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Exploring Antecedents of Rural Users' Continuance of Use Intention Toward Mobile Financial Services in Bangladesh: Deployment of Expectation Confirmation Model

Md. Benzeer Rizvee [1], Md. Nur Alam Siddik [2,*] and Sajal Kabiraj [3]

[1] Department of Finance and Banking, National University, Gazipur 1704, Bangladesh; brizveefinnbank@gmail.com
[2] Department of Finance and Banking, Begum Rokeya University, Rangpur 5404, Bangladesh
[3] Strategy & International Business, Faculty of Business and Hospitality Management, LAB University of Applied Sciences, Mukkulankatu 19, 15101 Lahti, Finland; sajal.kabiraj@lab.fi
* Correspondence: mnas@brur.ac.bd

Abstract: Numerous studies have focused on the phases of technology adoption or acceptance, while little consideration has been given to rural users' intentions to continue using the technology. Emphasizing this reality, the study has investigated the antecedents that exert ascendancy on rural communities' inclination to continue using mobile financial services. This paper conceived the theoretical model based on the expectation confirmation model. Participants in this study were 400 Bangladeshi rural users who were continuously using mobile financial services. For the sake of data analysis, utilizing a structural equation modeling approach, R version 4.4.1 software was deployed. The robust findings show that users' satisfaction with mobile financial services was significantly influenced by perceived value, perceived risk, perceived cost, government support, and perceived trust. Furthermore, satisfaction demonstrated a substantial and positive influence on the continuance of use intention. Theoretically, the study expands on ECM by adapting the concept to the technological and socioeconomic realities of rural Bangladeshi users, developing digital financial inclusion by investigating the crucial antecedents of satisfaction toward continuance of use intention through evaluation. Practically, service providers may yield strategies to increase the users' satisfaction, which will escalate continuous use intention.

Keywords: mobile financial services; mobile banking; financial technology; expectation confirmation model; expectation confirmation theory

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1. Introduction

Mobile financial services (MFS) make it simpler and more favorable for users to govern financial operations on a large scale from any location by settling real-time online transactions (Uddin & Nasrin, 2023). MFS is now the simplest and most practical way for Bangladesh's underbanked and lower-income populations to access financial services due to the growing digitalization of the financial service industries, the rise in mobile device users, and the accessibility of networks and internet connectivity (Bangladesh Bank, 2022). By facilitating financial transactions, MFS has transformed the lives of Bangladeshis, especially those who are economically underprivileged (Al Amin et al., 2023). Again, quality and well-being are crucial to financial inclusion because quality ensures that financial products and services meet customers' needs and preferences and that product development takes these needs into account (Roa, 2015), and that well-being reflects the tangible impact

that financial services have on consumers' lives. Consequently, since better quality engages users and increases satisfaction, it can be claimed that quality closes the gap between access to financial services and their actual use. Probably due to these causes, MFS have expanded to nearly every region of the nation within a short span of time, focusing on low-income and unbanked individuals.

Dutch Bangla Bank Limited introduced MFS in Bangladesh for the first time on 31 March 2011. Following the bank-led model, thirteen MFS providers in Bangladesh function for remittance inbound, cash-in and cash-out transactions, utility charges, government payments, business payments, and other purposes (Hassan et al., 2022). Bangladesh has achieved notable progress in promoting financial inclusion and granting affordable financial services to all classes of people, including the underprivileged and poorer rural communities. With 20% of females and 45% of males among its entire population, Bangladesh leads Asian nations in mobile money account ownership, as stated in "State of the Industry Report on Mobile Money 2023". Instead, Bangladesh is far from African nations' penetration rate of financial inclusion. Africa leads other continents with 906 million registered MFS account ownership and 942 billion transaction value, compared to the global total of 1.7 billion registered accounts and 1.4 trillion transaction values (GSMA, 2024). Nevertheless, by the end of October 2024, there were 1,544,573.2 million MFS transactions and 234.25 million registered MFS users overall. Of these, only 87.20 million were active, or 35.94% of all registered users (Bangladesh Bank, 2024). This scenario shows a state of deterioration in more extended use of MFS due to different factors. Surprisingly, according to the report on Socio-Economic and Demographic Survey 2023, the Rangpur division, consisting of eight districts, has the highest number of MFS accounts among the eight divisions, with 28.10% of its population utilizing these services, (out of this the majority 67.45% resides in rural areas) and it remains the poorest division of Bangladesh (Bangladesh Bureau of Statistics, 2024).

The future development of MFS platforms in developing nations like Bangladesh profoundly relies on overall government support. Public institutions help to ensure MFS technology's availability and excellent trustworthy service for rural users. More government support for the MFS industry would lead to increased confidence in the sector, resulting in better user satisfaction. External institutional support from the government may bring pivotal dimensions to ECM, which details how such support affects MFS user satisfaction for sustained service engagement. The ECM does not address how users perceive the risks affecting their satisfaction after system adoption. The development of frameworks through the incorporation of perceived risk may provide an understanding of how user concerns affect MFS continuance behavior. The issue becomes relevant in rural areas, since these populations often display low online competence while demonstrating limited technological confidence. The perceived cost is regarded as a precursor to the development of satisfaction concerning MFS. Individuals residing in rural regions undergo significant financial obstacles that necessitate cost assessment for their service utilization. Adding perceived cost analysis to the ECM improves its practical usefulness, particularly when financial constraints determine technology user experiences. The MFS platform trust perceived by users consists of their trust in service provider competence and platform security, which leads to satisfaction. The ECM framework would gain additional value from perceived trust because rural users require the MFS platform trust to feel comfortable and maintain their presence in such environments. Though prior research identified different factors that influenced the continuous usage of MFS, hardly any study specifically focused on the reality of rural regions (Ikhsan et al., 2023; Saima et al., 2024). Thus, it is necessary to assess principal antecedents affecting users' satisfaction toward continuance of use in rural communities. To fill the research gap, this study has developed a unique

model by incorporating institutional trust and affordability concern within the ECM model in rural contexts and tried to identify influential factors that contribute to continuous usage. Therefore, this study comprises two objectives:

I. To explore the significant determinants of satisfaction in a rural MFS context;
II. To investigate the impact of satisfaction on the continuance of the use of MFS.

Theoretically, the extension of ECM will improve its applicability by including socio-economic and contextual elements that affect rural users' satisfaction towards continuance of use intention. ECM often ignores external variables like trust, risk, and cost, especially in rural areas with poor infrastructure, financial literacy, digital adoption, and financial restraints. By adding these antecedents, the study will expand ECM beyond urban or technologically sophisticated environments to better explain MFS users' continuing intention in undeveloped countries. Practically, this extension of the ECM model will enable service providers to customize their offers and ensure that government policies fit users' preferences, promoting increased engagement and sustained adoption of MFS in rural regions.

