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Users' attitude and intention to use mobile financial services in Bangladesh: an empirical study

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Abstract

Purpose – While the usage of mobile financial services (MFSs) is increasing rapidly in developing countries, research on users' attitudes and behavioral intention to adopt MFS is limited. Thus, this study aims to investigate customers' attitudes and intentions to adopt MFS from a Bangladeshi perspective.

Design/methodology/approach – A mixed research design was employed to conduct this study. Data of 196 respondents were analyzed using partial least squares (PLS) path modeling. For the quantitative part, data collection was conducted using non-probability sampling through a structured survey questionnaire. A focus group discussion with ten MFS users from divergent backgrounds was conducted to validate the quantitative findings.

Findings – This paper integrated both the technology acceptance model (TAM) and innovation resistance theory (IRT) to validate the results. The authors found that perceived usefulness (PU), perceived ease of use (PEOU) and perceived trust (PT) positively contribute to customers' attitudes toward MFS adoption. Besides, barriers to acceptance had unfavorable effects on users' attitudes and usage intentions. Furthermore, a focus group discussion revealed valuable insights on the constructs used in this study.

Practical implications – The study results have implications for both MFS providers and researchers. The outputs and recommendations presented in this paper will encourage the MFS practitioners to stimulate users' attitudes and behavioral intentions by ensuring useful, easy to use, credible and risk-free mobile payment platforms.

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Originality/value – This is one of the very few studies in Bangladesh that have taken a contemporary and emerging research topic, providing theoretical, methodological and practical contributions regarding the determinants and consequences of attitude toward using MFSs.

Keywords Attitude, Intention to use, Mobile financial service (MFS), Technology acceptance model (TAM), Innovation resistance theory (IRT), Barriers, Bangladesh

Paper type Research paper

Introduction

Over the years, the advancement of the Internet and mobile phones as a medium of transactions has been a global trend, resulting in a rising acceptance of mobile commerce (m-commerce) throughout the world (Rosa and Malter, 2003; Kumar *et al.*, 2019). Mobile financial service (MFS), one of the prominent aspects of m-commerce, provides financial assistance to the users, enabling them to transfer and collect funds, make deposits, or pay bills using mobile devices or software (Al Saedi *et al.*, 2020). This system, thus, has brought about a convenient, trustworthy, easy to use and secure transaction method for clients and agents alike (Chen, 2008).

Hence, studies on the predictors of MFS/m-banking user attitude and behavior have recently gained momentum in the academic and business community because such research can assist MFS marketers to devise and implement better strategic decisions required for customer acquisition and retention (Malik *et al.*, 2013; Saleh and Mashhour, 2014; Slade *et al.*, 2015; Abdinoor and Mbamba, 2017; Cui *et al.*, 2020; Manchanda and Deb, 2020). Using technology acceptance model (TAM) (Davis *et al.*, 1989) and other related behavioral theories, several past studies identified numerous crucial predictors, such as perceived usefulness (PU)/relative advantage/performance expectancy, perceived ease of use (PEOU)/complexity/effort expectancy, subjective norms, perceived functional and emotional benefits, consumer innovativeness, demographics, perceived risk, facilitating conditions and many more that can influence users' attitude and intention to use m-commerce/m-payment/MFS (Yang, 2005; Hsu *et al.*, 2011; Yen and Wu, 2016; Chi, 2018; Gupta and Manrai, 2019; Al-Saedi *et al.*, 2020; Jung *et al.*, 2020; Manrai and Gupta, 2020).

Nevertheless, most of these studies have been conducted from digitally advanced contexts, such as Singapore, India, China, Taiwan, or USA, where digital ecosystem is conducive to the adoption of MFS platforms (Sampaio *et al.*, 2017; Koh *et al.*, 2018; World Bank, 2019). In contrast, customers' digital behavior in a least developed country like Bangladesh is not as penetrated as in other neighboring, western or Southeast Asian contexts (Babar, 2017). Statistics suggest that in Bangladesh approximately 102.80 million customers are registered with several MFS service providers, such as bKash, Nagad, Rocket, Tcash, Ucash, to name a few (Bangladesh Bank, 2021). However, among them, only 34.64 million are active clients (Bangladesh Bank, 2021). Presently, only 1% of the daily payment is happing through digital methods/MFS, whereas the rate is around 60% in the developed countries (Digital Finance Forum BD, 2021). In addition, the country lags behind its major South Asian counterparts in terms of smartphone use (The Daily Star, 2021). Thus, MFS industry insiders in the country claimed that although registered MFS users in Bangladesh is increasing rapidly, the rate of inactive users is still high because of lack of user trust, network issues, users' fear of fraudulence, lack of interoperability, lack of digital literacy, to name a few (Yesmin *et al.*, 2019; Rashid, 2020). Therefore, the marketers are still somewhat unclear about their customers' attitude and usage intention (Rahman *et al.*, 2019). Although, scholars, such as Khan *et al.* (2021), recently attempted to explain M-banking App usage behavior in Bangladesh, it only focused on the trustworthiness ignoring several other relevant determinants of attitude and behavioral intent. Hence, there is a recognized need for further context-specific empirical prediction of users' attitude and MFS usage intention as the existing studies falls short of providing adequate direction to the practitioners regarding MFS consumer behavior.

To this end, the authors of this study planned to integrate an extended version of original TAM with innovative resistance theory (Ram and Sheth, 1989). There are several rationales

for using these models in this study. Firstly, although TAM is one of the most parsimonious and dominant theories in understanding the technology usage behavior (Venkatesh *et al.*, 2003), but the original model ignores how trust and barriers to acceptance affect the target variables of this study. Therefore, TAM was extended in this paper by employing the construct "perceived trust" (PT) because a recent paper argued that when Bangladeshi M-banking app users' show trust on the ability, benevolence and integrity of this system, their usage behavior is significantly and positively affected (Khan *et al.*, 2021). Secondly, to the best of researchers' knowledge, there is a dearth of study which investigated the relationship between acceptance barriers and their subsequent role on MFS users' attitude and behavioral intention, particularly from a digitally backward country like Bangladesh. Consequently, the authors believe that an integration of TAM with innovation resistance theory (IRT) can provide comprehensive evidence on the antecedents and consequence of attitude toward using MFS in Bangladesh.

Furthermore, this study addressed a methodological gap in the extant studies concerning MFS consumer behavior. It has been noticed that most previous studies on MFS customer attitude and behavior are either purely qualitative or purely quantitative in nature but research employing mixed methods is scarce. Thus, this study followed a mixed research method (both quantitative and qualitative) because it enables the researchers to harmonize the conflicting findings of the past studies on MFS customers' attitudinal and behavioral patterns.

