impact Study on Mobile Financial Services (MFSs) in Bangladesh. Bangladesh Bank. Retrieved February 20, 2023, from www.bb.org.bd
- 60. Xie, J., Ye, L., Huang, W., & Ye, M. (2021). Understanding FinTech platform adoption: impacts of perceived value and perceived risk. J Theor Appl Electron Commer Res, 16(5), 1893–1911.
- 61. Yu, T. K., & Fang, K. (2009). Measuring the post-adoption customer perception of mobile banking services. *CyberPsychology & Behavior*, *12*(1), 33-35.
- 62. Zhou, T. (2013, January). An empirical examination of continuance intention of mobile payment services. Decision Support Systems, 54(2), 1085–1091.
- 63. Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in human behavior*, 26(4), 760-767.