2. Literature Review

In the contemporary world, the typology of MFS comprises three leading forms: mobile banking, mobile payments, and mobile money (Gbongli et al., 2020; Gupta & Dhingra, 2022). For this study, these terms are considered as MFS. MFS is the denomination that explains the caterer's services to its clients via mobile devices or personal digital help (Naruetharadhol et al., 2021). It can also refer to a product or service offered by a bank or a microfinance institute (bank-led model) or mobile network operator (nonbank-led model) for conducting financial and nonfinancial transactions using a mobile device, namely a mobile phone, smartphone, or tablet (Shaikh & Karjaluoto, 2015). In technology adoption, users' strong impulse to utilize a newly invented technology is based on their views about it, which determines whether or not they embrace it (Davis, 1986). While technologically enabled financial innovation offers enhanced convenience, it is not the only facet of the narrative. This provides a unique opportunity to incorporate more citizens into a sustainable framework by granting them quality access to financial services, such as payments and transfers, credit, savings, asset management, and insurance (De Mariz, 2022). The creation of positive beliefs is apparent, which in turn fosters adoption. In case of the creation of a negative belief due to riskiness, lack of trust, high cost, and inertia, a reverse result may take place. Post-adoption experience is necessary for developing a response regarding satisfaction towards technology usage. Users' responses to the discrepancies between their preconceived notions and the actual effective functioning of the service after using it are known as satisfaction (Tse & Wilton, 1988). It is a psychological result of users' responses to MFS about their anticipated emotions (Gupta et al., 2020). Hence, a user is likely to be satisfied when actual functioning reaches or outperforms their expectations, and they are likely to be dissatisfied if the accurate functioning falls short of their expectations (Oliver, 1980). Thus, after experiencing technology, if users identify that the outcomes reach the expected level, satisfaction advances progressively afterwards. Continuing to use intention is a measure of a user's perceived willingness to use MFS over a stretched period (Uddin & Nasrin, 2023). Over time, users' emotions, feelings, realizations, choices, and willingness may change along with the technology. But, for users, satisfaction is a pivotal determinant of MFS's continued use intention (Franque et al., 2020). While dissatisfied users are more inclined to rethink the current relationship and search for comparatively better alternatives, satisfied users are more supposed to fortify the association with a specific service caterer (Al Amin et al., 2023). Thus, it can be said that satisfaction yields continuance of the intention to use MFS.

In a study on mobile banking users in a single Indonesian province, Rokhimah and Suhermin (2024) showed that satisfaction, customer experience, perceived usefulness, and confirmation all had meaningful yielding on users' intentions to continue using MFS. It was discovered that the security component increased user satisfaction by moderating the connection between perceived usefulness and satisfaction. This research fails to clarify if the security pertains to MFS users' data safety or transaction safety. External elements such as economic and social changes and regulatory events remain unconsidered regarding MFS continuance intentions. This research uses cross-sectional data, so it cannot establish direct cause-effect relationships between the analyzed variables.

By deploying a purposive sampling technique to collect data from 455 suburban Bangladeshi people, the study of Al Amin et al. (2023) conducted quantitative research. The research revealed that information, service, and system quality are important determinants of satisfaction and continuance intention toward MFS. The research data were collected during the COVID-19 pandemic, so the observed behavioral patterns might not reflect typical occurrences in normal conditions. Thus, expansive external applications of these outcomes are challenging to achieve. All data obtained from a single group of respondents exposes the research to the impact of common method variance.

Using a quantitative research methodology, Akter et al. (2023) recognized that fintech literacy influences user satisfaction and continuous use intention of MFS. Additionally, it acknowledged that user satisfaction mediated the connection between fintech literacy and sustainable intention to use. The study focused exclusively on bKash account holders and collected data from 200 responders by deploying purposive sampling in the Khulna area of Bangladesh. The research analysis depends heavily on limited urban student self-reports, thus creating potential biases that restrict the extension of findings to broader age demographics. No result is provided regarding monitoring how MFS users use the platform beyond its initial testing phase in real-world settings.

Rabaa'i and ALMaati (2021) extended the ECM to explore users' post-adoption behavior towards mobile banking services in Kuwait. This quantitative research used convenience and quota sampling to collect data from 303 respondents. The findings revealed that effort expectancy, satisfaction, perceived trust, performance expectancy, and self-efficacy influence users' continuance intention. Performance expectancy and confirmation were found to have the highest impact on satisfaction, while perceived trust was a crucial determinant for users' willingness to continue using mobile banking. The research examined users from a country with advanced technology infrastructure and tech-forward citizens, this might not reflect the user experience in other nations without similar technological practices. A demographic which is primarily knowledgeable about mobile technology and the age bias affects the generalization of the study due to the predominance of respondents under forty years old.

Following the examination of data derived from 529 participants, a quantitative investigation elucidated the determinants that affect the sustained utilization of MFS within the context of Bangladesh. User satisfaction exhibited a considerable influence on the intention to continue usage when juxtaposed with perceived usefulness. Expectation confirmation was found to exert an indirect effect on the intention to continuous use. Moreover, perceived self-efficacy and perceived credibility emerged as significant predictors of both satisfaction and the intention to continue usage (Saima et al., 2024). The study dedicates its analysis to the COVID-19 pandemic effects that restricted its research findings from general application beyond pandemics or outside cultural environments. Other noteworthy variables affecting continuance intention that could be relevant in Bangladesh's situation, such as cost rationality and trust issues, remain outside the scope of the study despite its inclusion of ECM and Health Belief Model (HBM) key variables. This research

omits an analysis of MFS usage intention patterns between demographic populations (including gender, age, and income level).

Expectation Confirmation Theory (ECM)

Extending on Expectation Confirmation Theory (ECT), Anol Bhattacherjee presented the ECM in 2001. ECT was initially employed in marketing to examine user satisfaction and decision-making processes. It was derived from social psychology and consumer research (Oliver, 1980). ECM mainly focused on the post-use or post-acceptance aspects to explain usage continuance. Where congruence between expected and actual performance is known as confirmation (Bhattacherjee, 2001), satisfaction gleams the degree of expectation corresponding to experience and perceived usefulness. Perceived usefulness shows the cognitive belief of users (Kang & Lee, 2010). ECM depicts a noteworthy positive association between satisfaction and continued usage. The initial expectations and confirmation or disconfirmation of those anticipations following the initial engagement represent two critical antecedents to the satisfaction construct. Expectations serve as a foundational reference point, an anchor for subsequent evaluations of the system's performance (Shukla et al., 2023). ECM is one of the well-known models used in numerous studies to compare the link between user satisfaction and continuance of use (Al Amin et al., 2023). Despite having a strong theoretical foundation, when ECM comes to understanding post-adoption dynamics, it has been proven to be economical (Gupta et al., 2020).