Considering these gaps, the purpose of this paper is to investigate four research questions: (1) what are the antecedents of attitude toward using MFS? (2) What are the roles of user attitude and acceptance barriers in influencing MFS acceptance intention? (3) Do the predictors used in our research model affect MFS acceptance intention through attitude? (4) Are the quantitative results of the six constructs used in this study consistent with the insights extracted from focus group discussion?

The paper has been structured as follows: first, the authors have conducted a literature review to lay down this study's theoretical basis and to formulate the hypotheses. In the subsequent section, the researchers have discussed the research methodology in detail. Afterward, findings and discussion have been outlined, followed by implications of this study. Finally, the study ended with a description of this study's limitations followed by future directions.

Literature review

Theoretical foundation

Any hypothesized relationship in an empirical study should receive supports from prior theories or well-established models (Colquitt and Zapata-Phelan, 2007). The present study predicts Bangladeshi MFS users' attitudes and behavioral intentions through the TAM (Davis *et al.*, 1989). Inspired by the theory of planned behavior (Ajzen, 1991) and theory of reasoned action (Fishbein and Ajzen, 1975), TAM suggests that PU and PEOU of any technology or information system determine users' attitude, which further amplifies their behavioral intention (Davis *et al.*, 1989).

In this context of the present study, PU signifies how much users find it useful to adopt MFSs, while PEOU connotes how much they consider using MFS to be effortless. Furthermore, attitude indicates users' positive or negative beliefs or evaluations toward adopting MFS, while intention implies the probability that a user will accept MFSs.

However, the original TAM received numerous criticisms from several scholars in the past (Ajibade 2018). For instance, Legris *et al.* (2003) argued that TAM 1 and TAM 2 models, together, could not adequately explain the customers' attitude and technology usage intention. Therefore, scholars have always supported incorporating context-specific new determinants in the TAM (Popy and Bappy, 2020).

Since the launch of MFS in Bangladesh, consumers are experiencing numerous barriers that slow down their intention to adopt this payment system (Vota, 2017). There have been

several incidents where customers, agents and distributors had experienced thefts and security problems (Yesmin *et al.*, 2019), which have significantly affected their trust in the system.

Therefore, this study has employed the variables previously used in IRT to comprehend the resistance-based actions of the MFS users (Ram and Sheth, 1989). According to this theory, functional barriers (resulting from the features of the MFS) and psychological barriers (arising from the prevailing beliefs of users regarding mobile payments) can unfavorably influence customers' intention to adopt an innovation (Kaur *et al.*, 2020). Behavioral incongruity resulting from usage, perceived risks and perceived value of using a new system constitute functional barriers, whereas traditional beliefs and negative images of the innovation represent the psychological barriers.

Since prior studies have used IRT to examine the role of barriers in predicting intention to adopt m-payment (Jung and Jang, 2018; Kaur *et al.*, 2020), the present study has integrated this theory to supplement the traditional TAM. Furthermore, backed by prior studies, this study also conceptualizes that if the MFS users have a greater level of trust toward this system, they will present a higher-level of favorable attitude toward using it, which will further enhance their adoption intention (Castelfranchi and Falcone, 2010; Singh and Sinha 2020; Bappy *et al.*, 2020; Khan *et al.*, 2021).

Hypothesis development

Perceived usefulness and attitude toward using MFS. PU, hailed as one of the significant determinants of user attitude and behavioral intention for technology usage, signifies the degree to which one believes in technology as a driver to their increased productivity and performance (Davis *et al.*, 1989). In prior studies, this construct has been used as the primary antecedent of users' attitude toward using mobile banking services (Aboelmaged and Gebba, 2013; Raza *et al.*, 2017; Ghazali *et al.*, 2018). Besides, Mohammadi (2015) found that the mobile banking system's PU and efficiency positively affect Iranian mobile banking users' attitudes. Previous studies have revealed that customers in the developing economy like Bangladesh seek convenience in their technological usages, and PU is a predominantly crucial predictor of user attitude and m-commerce adoption (Islam *et als*, 2011; Rahman and Sloan, 2017). In particular, in the era of the corona pandemic, where contactless payment is required for safety, MFS providers in Bangladesh have experienced a boost due to a greater degree of PU and positive attitude (Kabir, 2020). Hence, keeping the preceding discussion in view, the researchers can hypothesize:

H1. Perceived usefulness of MFS is positively related to attitude toward accepting MFS.

Perceived ease of use and attitude toward using MFS. PEOU is stipulated as the ability to use a system without much effort (Davis *et al.*, 1989). PEOU is pondered as the variable to increase clarity, understandability and flexibility in using new technology (Segars and Grover, 1993). Studies showed that the learning ease brings confidence among the users about the experience, resulting in a positive attitude toward an innovation (Popy and Bappy, 2020). Extant works of the literature have found that the perception of ease leads the users to form a positive attitude toward adopting several technologies/systems, such as m-commerce (Indarsin and Ali, 2017; Ghazali *et al.*, 2018), mobile banking (Shaikh and Karjaluoto, 2015), cellular and contactless m-payment (Chen, 2008), online banking (Inegbedion, 2018) and many more. Similarly, authors, such as Hsu *et al.* (2011), provided empirical evidence that the ease of connectivity and ease of monetary transaction are prerequisites for developing a positive attitude toward accepting MFSs. Considering the overall discussion presented above, the authors can hypothesize:

H2. Perceived ease of using MFS is positively related to attitude toward accepting MFS.

Perceived trust and attitude toward using MFS. PT in this study reflects how much a user perceives that MFS adoption is safe and free from privacy issues (Liébana-Cabanillas *et al.*, 2017).

Previously, scholars used the construct "trust" to strengthen the TAM (Harland and Nienaber, 2014) and found that it is a significant predictor of customer attitude toward accepting innovations (Popy and Bappy, 2020). In particular, the role of trust in influencing users' attitude and intention is predominantly extensive in the context of e-commerce or m-payment, where uncertainty and risk have substantial effects on users (Ghazali *et al.*, 2018). This argument is further supported by previous studies of authors, such as Pavlou (2003) and Chemingui and Ben lallouna (2013), providing significant evidence that trust positively connects with users' attitudes, affecting their intention to use through reducing uncertainties linked with MFSs. Hence, trust is considered a reducer of risk and uncertainty in online transactions and online activities (Gefen, 2003; Chiu *et al.*, 2017), and it acts as an instrument in forming positive user attitudes (Chawla and Joshi, 2019). In the context of M-banking, Khan *et al.* (2021) found that perceived integrity, perceived benevolence and perceived ability can increase consumer trust. They argued that if customers perceive that MFS providers have the dexterity in handling users' personal funds, care about their clients and are honest in their promises; they will develop favorable outlook toward its usage, which in turn, will enhance the usage of M-banking apps (Khan *et al.*, 2021). In line with the preceding arguments, the authors hypothesize:

H3. Trust in MFS will have a significant positive effect on attitude toward accepting MFS.