Previous research used the ECM framework, concentrating on typical banking services considering urban and suburban realities in different contexts. Even these researchers ignored the rural users' MFS-using sensibilities. Therefore, there is a rarity of research focusing on rural communities. To fill this research gap, the study employed the interplay of dominant variables like perceived value, perceived cost, perceived risk, government support, perceived trust, and satisfaction in explaining rural users' continuance of use intention towards MFS. Figure 1 shows research on the model.

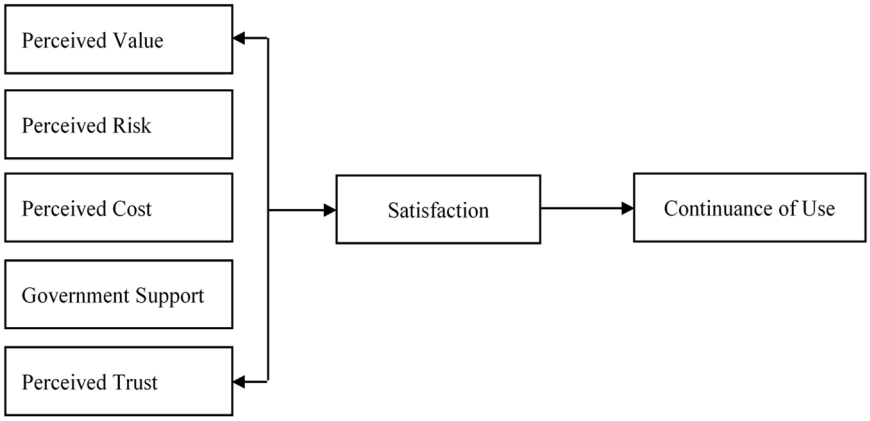


Figure 1. Research Model.

3. Hypothesis Developments

The research framework has been developed based on ECM. Since Bangladesh is a developing country, attention ought to be paid to the development, flourishing, and widespread use of MFS so that a more significant amount of the population may benefit from financial services with a minimum of effort, cost, risk, and assistance from the government, especially those without banking facilities and dwelling in rural communities. Considering these issues, this research adds variables to measure satisfaction, leading to the continuance of the use of MFS.

3.1. Perceived Value

The higher perceived value indicates an increased desire to adopt MFS since users' sense of value is a pivotal driver of adoption intention (Kim et al., 2007). The users' overall judgment of the usefulness of MFS, based on perceptions of what is sacrificed (costs) versus what is gained (benefits), is known as the perceived value in the setting of MFS (Rivière & Mencarelli, 2012). It shows a trade-off between the advantages of using the service and the costs incurred in obtaining and utilizing it (Ye et al., 2014). This trade-off is cognitive, which depends on the context and needs of individual users. If functional, economic, and social benefits are more significant than monetary, time, and psychological costs, then a perceived value for them would be created, which leads to satisfaction. Furthermore, a significant positive connection between perceived value and corresponding user satisfaction with mobile banking services offered by banks was evident (Arifin et al., 2019; Sriwidadi & Prabowo, 2023). Rural Bangladeshis rely on MFS technology because it provides value where traditional banking services are limited. MFS consumers evaluate healthy suppliers based on how well they provide convenient financial access and rapid, secure transfers. Users are more satisfied and keep using MFS when they sense its worth. Thus, it is rational to put forth the assumption:

H1: *Perceived value positively influences satisfaction toward the continuance of the use of MFS.*

3.2. Perceived Risk

Risk is the users' arbitrary anticipation of losing something to achieve an expected objective (Pavlou, 2001). Since the users vest sensorial personal and financial information to the MFS platform, any perceived risk can undermine their confidence and corresponding satisfaction. Moreover, risk is considered an extra metric when implementing technology-based financial services (Ravichandra, 2016). So, perceived risk is an obstacle and can be regarded as a key factor in confining users' satisfaction regarding MFS. It is essential to foster a positive view of the MFS platform's security since safe users will likely exhibit greater satisfaction and a stronger desire to continue with MFS (Ikhsan et al., 2023). Non-urban users generally lack digital financial experience, making MFS seem risky for money loss, security breaches, and system failures. Risks may make users unsatisfied with MFS because security concerns restrict them from using the services. Risk perception negatively impacts satisfaction and usage intention. Once again, perceived risk negatively influenced mobile banking usage satisfaction (Winata et al., 2024). Hence, the following supposition is put forth.

H2: *Perceived risk significantly negatively impacts satisfaction toward the continuance of the use of MFS.*

3.3. Perceived Cost

The perceived cost refers to users' assessment of monetary and non-monetary expenses associated with using MFS, such as transaction fees, data costs, and the opportunity cost of time spent on the service (Hazra & Priyo, 2021). Customers need to pay MFS providers different prices based on the various types of services they offer. If consumers realize these costs are significantly higher, cognitive disharmony may arise from the poorer rural residents. Higher perceived costs may deteriorate the level of satisfaction since users evaluate services using a value equation that compares perceived costs and benefits (Gong & Jiang, 2023). Users residing in rural Bangladesh have restricted financial capabilities may encounter financial barriers to MFS because they must cover expenses linked to transaction fees. MFS users who deem the costs higher than the benefits will be less satisfied and less likely to use. To improve user satisfaction, MFS must be cost effective.

Moreover, a study on mobile banking reveals that cost significantly lowers user satisfaction (Jahan & Shahria, 2022). Thus, we assume the succeeding postulation.

H3: *Perceived cost significantly negatively influences satisfaction toward the continuance of use of MFS.*

3.4. Government Support

Virtual and actual worlds were simultaneously formed by the quick spread of sophisticated digital technology, but oddly, both dimensions also impact one another. Considering this issue, governments must play a significant role in preparing businesses, citizens, and agencies for the difficulties posed by the digital change in the economy brought about by digitalization and digital technology (Pesha & Shramko, 2020). The MFS platform demands government assistance where infrastructure is lacking; suitable regulations are necessary to enhance security and reliability and taking the initiative is necessary to establish a suitable pricing policy for a user-friendly environment. These issues ultimately lead to stronger satisfaction and a greater likelihood of continued use. Furthermore, the government of Bangladesh has expectations of the MFS sector and is responsible for overseeing and regulating it, and it has specific expectations from this industry. Among these expectations, upholding industry standards for MFS comes first (Sultana, 2023). Balaskas et al. (2024) revealed that government support had no significant relation with Fintech adoption. A study by Rahman et al. (2020) observed that government support in the form of policy initiatives and infrastructural improvements positively influenced satisfaction in MFS among rural populations. So, succeeding speculation is proposed.