Barriers to acceptance and its consequences. According to Ram and Sheth (1989), the adoption or learning of new technology might be hampered or delayed due to several functional and psychological barriers. Based on extant papers, the functional barriers linked with m-commerce/m-payment/MFS adoption include:

(1) Usage barriers: Difficulty in using and learning MFS (Laukkanen *et al.*, 2007)

(2) Value barriers: Higher costs than benefits (Kuisma *et al.*, 2007)

(3) Risk barriers: Typing bill information incorrectly, paying extra amounts, paying to incorrect receivers (Kaur *et al.*, 2020)

Furthermore, in light of the prior studies, psychological barriers linked with adopting m-commerce/m-payment/MFSs are as follows:

(1) Tradition barriers: Having technology anxiety resulting in apathy to alter the extant behavior (Meuter *et al.*, 2003), intricacy in communicating with the MFS providers, problems with having the troubles resolved (Kaur *et al.*, 2020)

(2) Image barriers: Negative image or perception that the use of MFS technology is complicated (Laukkanen, 2016).

According to preceding studies, these risks and barriers provoked users' resistance to innovation and created unfavorable user attitudes (Bryson and Atwal 2013), which subsequently result in a decrease in their intention to adopt mobile banking/m-payment/MFSs (Chemingui and Ben lallouna, 2013; Laukkanen, 2016; Kaur *et al.*, 2020; Pal *et al.*, 2020). Hence, the authors can hypothesize:

H4. Barriers of MFS are negatively related to attitude toward using MFS.

H5. Barriers of MFS are negatively related to intention to use MFS.

Attitude toward MFS and intention to adopt. As per the TPB, TRA and TAM, attitude is one of the significant predictors of consumers' behavioral intention (Fishbein and Ajzen, 1975; Ajzen, 1991; Davis *et al.*, 1989). This study defines attitude as the users' propensity to favorably or unfavorably evaluate MFS technologies. Recently, Chawla and Joshi (2019)

noted that the more favorable the attitude, the greater is the intention to adopt a mobile wallet. Furthermore, Foroughi *et al.* (2019) showed that attitude is a significant and positive contributor to the mobile banking continuance usage intention. Earlier, scholars, such as Lin (2011) and Deb and David (2014), empirically verified the positive influence of attitude on usage intention. Consequently, the authors can hypothesize:

H6. Attitude toward using MFS is positively related to intention to use MFS.

The mediating role of attitude. TAM posits that attitude is the path through which PU and ease of use affect users' behavioral intention (Davis *et al.*, 1989). Prior studies further showed that consumers' PT positively affects adoption intention through their attitude toward adoption (Popy and Bappy, 2020). To the best of the authors' knowledge, the mediating role of attitude in the relationship between barriers of acceptance and behavioral intention has not been studied adequately in the prior studies.

However, scholars such as Chemingui and Ben lallouna (2013) and Kaur *et al.* (2020) found a negative and direct relationship between adoption barriers and intention to use mobile payment systems. Besides, Bryson and Atwal (2013) noted negative and direct connections between technology adoption barriers (such as perceived risk) and attitude toward the adoption of Internet banking services. Furthermore, the path from attitude to intention to use mobile banking has previously been found to be positive and statistically significant (Chawla and Joshi, 2019; Foroughi *et al.*, 2019). Considering all these relationships, the authors can hypothesize:

H7. Attitude toward using MFS mediates:

(a) The positive relationship between perceived usefulness and intention to adopt MFS.

(b) The positive relationship between perceived ease of use and intention to adopt MFS.

(c) The positive relationship between perceived trust and intention to adopt MFS.

(d) The negative relationship between barriers to acceptance and intention to adopt MFS.

Considering the hypotheses of this study, the researchers have proposed the research model demonstrated in Figure 1.

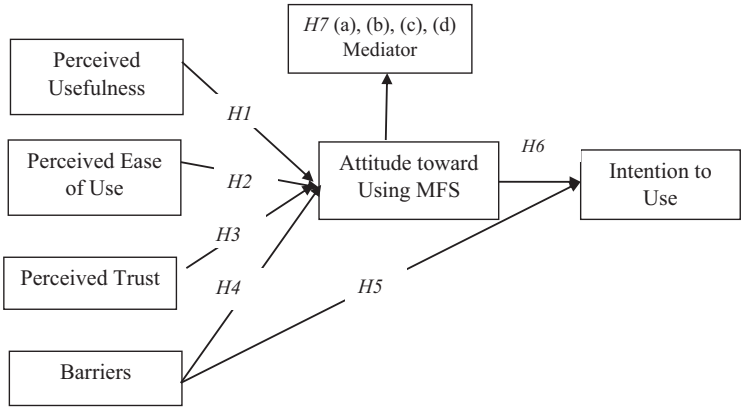

Figure 1.
Research model

Methodology

Research design

The study followed a mixed method, which incorporated both qualitative and quantitative approaches of research. In this cross-sectional study, the authors utilized a survey questionnaire to obtain quantitative data from the respondents. Besides, a focus group discussion with ten respondents from different age, background and profession provided the researchers with qualitative insights on the six constructs used in this study.

Measurement

Measurement scales were developed based on the literature of previous studies. The items representing PU and PEOU were adapted from Davis *et al.* (1989) and Chawla and Joshi (2019). The three indicators measuring PT were drawn from Ganguly *et al.* (2009) and Bappy and Chowdhury (2020). Besides, "barriers to acceptance" was estimated based on six items, among which one represents "value barrier", two represent "risk barrier", one item represents "usage barrier", one represents "tradition barrier" and one represents "image barrier". This research retained only the best indicators from the several barrier-related constructs used in Kaur *et al.*'s (2020) study to keep the scale short and straightforward. This practice of upholding the best indicators has been prescribed by Hayduk and Littvay (2012) in their study, claiming that the use of few best items enables researchers to develop conceptually advanced models parsimoniously. Hence, instead of using the total 16 items of Kaur *et al.*'s (2020) questionnaire, the authors decided to keep six indicators based on the opinion of thirteen mid-level executives from several MFS companies in Bangladesh. These six items represent five types of barriers used in IRT. Furthermore, three indicators evaluating users' attitude toward using MFS was extracted from Hu *et al.* (1999). Finally, the four items of the 'intention to use' construct were adapted from Chen and Barnes (2007).

Pre-testing and pilot survey

A structured questionnaire was used to collect data from respondents. Initially, the questionnaire was pre-tested with five respondents (the MFS users and two executives) to confirm that the questions' wording and sequence are correct, clear and understandable. Based on their feedback, the wordings of the questions were rephrased. Furthermore, the researchers conducted a pilot study with 20 participants (fifteen MFS users and five professionals serving in different MFS companies) to ascertain the research instrument's adequacy, reliability and feasibility (Teijlingen and Vanora, 2002). As per Hill (1998), this sample size for the pilot study is adequate. Considering the data obtained in the pilot survey, the authors calculated the scale items' internal consistency. The "Cronbach's alpha" scores for all the constructs turned out to be above 0.7 and were satisfactory.

Sampling and data collection

The respondents were scattered all around Bangladesh, but most of them were from Dhaka and Chattogram. The target population size is estimated to be 102.80 million MFS users (Bangladesh Bank, 2021). However, currently, the authors found no sampling frame listing the target group of respondents. A recent study suggests that it is difficult for social science researchers to use random sampling without a sampling frame (Krause, 2019). Hence, a non-probability sampling technique called, snowball sampling, was used for data collection in the main study. This technique was preferred as the data was collected during COVID-19 lockdown when it was hard to collect data using a field survey. Thus, the sampling technique used in this study can be justified.

Subsequently, an online survey questionnaire was used to obtain the opinion of the respondents. First, the online questionnaire was circulated to several people known to the researchers as MFS users. The selected people then shared the questionnaire with their

known ones who are currently using MFSs. The questionnaire's link was first circulated on 8 August 2020 and the responses were received till 20 August 2020.

The sample size was calculated with G*power 3.1 (Faul *et al.*, 2007) software using $f^2 = 0.15$(moderate), $\alpha = 0.05$ and number of predictors = 4 and the power = 80% (Gefen *et al.*, 2011). The G*power software recommended minimum sample size of 73 to test the model. The researchers obtained 220 responses from the respondents through online referrals, among which 24 responses were omitted during data screening due to straight liners, outliers and missing values. Finally, the sample size was fixed to be 196 to test the model. This sample size is sufficient to conduct partial least squares-structural equation modeling (PLS-SEM) analysis.

Besides, a complementary qualitative study using in-depth interview technique was conducted to obtain additional insights regarding constructs of research model depicted in Figure 1. As qualitative research works well even with a smaller sample size (Malhotra and Dash, 2016), the authors decided to select ten respondents using the judgmental sampling technique.

Data analysis

The measurement and structural model were evaluated with PLS-SEM technique using SmartPLS 3.2.6 software. PLS-SEM is a handy statistical tool for predictive reasons, works well with non-normal data and smaller sample size. This study's essential purpose was to develop an integrated theory to predict customers' attitudes and behavioral intentions. Therefore, PLS-SEM was preferred over covariance-based SEM. The respondents' demographic profile was analyzed by reporting counts and percentage using SPSS version 23 due to its ease of use.

Results and analysis

Demographic profile

After filtering 220 responses of the respondents, the study identified 196 reasonable opinions relevant to this study. The demographic characteristics (see Table 1) of respondents showed that most of the respondents were female and had an age category between 23 and 27 and are undergraduates. Furthermore, bKash appeared to be the most preferred MFS brand in Bangladesh.

Assessment of multivariate normality

This study ascertained whether the data is normally distributed or not because in case of non-normal data distribution, PLS-SEM should be used for evaluating causal path models. For evaluating multivariate normality, the authors investigated "multivariate skewness and kurtosis" using a statistical tool from a website named Web Power (WebPower, 2021). The outputs revealed that the data obtained in this study were not normally distributed as Mardia's multivariate skewness was $\beta = 2.954$, $p < 0.01$, and Mardia's multivariate kurtosis was $\beta = 30.064$, $p < 0.01$. Hence, the authors decided to utilize SmartPLS software because it is a "non-parametric" statistical data assessment tool.

Common method bias

The authors used Harman single factor test and the full collinearity test to investigate common method bias (CMB). The justification for choosing Harman single factor test is that it has been one of the easiest and most widely utilized techniques for detecting CMB (Podsakoff *et al.*, 2003), while full collinearity test has been preferred because it was found to be robust in identifying CMB from the perspective of PLS-SEM (Kock, 2015).

During Harman single factor test, the authors employed an unrotated exploratory factor analysis, which revealed that the first factor accounted for 35.947% variance (Table A2). Besides, using a full collinearity test, the authors observed that the VIF values for all the

	$N = 196$	%
Gender		
Male	79	40.3
Female	117	59.7
Age		
18–22	60	30.6
23–27	84	42.9
28–32	29	14.8
33–37	14	7.1
38–42	6	3.1
More than 42	3	1.53
Education		
SSC	3	1.5
HSC	26	13.3
Under graduation	100	51.0
Graduation	66	33.7
MPhil/PhD	1	0.5
Number of MFS user in family		
1 member	28	14.3
2 members	80	40.8
3 members	59	30.1
More than 3 members	29	14.8
MFS brand preference		
bKash	144	73.47
Rocket	66	33.67
Nagad	35	17.86
T-cash	16	8.16
UCash	7	3.57
mCash	2	1.02
Other	1	0.51

Table 1. Characteristics of respondents

latent constructs were less than 3.3, indicating that the model was not polluted by CMB (Kock, 2015).

Measurement model evaluation

In this study, the authors performed a confirmatory factor analysis (CFA) to evaluate the convergent and discriminant validity of six constructs: PU, PEOU, PT, barriers to acceptance, attitude and intention to adopt MFS. Since all the constructs showed high inter-item correlations (>0.5) and excellent composite reliability (0.887), they have been treated as reflective constructs in the present study.

Table 2 demonstrates the outputs of CFA, showing satisfactory reliability because the latent constructs' composite reliability values are above 0.7 (Hair *et al.*, 2016; Bappy *et al.*, 2020). Furthermore, the average variance extracted (AVE) of all the latent constructs are above the recommended cut-off point of 0.5, and item loadings are above 0.7, signifying sufficient convergent validity of all the constructs (Hair *et al.*, 2019a, b).

The authors evaluated the discriminant validity in light of the Fornell-Larcker criterion and HTMT ratio. As per the Fornell-Larcker criterion, "the square root of the AVE of each construct should exceed its corresponding correlation coefficients" (Fornell and Larcker, 1981). Besides, the HTMT ratio is recently being used as the latest standard for evaluating discriminant validity. According to Henseler *et al.* (2015), HTMT values of each latent

Construct	Item code	Item loadings	CR	AVE
Perceived usefulness	PU1	0.743	0.932	0.744
	PU2	0.876		
	PU3	0.872		
	PU4	0.814		
	PU5	0.861		
	PU6	0.834		
Perceived ease of use	PEU1	0.851	0.921	0.696
	PEU2	0.874		
	PEU3	0.891		
	PEU4	0.834		
Perceived trust	PT1	0.889	0.912	0.775
	PT2	0.876		
	PT3	0.875		
Barriers	Value barrier	0.797	0.887	0.568
	Risk barrier 1	0.720		
	Risk barrier 2	0.692		
	Image barrier	0.792		
	Usage barrier	0.797		
	Tradition barrier	0.718		
Attitude	ATT1	0.870	0.908	0.767
	ATT2	0.864		
	ATT3	0.894		
Intention	INT1	0.802	0.901	0.695
	INT2	0.840		
	INT3	0.867		
	INT4	0.823		

Table 2.
CFA outcomes

construct should be lesser than 0.85 to ascertain discriminant validity. The outputs of discriminant validity considering the Fornell-Larcker criterion and HTMT ratio are demonstrated in Tables 3 and 4, signifying satisfactory distinction among this study's latent variables.