H4: *Government support positively influences satisfaction toward the continuance of the use of MFS.*

3.5. Perceived Trust

Trust in MFS indicates that the user feels secure, relying on the organization's competence, honesty, and fame that caters to the services (Khan & Chaipoopirutana, 2020). Dass and Pal (2011) revealed that underbanked rural populations choose trustworthy channels when executing financial transactions. Complexity concerning trust consists of trust in technology and the financial service provided. As a result, building trust in MFS remains one of the pivotal challenges to guarantee that the rural underbanked are satisfied with the services offered. Nowadays, banks strongly emphasize developing excellent relationships to achieve users' trust. Users will be less hesitant if they believe in MFS providers. Moreover, user satisfaction is positively and significantly impacted by trust, which acts as a mediating factor, and as an independent variable, it indirectly affects users' satisfaction in the MFS industry (Rouf et al., 2024). Trust perception signifies that a service provider exhibits reliability, integrity, and professional competence. Users must place their trust in MFS service providers when disclosing their financial resources and personal information, as trust is a crucial safety safeguard. Individuals in rural regions necessitate fundamental trust in financial services due to their apprehension about digital platforms. In Bangladesh, diminished digital trust enables customer perceptions of service provider reputation, together with security protocols and user feedback, to shape trust development. Elevated trust in MFS will result in user satisfaction and retention of the service. According to (Geebren et al., 2021), trust significantly improves users' satisfaction when looking into the device to enhance users' satisfaction in mobile banking. Therefore, we projected succeeding postulation.

H5: *Perceived trust significantly influences satisfaction toward the continuance of the use of MFS.*

3.6. Satisfaction

Satisfaction refers to the degree of fulfillment from a service's attributes or the service offering a pleasant stance of fulfillment associated with using it (Oliver, 1980). Regarding non-government profit-seeking banking in Bangladesh, users' satisfaction plays a critical role in deciding whether users choose to remain with the service provider or switch to another one (Saha & Ali, 2024). Users may evaluate experiences according to their realization and may perceive varying satisfaction from the same service encounter due to different factors. Empirical research on MFS showed that satisfied users presumptively continue using the service in the future (Goel et al., 2022). Saima et al., 2024 confirm an affirmative association between the existing users' satisfaction and continuance of use. On the other hand, ECM designates satisfaction as a crucial determinant of continuous use intention. Users are inclined to persist in utilizing a service when they encounter satisfaction, as their positive emotions cultivate favorable anticipation for future use. Satisfaction leads to favorable behavioral intentions, particularly continuous usage, as users wish to preserve the beneficial benefits of their experiences (Bhattacherjee, 2001). Moreover, rural Bangladesh users' satisfaction with MFS platforms based on user friendliness, price, and stability leads them to form enduring connections with MFS. The satisfaction that users experience generates a continuous feedback process that makes them stay connected to the service because of its value. Utilizing the mentioned arguments, we assume the following:

H6: *Satisfaction positively influences the continuance of the use of MFS.*

4. Methodology

The research adheres to positivist principles and adopts a quantitative method focusing on determinants of satisfaction toward continuous use of MFS.

4.1. Research Context

To examine hypotheses, primary data have been collected from eight northern districts of Bangladesh: Gaibandha, Rangpur, Dinajpur, Nilphamari, Kurigram, Lalmonirhat, Thakurgaon, and Panchagarh during November–December 2024 to assess users' satisfaction with the continuance of use of MFS. Respondents from three villages of each district were selected randomly, and these villages were situated 5–12 km away from any formal financial institution. Much literature on MFS focused only on urban dwellers (Uddin & Nasrin, 2023; Akter et al., 2023; Balaskas et al., 2024), representing a scarcity of literature on rural realities. This scarcity and higher growth of MFS due to fewer or no traditional banking facilities are the reasons for choosing rural areas. The abovementioned areas are considered appropriate for this study.

4.2. Questionnaire Design

A structured questionnaire was created for a survey, with a 5-point Likert scale (1 being strongly disagreed and 5 being strongly agreed) in the first section for gathering demographic data and the second part for measurement-related data to guarantee validity. Measurement items were assimilated from diverse previous studies to develop a questionnaire. Five items were acquired from Yan et al. (2021) and Xie et al. (2021) to assess perceived value. Five items were endorsed by Arifin et al. (2019), Gbongli et al. (2020), and Rahman (2021) to measure perceived risk. Five measurement items of perceived cost were adapted from Gbongli et al. (2020) and Rahman (2021). Four items were derived from Balaskas et al. (2024) to evaluate government support. Five measures originated from Hassan et al. (2022) to assess perceived trust. Five items adapted from Arifin et al. (2019) and Rabaa'i and ALMaati (2021) evaluated the satisfaction construct. Finally, the

continuance of use was assessed with the help of four items that originated from Arifin et al. (2019). The questionnaire was developed using English first and subsequently back-translated into Bengali because individuals in rural areas prefer to speak Bengali. Before starting the survey, the questionnaire was pretested by four university professors, experts in this field, and 25 university students. Additionally, to determine the optimal phrasing, relevance, applicability, and efficacy of the questionnaire, an experimental test was carried out on a sample of 40 respondents, and subsequently, it was modified with minor changes in a few words and items.

4.3. Sampling and Data Collection

The research uses random sampling to eliminate bias and improve generalizability by giving every participant an equal chance of being selected. This method ensures a diverse and representative sample of rural MFS users, which is essential for understanding satisfaction factors across demographics. Random sampling eliminates researcher bias and ensures unbiased selection. This randomness ensures that the sample closely resembles the larger population of rural Bangladeshi MFS users, improving data reliability. At the very beginning, people were asked whether they use MFS, and by asking this preliminary screening question, favorable response showers were selected as respondents. Each respondent had been using at least one MFS among thirteen service providers and was 18 years old or above. To collect data, a team of four local surveyors visited outhouses, agricultural farms, tea stalls, grocery shops, and marketplaces where village people used to gather. The surveyors also randomly visited a few educational institutions situated in rural areas. Structured paper-based questionnaires were supplied to a total of 425 respondents. A total of 400 usable responses were obtained, more than 385 as prescribed by Cochran (1977) for unknown populations. The sample size comprises 35.75% female and 64.25% male responders. Among the vocations, agriculturists had the highest opinion, with 29% of respondents. Rangpur is the most impoverished division, including four riverine districts with a notably low literacy rate. Consequently, the primary school level constitutes the largest percentage of the sample size at 30.25%, followed by individuals with no formal education at 26.25%.