	ATT	Barriers	INT	PEOU	PU	PT
ATT	0.836					
Barriers	−0.336	0.754				
INT	0.594	−0.393	0.833			
PEOU	0.587	−0.244	0.563	0.863		
PU	0.578	−0.353	0.534	0.586	0.834	
PT	0.578	−0.122	0.52	0.617	0.463	0.880

Table 3.
Fornell-Larcker criterion

	ATT	Barriers	INT	PEOU	PU	PT
ATT						
Barriers	0.355					
INT	0.695	0.428				
PEOU	0.674	0.245	0.651			
PU	0.653	0.376	0.608	0.649		
PT	0.668	0.122	0.612	0.709	0.517	

Table 4.
HTMT ratio

Structural model evaluation

The structural model has been used to assess the hypothesized relationships between the constructs of this study. While evaluating the structural model, the authors investigated the VIF, R^2, the significance of structural paths and the magnitude of the path coefficients.

The authors assessed the multicollinearity using VIF and found that VIF values for all the paths were less than 3.3, indicating no multicollinearity concerns. R^2 values for endogenous constructs, such as attitude toward using MFS and intention to adopt behavioral intention, were 0.502 and 0.395, respectively, revealing a satisfactory degree of in-sample explanatory power in social science research (Rasoolimanesh *et al.* 2019). Besides, the authors ran the blindfolding procedure using an omission distance of $D = 8$ to determine the path model's predictive relevance. To this end, Q^2 values of each endogenous construct (attitude and intention) were computed. As evident in Table 5, Q^2 values for endogenous constructs, such as attitude and intention, are above zero, indicating predictive relevance regarding the outcome constructs (Hair *et al.*, 2016).

Besides, the researchers employed bootstrapping with 5000 subsamples to ascertain the statistical significance of the path coefficients. Table 5 and Figure 2 show that the paths from PU to ATT ($\beta = 0.258$, $p < 0.05$), PEOU to ATT ($\beta = 0.205$, $p < 0.05$), PT to ATT ($\beta = 0.314$, $p < 0.05$), barriers to ATT ($\beta = -0.154$, $p < 0.05$), barriers to INT ($\beta = -0.218$, $p < 0.05$) and ATT to INT ($\beta = 0.594$, $p < 0.05$), are statistically significant and in the directions as postulated in the hypotheses. Therefore, H1, H2, H3, H4, H5 and H6 have been supported in this study. Furthermore, the relative size of the path coefficients as evident in Table 5 indicates that trust contributes most significantly to attitude, followed by PU, PEOU and barriers of adoption.

Table 5.
Hypothesis testing (direct effects)

Hypotheses	Paths	Std. beta	Std. error	p values	Bias-corrected confidence interval	Supported	VIF	Q^2
H1	PU → ATT	0.258	0.058	0.000	[0.151, 0.376]	Yes	1.692	
H2	PEOU → ATT	0.205	0.076	0.007	[0.051, 0.349]	Yes	1.997	
H3	PT→ATT	0.314	0.073	0.000	[0.165, 0.454]	Yes	1.669	
H4	Barriers → ATT	−0.154	0.067	0.021	[−0.279, −0.016]	Yes	1.151	0.362
H5	Barriers → INT	−0.218	0.068	0.001	[−0.348, −0.082]	Yes	1.123	
H6	ATT → INT	0.522	0.078	0.000	[0.363, 0.664]	Yes	1.123	0.259

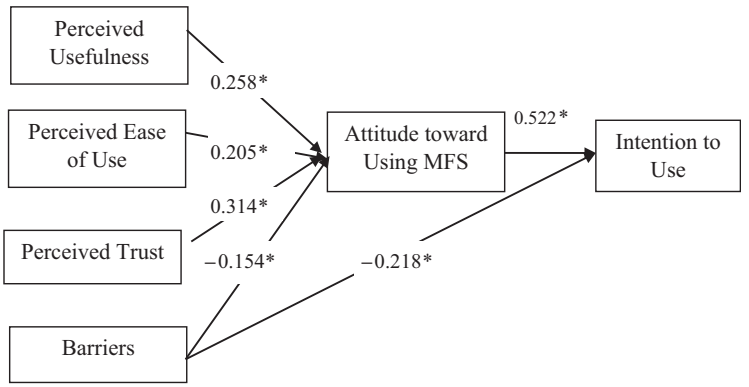

Figure 2.
Structural model

This study also assessed the indirect effects of PU, PEOU, PT and barriers to acceptance on the intention to adopt MFS through attitude toward using MFS. Table 6 outlines the results of specific indirect effects using the product of the coefficient approach. Table 6 shows statistically significant indirect effects ($p < 0.05$) for all the paths, providing substantial support for mediation (Preacher and Hayes, 2004; Zhao *et al.*, 2010). Furthermore, bias-corrected confidence intervals were used to verify the mediation effect (Memon *et al.*, 2018). Table 6 shows that zero does not appear between the indirect effects' confidence intervals, providing further empirical evidence for the mediation effect (Hayes, 2017; Popy and Bappy, 2020). As a result, H7 (a–d) have been supported.

However, this study did not test the relationships between exogenous constructs and endogenous construct (INT) while testing mediation. The reason is that assessing the significance of exogenous constructs → endogenous construct before or following an intervening effect is an old-fashioned and needlessly restrictive approach (Memon *et al.*, 2018), which defines the essential rule of parsimony (Aguinis *et al.*, 2016).

This study also checked the robustness of the structural model by investigating the probable nonlinear relationships according to the guidelines of Svensson *et al.* (2018). Studies in the past have highlighted the significance of checking nonlinear effects to ensure that the relationships are not incorrectly deemed to be linear (Rasoolimanesh *et al.*, 2017; Sarstedt *et al.*, 2019).To test nonlinearity, the authors determined the quadratic effects of 1) PU, PEOU, PT and barriers on ATT and 2) ATT and barriers on INT. The outputs of bootstrapping with 5000 subsamples reveal that none of the nonlinear relationships are statistically significant (Table 7). Hence, it can be stated that the linear relationships of the structural model are robust (Sarstedt *et al.*, 2019).