4.4. Analysis and Findings

After reviewing, 400 responses were prepared for analysis, and unfinished responses from respondents were rejected from the data. "R version 4.4.1 (2024-06-14), Race for Your Life" software was used in our study to measure the constructs that support the research model. Structural equation modeling (SEM), which applies statistical techniques to evaluate and measure associations between many variables concurrently, was then used to calculate the associations between the variables. "Python 3.12.3" package was used only for the depiction of the measurement model. Using a two-fold analytical technique, as advocated by (Anderson & Gerbing, 1988), the measurement model was assessed at the very beginning just after the test of common method variance; the structural model was examined then. Measurement model analysis consists of validity, construct reliability, and assessment of corresponding indicators. After assessing these, multicollinearity, the path coefficient and t-statistics associated with the structural model, effict size, standard errors and confidence intervals and model fit indices are evaluated.

5. Results

5.1. Common Method Variance (CMV)

The study aims to identify Common Method Bias (CMB) at the outset of the analysis to ascertain whether the observed relationships among variables are affected by the mea-

surement method rather than the underlying constructs. The likelihood of CMV involves assessing both dependent and independent variables derived from the perceptions of a singular group of respondents. Both exploratory and confirmatory methodologies were utilized to mitigate the risk of standard method bias (CMB). The current study employs a Confirmatory Factor Analysis (CFA)-based Likelihood Ratio Test (LRT) as a supplementary method to Harman's Single-Factor Test for evaluating CMB. The study performed the single factor test without rotation, utilizing exploratory principal component analysis (PCA). The initial factor represented 19% of the total variance (total variance explained = 33%), falling short of the widely recognized threshold of 50%, indicating that CMB is improbable to present a significant risk. CFA evaluated a single-factor model against the proposed multi-factor model utilizing LRT. The theoretical multi-factor model exhibited a markedly superior fit ($\Delta\chi^2 = 1301.8$, $\Delta df = 21$, $p < 0.01$), offering additional evidence against considerable CMV (Podsakoff et al., 2003).

5.2. Measurement Model

5.2.1. Convergent Validity

Measurement model evaluation is required to ensure convergent validity by using factor loadings, composite reliability (CR), and average variance extracted (AVE). All loadings' values of items surpassed 0.70; AVE values went beyond 0.50 significantly, and CR values exceeded generally recognized 0.70 criteria, validating the convergent validity of measures (Hair et al., 2017), as seen in Table 1.

Table 1. Measurement Model Evaluation.

Constructs	Items	Loadings	CR	AVE
Perceived Value (PV)	PV1: The usefulness of MFS platform is much helping me compared to the effort needed.	0.75		
	PV2: In terms of time consumption, using MFS is more beneficial.	0.74		
	PV3: Using MFS delivers value for me compared to fees or costs that need to be paid.	0.74		
	PV4: Because of many proportional benefits, employing MFS is financially viable.	0.77		
	PV5: Overall, the MFS platform offers decent value.	0.81	0.8443	0.58
Perceived Risk (PR)	PR1: There is little chance of fraud while using MFS.	0.77		
	PR2: Hacking (OTP, Password) of an MFS account is not very likely.	0.76		
	PR3: There is little chance of bad transactions because of network issues.	0.73		
	PR4: Using MFS transactions is not riskier than using regular transaction techniques (Cash, card).	0.79		
	PR5: MFS safeguards my privacy and transactions.	0.76	0.8427	0.60

Table 1. *Cont.*

Constructs	Items	Loadings	CR	AVE
Perceived Cost (PC)	PC1: The MFS cash-out charge is minimal.	0.74		
	PC2: The MFS balance transfer charge is minimal.	0.74		
	PC3: Merchant payment and pay bill charges are minimal while using MFS.	0.75		
	PC4: There is no hidden charge while using MFS.	0.73		
	PC5: Compared to banking transaction costs, MFS is less expensive.	0.77	0.8398	0.56
Government Support (GS)	GS1: The government has approved the usage of MFS in Bangladesh.	0.73		
	GS2: The government is actively putting in place the infrastructure needed to make MFS use easier.	0.80		
	GS3: The government has passed laws and regulations that benefit MFS.	0.76		
	GS4: The government must provide financial and legal support for MFS to be used effectively.	0.72	0.7960	0.57
Perceived Trust (PT)	PT1: The MFS system is reliable.	0.75		
	PT2: The MFS system is safe.	0.79		
	PT3: Through the MFS channel, service is guaranteed.	0.80		
	PT4: The MFS channel's technological and legal support protects me from issues.	0.75		
	PT5: I do believe MFS is trustworthy.	0.77	0.8551	0.60
Satisfaction (SAT)	SAT1: I am pleased that I am utilizing the MFS.	0.80		
	SAT2: My MFS usage experience was satisfactory.	0.79		
	SAT3: MFS has allowed me to make personal financial decisions with only a few clicks.	0.84		
	SAT4: I made the proper choice to use MFS.	0.81		
	SAT5: I was satisfied with MFS overall.	0.85	0.8857	0.67
Continuance of Use (COU)	COU1: Using MFS has become a daily requirement for many people.	0.84		
	COU2: I got used to using MFS.	0.88		
	COU3: I am unable to stop using MFS.	0.85		
	COU4: I plan to keep using MFS since those around me are growing dependent on it.	0.85	0.8838	0.73

Notes: CR, composite reliability; AVE, average variance extracted.

5.2.2. Discriminant Validity

To evaluate discriminant validity, the Fornell–Larcker criterion is applied. According to Hair et al. (2017), the correlation between each construct and every other construct in the model must be less than the square root of each construct's Average Variance Extracted (AVE). For every construct, the square root of AVE is represented by a diagonal value. These values indicate the extent of variance independently elucidated by each construct. Latent correlations between constructs are represented by off-diagonal values, which show how each pair of constructs is related to the others. The square root of AVE (diagonal) for every construct is higher than its highest correlation (off-diagonal) with any other construct. Refer to Table 2.

Table 2. Fornell–Larcker Matrix.

	PV	PR	PC	GS	PT
PV	0.762	0.015	0.034	0.067	−0.021
PR	0.015	0.765	−0.034	−0.034	−0.010
PC	0.034	−0.034	0.746	0.006	0.039
GS	0.067	−0.034	0.006	0.755	0.055
PT	−0.021	−0.010	0.039	0.055	0.774

Notes: PV, perceived value; PR, perceived risk; PC, perceived cost; GS, government support; PT, perceived trust.

All constructs in the model satisfy the Fornell–Larcker criterion for discriminant validity. This signifies that each construct is separate and assesses a unique concept within the model, thereby reinforcing the model's discriminant validity. Refer to Table 3.

Table 3. Fornell–Larcker Criterion Validation Results.

Construct	$\sqrt{AVE}$	Max Correlation with Others	Passes FL?
PV	0.762	0.067 (with GS)	Yes
PR	0.765	0.034 (with PV)	Yes
PC	0.746	0.039 (with PT)	Yes
GS	0.755	0.067 (with PV)	Yes
PT	0.774	0.055 (with GS)	Yes

Notes: PV, perceived value; PR, perceived risk; PC, perceived cost; GS, government support; PT, perceived trust; FL, Fornell–Larcker Criterion.

5.3. Structural Model

5.3.1. Multicollinearity

Multicollinearity can confuse predictors, distorting their relationships. Data relationships make each independent variable hard to interpret. It can also lead to inaccurate assessments of independent–dependent relationships (Fox, 2015). The Kaiser–Meyer–Olkin (KMO) test assessed multicollinearity in the dataset before estimating the structural model. The overall KMO value of 0.86 is praiseworthy according to the scale. The dataset is suitable for factor analysis or SEM. The items have measures of sampling adequacy (MSA) values between 0.75 and 0.93, above the acceptable threshold of 0.50 (Williams et al., 2010). This shows that each variable contributes adequately to factor structure and has no severe multicollinearity. The MSA values are in Table 4.

Table 4. Kaiser–Meyer–Olkin (KMO) Test.

Variable Group	Items	MSA Range	Interpretation
PR (Perceived Risk)	PR1, PR2, PR3, PR4, PR5	0.77–0.86	All items have an acceptable sampling adequacy; PR4 has the lowest value but is still acceptable.
PC (Perceived Cost)	PC1, PC2, PC3, PC4, PC5	0.80–0.83	All items show good sampling adequacy, indicating suitability for analysis.
GS (Government Support)	GS1, GS2, GS3, GS4	0.75–0.83	Acceptable values, though GS1 and GS3 are on the lower end.
PT (Perceived Trust)	PT1, PT2, PT3, PT4, PT5	0.86–0.89	High sampling adequacy, suitable for factor analysis.
PV (Perceived Value)	PV1, PV2, PV3, PV4, PV5	0.82–0.85	Good sampling adequacy across all items.
SAT (Satisfaction)	SAT1, SAT2, SAT3, SAT4, SAT5	0.90–0.93	Excellent sampling adequacy, indicating a very strong factor structure.
COU (Continuance of Use)	COU1, COU2, COU3, COU4	0.88–0.93	Excellent sampling adequacy across all items.

Notes: MSA, measure of sampling adequacy.

5.3.2. Hypothesis Testing

The current research used data from a sample of 400 respondents to examine the path coefficients and their accompanying t-statistics to evaluate the structural model, as suggested by (Wetzels et al., 2009). To account for specific impact inside the structural model, path coefficients should be more than 0.10 (Rabaa'i & ALMaati, 2021). According to (Henseler et al., 2015), it must be significant at 0.05 or above. R^2 values for endogenous constructs were also used to evaluate the model's explanatory capacity. The study demonstrated that perceived trust (PT) exerted the most substantial positive influence on satisfaction (SAT) ($\beta = 0.497$, $t = 10.94$, $p < 0.01$) compared to other variables. Perceived value (PV) ($\beta = 0.210$, $t = 3.96$, $p < 0.01$) has a positive and moderate effect on satisfaction, although not as noticeable as perceived trust. The impact of government support (GS) on satisfaction was positive ($\beta = 0.202$, $t = 3.68$, $p < 0.01$). This moderate relationship signifies a weak influence on satisfaction, closely resembling perceived value. The perceived cost (PC) somewhat lowered satisfaction ($\beta = -0.100$, $t = -1.86$, $p = 0.06$). This result is marginally significant, with a p-value slightly exceeding the 0.05 threshold yet remaining significant at the 0.10 level. Of all the variables, the weakest correlation exists between perceived cost and satisfaction. Satisfaction was negatively impacted by perceived risk (PR) ($\beta = -0.154$, $t = -2.99$, $p < 0.01$). Despite being one of the weaker relationships in this model, this effect is still statistically significant ($p < 0.01$). Satisfaction showed substantial and favorable effects on continuance of use intention (COU) ($\beta = 0.70$, $t = 20.78$, $p < 0.01$). The model explained 37.40% of the variance in satisfaction and 48.90% in continuance of use intention. Furthermore, the cross-validated redundancy values of 0.891 for satisfaction and 0.904 for continuance of use intention, which is more prominent than zero as advocated by (Hair et al., 2017), indicate strong anticipating pertinence of the model for these constructs (Table 5 and Figure 2). The results demonstrate the model's capacity to explain a significant proportion of variance in key outcomes, thereby supporting its robustness and predictive validity.

Table 5. Path Coefficient, t Statistics and Hypothesis Testing.

Relations			Path Coefficient	*t*-Statistics	*p*-Value	Decision	Q^2	R^2
SAT	~	PV	0.210128	3.95632 **	<0.01	Supported	0.8913348	0.3738413
SAT	~	PR	−0.153807	−2.9862 **	<0.01	Supported		
SAT	~	PC	−0.100052	−1.85556 *	0.06	Supported		
SAT	~	GS	0.201831	3.6769 **	<0.01	Supported		
SAT	~	PT	0.496830	10.9392 **	<0.01	Supported		
COU	~	SAT	0.699662	20.784 **	<0.01	Supported	0.9038131	0.4895269

Notes: * *p*-value < 0.10; ** *p*-value < 0.01.