Insights from focus group discussion

The authors of this study conducted a focus group discussion with 10 participants from different ages, backgrounds and professions to cross validate the outputs obtained from quantitative study. The respondents were mainly asked a few open-ended questions regarding the constructs depicted in Figure 1. Some of the vital inquiries were as follows:

(1) Do you consider the features and advantages provided by MFS apps beneficial? Why or why not? Does its cost make it a less viable option for more frequent transactions? Do MFS features change your attitude and future usage intention?

Hypotheses	Indirect effects	Std. Beta	Std. Error	*p* values	Bias-corrected confidence interval	Supported
H7 (a)	PU → ATT → INT	0.135	0.036	0.000	[0.073, 0.219]	Yes
H7 (b)	PEOU → ATT → INT	0.107	0.045	0.017	[0.029, 0.202]	Yes
H7 (c)	PT → ATT → INT	0.164	0.047	0.000	[0.079, 0.266]	Yes
H7 (d)	Barriers → ATT → INT	−0.080	0.039	0.038	[−0.161, −0.010]	Yes

Table 6. Specific indirect effect

Nonlinear relationships	Coefficient	*p* value
PU*PU → ATT	0.019	0.482
PEOU* PEOU → ATT	0.049	0.243
TR*TR → ATT	0.023	0.384
BR*BR → ATT	0.017	0.743
ATT*ATT → INT	0.059	0.128
BR*BR → INT	0.023	0.493

Table 7. Checking nonlinearity

(2) Are MFS apps easy to use or are they complicated? Elaborately discuss what difficulties you experience in the process of using MFS apps?

(3) Do you consider MFS to be a safe platform for your regular transactions; especially for medium to large transactions? Why do you feel so?

(4) What barriers might discourage you from using mobile financial services in the future? Is lack of smartphone know how a challenge for the elderly of the family?

(5) Overall, express your attitude and intention to use mobile financial services. What factors are responsible for your current attitude toward MFS and usage behavior?

In response to these queries, the following excerpts are illustrative:

The discussion validated that usefulness and ease of use are still two of the prime reasons for customers' favorable/unfavorable outlook toward MFS system, encouraging/discouraging them to use the system. In response to the questions on PU and ease of use, one participant argued:

Participant 1# *"MFS system or apps help me substantially in my daily life activities. I can send/receive money, make payments at the shops, pay utility bills, purchase Internet packages, tickets, pay students' tuition fees, and many more using MFS apps. Overall, I love the system as it is easy to use and money exchange is secure. However, the cost of spending money is sometimes too high. Suppose, if I have to pay my credit card bills through a MFS service provider called bKash, I have to pay extra 200 plus BDT as charge. Despite that, I would say that the system is reducing my energy and time cost. Hence, there is no big reason why I should stop using the MFS system in the near future."*

The majority of the participants agreed with the aforementioned statement. However, two of the respondents stated that they are experiencing some difficulties while using the MFS platforms. They suggested that their attitude and future usage behavior might be negatively affected if those difficulties are not addressed. For instance, one respondent reported:

Participant 5# *"I use the MFS app of a service provider in Bangladesh for regular transactions. The app was somewhat user-friendly after first installation. However, these days, the app gets stuck on the loading screen more often than not. Sometimes, rebooting my device fixes the problem but other times, nothing helps. No matter how many times I try to log in, despite having no Internet issues, it would not just allow me to log in, which disappoints me a lot. If I regularly face such problems in the future, I would probably not recommend others to use such apps"*

This opinion was echoed by another participant who commented:

Participant 6# *"I am using a leading MFS account for more than one year and it was functioning well. But recently, it takes too much time to open. Besides, it wants me to keep the device location on and its QR code scanning facility does not always work. In addition, it cannot sometimes detect the MFS registered SIM card despite being in the first slot. Because of these issues, I have somewhat unfavorable attitude toward this system"*

Regarding trust/safety, participants endorsed that when users feel confident about the ability, benevolence and integrity of the MFS platforms to ensure safety, security and privacy of the users, their attitude and intention to use MFS becomes positive. But every participant collectively agreed that MFS providers should protect their clients from fraud gangs. For instance, one respondent mentioned:

Participant 2# *"I think MFS platforms can be trusted for transactions. I feel safe about it because I do not have to take out money physically and deliver it. So, I do not have to worry about any mishaps. Another thing is if I am very cautious while typing the phone numbers or bank account numbers, there is no risk of losing my money. But a lot more work needs to be done to aware users about potential mobile money theft. In my opinion, MFS marketers should constantly alert customers about the potential risks of sharing pin codes to anyone"*

During discussion, one elderly female respondent, nevertheless, mentioned that she does not trust MFS platforms after hearing news on mobile money thefts Whereas, rest of the members agreed that they have trust on MFS platforms and reiterated their willingness to use it.

In the discussion, when the researchers asked what barriers might cause negative user attitude and future usage behavior, different participants mentioned different obstacles. Some of the noteworthy barriers to acceptance that they reported include: *high cash-out charge, low Income of marginal people, lack of digital penetration and digital literacy, conservative policies, fraudulence, lack of support from the ecosystem, lack of Smartphone know how, to name a few.*

Subsequently, participants articulated their overall attitude toward using MFS as well as their future usage intention. They also expressed the reasons behind such attitude and behavioral intention. For instance, one informant reported that *I have favorable attitude toward MFS platforms because I can send money instantly to any part of Bangladesh with just a few taps on the mobile app or phone. In addition, it is easy to use for payment while purchasing from e-commerce platforms since it does require any paperwork or documentation. Besides, these platforms* have *reduced the need for carrying a large amount of cash, especially during Eid shopping"*.

Similar argument was proposed by another participant who said *that "I feel positive about MFS platforms since we can get discounts in restaurants, retail shops, super shops, and ride-sharing platforms by payment through them. Furthermore, they can be used to pay utility bills without standing in a long queue as well as paying university fees"*

In contrast, some respondents reported negative attitude. When the researchers asked the reasons behind their negative attitude, one participant replied: *"We cannot send money from one MFS platform to another. For example, we cannot send money from a bKash account to a Nagad account",* whereas other informants stated that "*It becomes very problematic to solve the issue of someone sending money to the wrong account as they do not take any prompt actions and requires so many explanations and documents. Moreover, fraud activities are going around by using the brand name of these platforms. Unfortunately, they were not taking any significant measures to stop these kinds of activities."*

In the end, one participant stressed that *"Considering all the costs and benefits, I am most likely to use these MFS in the future more significantly as it will be more convenient for me. However, MFS providers should lay more emphasis on solving the fraud issues that have been going on for a while the online payment from these platforms. Without doing that, I am most likely to lose my trust in those MFS platforms, and as a result, I will not keep a large amount of cash and will reduce my transactions levels.* All the members of the focus group discussion unanimously agreed with these statements.