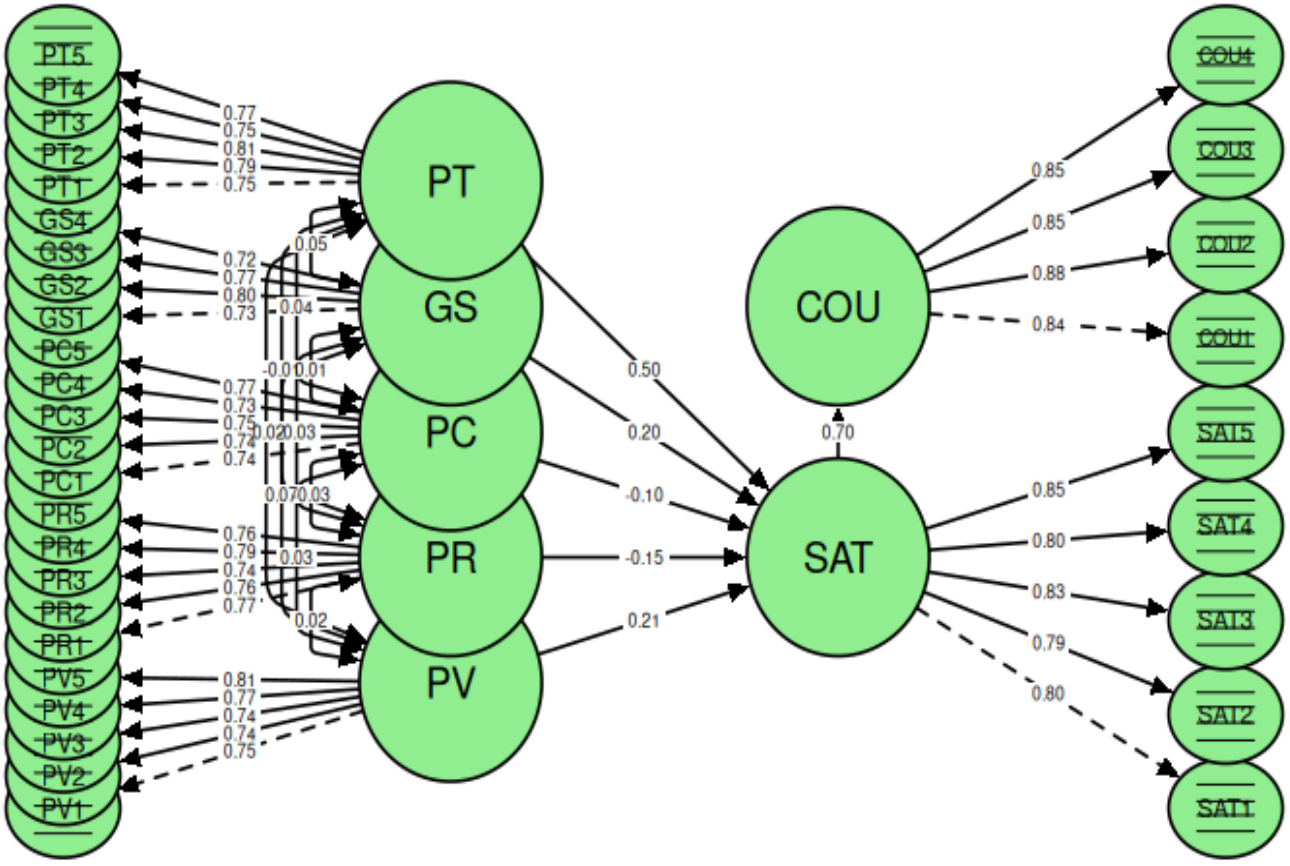


Figure 2. The Measurement Model.

5.3.3. Effect Size, Standard Errors, and Confidence Intervals

The analysis indicates that perceived trust and continuance of use exert the most significant influence on satisfaction, with effect sizes of 0.74 and 0.53, respectively. Perceived value and government support exhibit medium effect sizes of 0.21 and 0.20, respectively, whereas perceived risk and perceived cost demonstrate small yet statistically significant effects with effect sizes of −0.16 and −0.11. Table 6 shows the analysis results.

Table 6. Effect Size and Confidence Intervals for Relationships Between Satisfaction and Other Variables.

Directions	Estimate	SE	Confidence Interval		Standardized Estimate	*p* Value	Effect Size
			Lower Limit	Upper Limit			
SAT ~ PV	0.22	0.06	0.11	0.34	0.21	<0.01	Medium Effect
SAT ~ PR	−0.16	0.05	−0.26	−0.05	−0.15	<0.01	Small Effect
SAT ~ PC	−0.11	0.06	−0.22	0.01	−0.10	0.06	Small Effect
SAT ~ GS	0.22	0.06	0.10	0.34	0.20	<0.01	Medium Effect
SAT ~ PT	0.53	0.06	0.42	0.64	0.50	<0.01	Large Effect
COU ~ SAT	0.74	0.05	0.65	0.83	0.70	<0.01	Large Effect

Notes: PV, perceived value; PR, perceived risk; PC, perceived cost; GS, government support; PT, perceived trust; COU, continuance of use; SE, standard errors.

5.3.4. Model Fit Indices

The Comparative Fit Index (CFI) is valued at 1.00. This signifies an optimal model fit. The CFI values span from 0 to 1, with values exceeding 0.95 typically considered excellent (Bentler, 1990). The Root Mean Square Error of Approximation (RMSEA) is 0.00. An RMSEA of 0.00 indicates an ideal close fit to the data. Values under 0.05 are deemed excellent, while those below 0.08 are acceptable (Browne & Cudeck, 1992). The Standardized Root Mean Square Residual (SRMR) is 0.04. This quantifies the mean standardized residuals. Values under 0.08 are deemed acceptable, while those below 0.05 are regarded as excellent. A value of 0.04 signifies an adequate fit (Hu & Bentler, 1999). Collectively, these indices affirm that the model's fit is exemplary, offering substantial evidence that the model accurately depicts the data. Consequently, the model may be deemed dependable for subsequent analysis and interpretation.

6. Discussion

The research intended to provide a further understanding of the vital determinants that may predict MFS users' continuance of use intention in rural Bangladesh. The ECM served as a basis for the research, which was explained with additional elements such as perceived value, perceived risk, perceived cost, government support, and perceived trust. Model fit indices, predictive relevance, construct validity, and construct reliability were all attained. Furthermore, conceptual model predictive power was supported by statistical results in explaining substantial variance in satisfaction (R^2 = 0.3738413) and continuance of use (R^2 = 0.4895269). These values were within the highly satisfactory level, which surpassed all the suggested standards in this respect, such as 30% (Kline, 2016). The conceptual model used in our research to clarify users' intention to continue use was recognized and deep-rooted in the results, and the results demonstrate the model's capacity to describe an extensive proportion of variance in key outcomes, thereby supporting its robustness and predictive validity.

According to the study, perceived trust exhibited the most potent positive effect on satisfaction. A similar result was found in studies by (Geebren et al., 2021; Rouf et al., 2024). MFS is easier to access in rural Bangladesh due to mobile phone use. Mobile operators have a good reputation and history. Communication reliability may have made people trust mobile technologies like MFS. After implementing transparency, data security, and consumer protection regulations, Bangladesh has promoted financial inclusion in rural areas without banking facilities. MFS platforms gain trust from government endorsement. Moreover, MFS integrated security features like PIN codes, biometric verification, and

transaction notifications to boost user confidence and safety. Ability, compassion, and integrity—all trustworthy factors regarded by service providers—influence MFS use. Consequently, convenience, established mobile networks, favorable government regulations, improved security protocols, community impact, and the economic advantages of financial inclusion foster greater perceived trust in MFS among rural Bangladeshis.

It was shown that satisfaction was positively and significantly impacted by perceived value. This important result was supported in previous studies (Arifin et al., 2019; Sriwidadi & Prabowo, 2023). The findings indicate that rural consumers regard MFS as efficiently addressing their financial requirements, including seamless money transfers, bill payments, and access to financial services, hence enhancing their perceived utility of the service. Furthermore, those with restricted technical proficiency like uncomplicated services that necessitate less effort to utilize, resulting in enhanced happiness. These factors collectively influence the perceived value of MFS among rural users. When users recognize significant value in these services, their satisfaction increases, hence enhancing their intention to persist in utilizing MFS.