Hence, considering the aforementioned excerpts obtained from focus group discussion, it can be stated that PU, PEOU, user trust positively influence MFS users' attitude where barriers negatively affect MFS customers' attitude and future usage intention.

Discussion

The study aimed to figure out the antecedents and consequences of attitude toward using MFS in Bangladesh by combining two theories, such as TAM and IRT. The facilitator factors influencing MFS users' attitudes include PU, ease of use and trust. The barriers of MFS adoption have been discovered as per IRT.

The outcomes substantiate that PU has a significant favorable influence on consumer attitude toward adopting MFSs in Bangladesh. This result differs from the Rahmiati and Yuannita (2019) but is broadly consistent with earlier studies of Raza *et al.* (2017), Tjuk and Hapzi (2017), and Letchumanan and Muniandy (2013). These findings confirm our prediction

that consumers who believe that using MFSs make their daily financial services effective and efficient and perceive that this contactless transaction will support them to conduct their economic activities smoothly and have a favorable attitude toward its usage. In Bangladesh, MFS platforms are, these days, collaborating with many other enterprises (banks, retail shops, restaurants, banks, e-commerce sites), enabling the users to conduct swift transactions. Besides, electric money is recorded in the app. These records have all the essential information about the transaction; the name of the payer, the name of the receiver, the date, allowing users to access their records at any time of the day. All these advantages lead to positive customer attitude toward using MFS system and vice versa.

The study further approves the hypothesis that PEOU of MFS positively affects consumers' attitudes. This result differs from the findings of Rahmawaty (2012) and Wang and Tseng (2011) but supports the studies of Singh and Srivastava (2018) and Popy and Bappy (2020). Hence, all being equal, consumers who find MFS's various functions and activities more straightforward and understandable have a positive attitude toward using MFS. Considering this result, the authors of the present study encourage the MFS app developers in Bangladesh to continue their endeavor to make the MFS apps easier to use for the users because our focus group discussion revealed that customers sometimes feel annoyance to type pin code every time during log in. Hence, the authors recommend using biometric support for this app (Face ID or Fingerprints) for speeding up the login process.

Moreover, the link between trust and attitude has been found to be positive and significant in this study. Prior scholars, such as Chemingui and Ben lallouna (2013), Permatasari and Kartikowati (2018), found similar relationships in their studies. Thus, it has been verified that consumer attitude is positive toward those MFS provides who make and keep plausible promises and are trustworthy. This research contributes valuable insights from Bangladeshi context to the current literature regarding the relationship between trust and attitude toward using MFS.The focus group discussion, in this study, revealed that currently, in Bangladesh, there is no apparent solution that guarantees full protection from hacking attacks. Hence, one of the most significant drawbacks of MFS in Bangladesh is its vulnerabilities. A mobile device or hardware token can be stolen; voice can be replicated, and iris scanners can be hacked. Moreover, hackers can apply "man-in-the-middle" attacks to intercept SMS to get access to an OTP. These issues should be addressed by the MFS authorities to develop more customer trust to influence their attitude.

Besides, barriers to acceptance were found to have a significant and negative impact on the MFS users' attitude and behavioral intention. Previous scholars, such as Laukkanen *et al.*, (2007) and Kaur *et al.* (2020), echoed the present study's findings. These relationships indicate that a higher degree of obstacles associated with MFS (usage barrier, value barrier, image barrier, risk barrier and many more) will create an unfavorable attitude and behavioral intention among the MFS users in Bangladesh. Presently, there are a number of technical issues in the country that can prevent the users' from adopting the MFS platforms. Internet and server problems, such as poor signal connection, can disable online payment method. In addition to this, some banks in Bangladesh block the international transactions for security. So far, it is not possible to deposit money into bank by using MFS nor is it possible to pay large sum of money using MFS because of the payment limitations imposed by service providers. In short, all these barriers, including the ones analyzed through survey, leads to negative customer attitude and behavioral intention.

Besides, this study demonstrated that whether or not consumers are intended to use MFSs depends on their attitude toward using MFS. This is opposite to what has been found by Wang and Tseng (2011). Furthermore, the paper established that positive effects of PU, PEOU and trust, and adverse effects of barriers on MFS adoption are mediated by attitude. These results also confirm several antecedent scholarly works of Renny *et al.* (2013), Elkaseh *et al.* (2016). Hence, MFS service providers should devote their dollars, creativity and energy

in forming favorable attitude of the customers toward using MFS technology by solving their complaints and providing them superior user experience.

Implications

Theoretical implications

The study pointed out several theoretical implications. First, the authors modeled the predictors of attitude and intention to use MFSs utilizing an elaborated version of TAM, adding two additional antecedents: barriers and trust. Backed by IRT, this paper shows that barriers associated with using MFS are likely to result in unfavorable user attitudes, leading to a lower degree of MFS adoption intention. Second, the inclusion of new constructs in the original TAM model demonstrated adequate explanatory power and predictive relevance, explaining the attitudes and behavioral intention of Bangladeshi MFS users. Third, while previous studies that used the TAM model mostly evaluated the mediating role of attitude in the relationship for PU and PEOU, and trust with intention, this study provided additional insights regarding the mediating effect of attitude in the negative relationship between barriers to adoption and MFS adoption intention. Thus, this paper integrates the TAM and IRT and adds to the existing knowledge related to technology adoption intention.

Methodological contribution

This paper has employed an advanced statistical tool called SmartPLS 3.2.6 to predict and evaluate a confirmatory model using the PLS algorithm as the collected data were not normally distributed. Previous studies on MFS adoption primarily focused on the quantitative investigation of the causal relationships. However, the present study applied a mixed method (quantitative followed by qualitative approach) to obtain better insights regarding the findings obtained from path model investigation.

Managerial implications

MFS is not a new technology in a developing country like Bangladesh. It has been a decade that the people of Bangladesh are acquainted with the service. The study aimed to determine why the people of Bangladesh accept MFSs so vigorously. On the contrary, the barriers have also been identified to explain its slow growth and potential threats. The first managerial implication is for managers to focus more on the perceived ease of using an MFS technology. If users find it easy to learn and use MFSs, it becomes useful and trustworthy. This finding of the study denotes that the easiness of the technology helps to create trust among consumers. Many participants believe that clear, straightforward, understandable and flexible MFSs grow trust among the MFS users swiftly. The degree of easiness of technology also increases the usefulness dimensions of technology. As per users, if the technology is easy to use and learn, then users increase the usage of that technology in their daily life. So, the development of user-friendly technology (e.g. app, website, or USSD) is a prerequisite to promote PU and trust in MFSs among users.

Besides, every precaution must be taken by the MFSs providers and government to make the service trustworthy among the users. To develop trust among users, MFS providers must keep what they have promised in their value propositions. They must keep users' concerns in their minds whenever they formulate any policy or rule. Barriers are negatively influencing consumer intentions to use MFS. The existing barriers are refraining potential users from accepting the new technology. So, the players of MFSs must work with the government to mitigate impediments as soon as possible. The MFS providers also need to hear the voices of the consumers. Hence, they should come up with some solutions for receiving the complaints and grievances of consumers.

Conclusion, limitations and future research directions

MFSs are proliferating in Bangladesh. This emerging sector is complementing the current financial sectors and acting as a new player in the economic sector of Bangladesh.

In this study, the authors empirically verified the antecedents of users' attitudes toward adopting MFS services and its subsequent effect on their adoption intention. The researchers observed that PU, ease of use and trust contribute positively and significantly to attitude toward using MFS. Besides, barriers to adoption were found to have negative and significant effect on attitude and intention. Finally, mediating role of attitude in the relationship between predictor constructs (PU, PEOU, PT, barriers) and intention to adopt MFS has been established.

Overall, this paper showed theoretical, methodological and practical contributions. The authors believe that the research model tested in this paper will provide the practitioners enhanced insights on Bangladeshi users' attitude and MFS adoption intention, which will further assist the MFS practitioners to execute successful marketing campaigns, conduct appropriate positioning and carry out applied marketing research for the MFS industry.

However, the study contains a number of limitations. First, the sample size was relatively small, and the authors employed a non-probability sampling technique, which can sometimes produce biased results. Further studies should replicate and validate the present study's findings using a probability sampling method and a larger sample size to generalize the findings. Second, this is a cross-sectional study where data has been collected only once during a particular period. In the future, longitudinal studies can be carried out to identify the changes in customer attitudes and intention to use MFSs. Besides, a cross-cultural study might be conducted to ascertain the extent to which MFS adoption rates vary across countries. Third, this study evaluated only the behavioral intention of the users. However, the differences between usage intention and actual usage behavior are well-established in the prevailing academic literature (Venkatesh *et al.*, 2003). Therefore, future studies should attempt to predict users' actual MFS usage utilizing the constructs employed in this study. Additional constructs, such as perceived enjoyment, perceived experience and system quality, might also be incorporated into the existing model to enrich its predictive power. Fourth, this study tested only the nonlinear effects for detecting the robustness of PLS-SEM results. Future studies should investigate the unobserved heterogeneity, endogeneity in a structural model estimating MFS adoption intention. Besides, empirical test, such as confirmatory-tetrad analysis, can be employed to ascertain whether the constructs are formative or reflective in nature.

Despite having numerous limitations, the authors believe that this study has covered a timely research domain, showing how MFS users' attitudes and behavioral intentions can be influenced. Thus, future researchers might consider this study as an impetus for evaluating consumers' behavior patterns in the MFS industry.

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Further reading

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Appendix

Construct	Item Code/ Name	Statements	Adapted from
Perceived usefulness	PU1	Using mobile financial services (bKash/ Rocket/Nagad/mCash/t-cash/Ucash etc.) increases my daily productivity	Davis *et al.* (1989), Chawla and Joshi (2019)
	PU2	I Believe MFS is useful for conducting transactions	
	PU3	I Believe using mobile financial services would improve my efficiency of transactions	
	PU4	Mobile financial services help me to send and receive money more quickly	
	PU5	Mobile financial services facilitate contactless payment	
	PU6	Overall, I think using a MFS would improve my performance	
Perceived ease of use	PEOU1	Learning to operate a mobile financial service would be easy for me	Davis *et al.* (1989), Chawla and Joshi (2019)
	PEOU2	I Would find it easy to get mobile financial services to do what I need to do in my daily financial transactions	
	PEOU3	I Like the fact that payments done through mobile wallets require minimum effort	
	PEOU4	I Believe it is easy to transfer and receive money through mobile financial service as minimum steps are required	
Perceived trust	PT1	I Have confidence that transactions through MFS is reliable	Ganguly *et al.* (2009), Bappy and Chowdhury (2020)
	PT2	I Believe mobile finance service providers keep customers' interests best in mind	
	PT3	I Believe mobile financial services keep their promises and commitments	
Barriers to acceptance	Value Barrier	MPS does not offer many advantages compared with handling my financial matters in other ways	Kaur *et al.* (2020)
	Risk Barrier (1)	I Fear that while I am using an MFS, I might type the information of the bill incorrectly	
	Risk Barrier (2)	I Fear that while I am using an MFS, I may pay more money to the wrong vendor	
	Image Barrier	I Have such an image that an MFS is difficult to use	
	Usage Barrier	I Believe learning and using MFS is a complicated process	
	Tradition Barrier	Due to my lack of technical knowledge, I find it difficult to get my problem resolved from an MFS provider	
Attitude toward using MFS	ATT1	I Believe that using mobile financial services is a good idea	Hu *et al.* (1999)
	ATT2	I Think that using mobile financial services is pleasant	
	ATT3	I Believe that using mobile financial services is beneficial to monetary transactions	

(*continued*)

Table A1. Scale items adapted from prior studies

Construct	Item Code/ Name	Statements	Adapted from
Future usage intention	INT1	I Would like to continue doing transactions using mobile financial services	Chen and Barns (2007)
	INT2	It is very likely that I will use my mobile financial services	
	INT3	I Will frequently use mobile financial services in future	
	INT4	I Intend to recommend others to use mobile financial services	

Table A1.

Note(s): Items have been reworded to fit the context of this study

Total variance explained

	Initial Eigenvalues			Extraction sums of squared loadings		
Factor	Total	% Of variance	Cumulative %	Total	% Of variance	Cumulative %
1	8.848	38.470	38.470	8.268	35.947	35.947
2	3.370	14.650	53.120			
3	1.833	7.972	61.092			
4	1.228	5.340	66.432			
5	1.057	4.594	71.026			
6	0.747	3.250	74.276			
7	0.671	2.919	77.194			
8	0.611	2.656	79.850			
9	0.507	2.203	82.054			
10	0.457	1.989	84.042			
11	0.424	1.842	85.884			
12	0.391	1.701	87.585			
13	0.356	1.547	89.132			
14	0.348	1.514	90.646			
15	0.330	1.435	92.081			
16	0.316	1.372	93.453			
17	0.272	1.181	94.634			
18	0.262	1.137	95.771			
19	0.240	1.045	96.816			
20	0.222	0.966	97.782			
21	0.205	0.890	98.672			
22	0.182	0.790	99.462			
23	0.124	0.538	100.000			

Table A2.
Results of EFA

Note(s): Extraction method: Principal axis factoring

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