Government support positively influenced satisfaction in line with prior studies (Rahman et al., 2020). The government has established a regulatory framework in collaboration with financial institutions and MFS providers to ensure compliance with operational and legal standards in MFS. This builds users' confidence and so raises their level of satisfaction. In order to encourage financial inclusion, the Bangladeshi government has also started many projects including the development of MFS platform, which enables rural people to obtain financial services without visiting bank branches. This phenomenon fosters a supportive ecosystem in which rural users feel secure, valued, and empowered to utilize MFS, resulting in increased satisfaction and sustained usage.

The perceived cost also negatively affected satisfaction marginally, which is consistent with the findings of (Jahan & Shahria, 2022). Rural users might not be fully aware of MFS's financial costs or fees. Because they are more focused on the perceived benefits (such as convenience, accessibility, and safety), the costs might not seem significant in comparison due to fewer service alternatives. Moreover, limited access to alternative financial services (like banks, other financial institutions or physical cash handling) makes MFS more attractive. Even though there are costs involved, the overall value of the service outweighs the dissatisfaction caused by those costs, leading to a marginal negative impact. Regardless, banks can reduce costs by introducing bundled services and packages and waiving transaction fees for specific demographics, making this service more lucrative.

Perceived risk negatively influences satisfaction, indicating that increased concerns about risk decrease satisfaction, as evident in previous studies (Arifin et al., 2019; Winata et al., 2024). Insecurity about MFS accounts' money and information, unexpected hacking, and fraud lower rural users' satisfaction with MFS. Cybercrime has made users wary of sharing personal information online, especially for financial transactions. Users fear breaches, fraud, and identity theft of their personal and financial data. These security issues lower satisfaction, albeit not significantly, due to infrequent occurrence along with lower cultural acceptance in rural areas. MFS providers should guarantee transaction security, multi-factor authentication, encryption, and real-time fraud detection, as well as compensate fraud victims. A solid customer care system should include phone, chat, and email for user complaints. The government should act to ensure MFS follows local laws.

Furthermore, satisfaction demonstrated a substantial and positive influence on the continuance of use intention. Prior studies portrayed similar results (Goel et al., 2022; Al Amin et al., 2023; Saima et al., 2024). This result shows that perceived value, perceived cost, government support, perceived risk, and perceived trust directly influenced satisfaction, and satisfaction influenced continuance of use. It also indicates that when users are

more satisfied using perceived value, government support, and perceived trust, they are significantly more likely to continue using it.

7. Conclusions and Implications

In light of the theoretical structure, the study built on the prevailing knowledge of MFS and assessed distinguishable factors foretelling users' satisfaction toward the continued use of these services. Regarding the researcher's knowledge, this study is one of the earliest approaches that experimentally examined the applicability of ECM, considering the context of rural dwellers' MFS usage. The current research has deployed the ECM by incorporating elements significant to MFS. Beyond what was suggested in the original ECM, this study examined the ways in which users' satisfaction was impacted by perceived value, perceived risk, perceived cost, government support, and perceived trust. The association between satisfaction and continued intention to use MFS was also evaluated.

A unique addition to the literature, government support helps to enable satisfaction with the continuance of MFS use intention. This paper highlights the role of governmental regulations, infrastructure, and support in augmenting the credibility and reliability of MFS offerings. This necessitates government engagement in ECM, which had been minimized in prior applications of ECM. The study sets forth crucial antecedents, including perceived cost and perceived risk, to the ECM framework. Although ECM traditionally focusses on the congruence between user expectations and performance, the inclusion of these new factors elucidates the obstacles rural users encounter in adopting and sustaining the use of MFS. This contribution enhances the comprehension of how external variables influence users' satisfaction regarding continuance intention in rural and financially constrained contexts. The research highlights trust as a crucial element influencing satisfaction regarding continuance intention, particularly among rural MFS users. This study enhances existing research on trust in technology by demonstrating how trust in the MFS provider, platform security, and transparency influence user engagement in disadvantaged regions. This understanding enhances the perception of trust in the continued utilization of technology in developing countries. The research establishes that satisfaction is crucial for the intention to continue usage. Satisfaction, consequently, exerts a significant and positive influence on this. This underscores the essential role of satisfaction in maintaining the engagement of rural users with MFS over time.

Thus, the study addresses rural Bangladeshi users, who have been under-represented in MFS research, filling a gap in the literature. Most studies have focused on urban or semi-urban users, ignoring rural issues like low digital literacy, financial constraints, and limited banking access. It sheds light on how rural users view and use MFS platforms in this study. This theoretical expansion makes the model more robust and relevant to understanding MFS usage dynamics in developing countries. The study offers practical insights for service caterers and policymakers to improve user satisfaction and promote ongoing usage. By emphasizing trust-building initiatives, augmenting governmental support, reducing perceived costs, and mitigating perceived risks, service providers can formulate strategies that more effectively address the needs of rural users. This enhances ECM by emphasizing the significance of service design that addresses local socio-economic issues.

Limitations and Future Research

The current research on MFS utilization in rural Bangladesh provides valuable knowledge about user persistence but needs to acknowledge certain limitations. The research limitations specify the study boundaries while providing directions for additional academic work that investigates MFS usage complexity in rural settings. The research includes

several limitations and possible directions for future work, which are presented in the following detail.

First, the research was conducted in rural northern areas of Bangladesh, consisting of eight districts. Because of insufficient time and cost, the study surveyed only 400 randomly chosen respondents, and thus, these findings alone may not be generalized to comprehensive MFS continuance of use intention. Therefore, it would be rational to conduct future studies and increase the sample size to test this model extensively to make it more generalizable.

Second, this study concentrated on Bangladeshi mobile banking service users. Bangladesh is a developing nation with inadequate technological infrastructure, and the people living in its rural areas are not technology-friendly compared to nationals of different developing countries. Future research should examine the suggested paradigm in other nations with distinct technological, cultural, and economic characteristics.

Third, the research extends ECM through analysis of variables which affect rural users including perceived trust factors and cost elements and risk evaluations and government support initiatives. The research design did not consider several factors like cultural elements (such as social influence, social attitude toward technology, peer network) and psychological characteristics (such as risk aversion, perceived behavioral control, personal pride or independence) that determine rural users' MFS usage behavior. Knowledge about rural users' MFS interaction requires an extensive analysis of social-cultural factors together with psychological characteristics impacting financial system trust, digital literacy and familial behavior patterns. The explanatory power of the ECM can be strengthened through added external factors in these conditions.

Fourth, this cross-sectional study cannot show how users' continuous intention to utilize MFS changes over time. Future research should undertake a longitudinal empirical analysis to understand how temporal changes (such as shift in financial stress and economic condition, changes in digital literacy and technological adoption, impact of external events) impact users' continuous intention to utilize MFS.

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