**Antecedents of mobile financial service adoption among citizens in Bangladesh**

**Abstract:**

**Purpose**

Mobile financial service can be defined as a service offered by a bank or any other financial institution that allows the customers of such establishments to carry out a variety of banking operations via a mobile device, such as a mobile phone, tablet, or personal digital assistant. The purpose of this paper is to examine factors that influence customers to adopt and subsequently use MFS services in Bangladesh using the unified theory of acceptance and use of technology 2 (UTAUT2) model with performance expectation, effort expectation, social influence, perceived credibility, and gender as moderators.

**Design/methodology, and approach:** This study used 303 respondents as a cross generational sample in Bangladesh. Structural Equation Method (SEM), SPSS-25, and Amos-24 software were used to analyze the data.

**Findings** of the study show that performance expectancy, effort expectancy, social influence, information quality, and perceived creditability are the main factors influencing the adoption and use of MFS in Bangladesh.  The results indicate that all elements of the identified factors are significant with respect to the users’ adoption of mobile financing services. The best indicator of a person's behavioral intention to use mobile banking was found to be perceived believability.

**Research limitations/implications:** This could be attributed to Bangladeshi culture's general tendency for men to engage in mobile financial services. Similarly, this analysis only looks into the factors that influence the customer's behavioral intention to use mobile financial services in financial transition.

**Practical implications:** The results of this study have increased public understanding of the aspects that influence consumers' decisions when it comes to their intention to use mobile financing. This study offers a distinctive model to identify the variables influencing Bangladeshi internet banking. In a developing country like Bangladesh, MFS is not a new technological advancement.

**Keywords:** Mobile Financial Services, UTAUT2, performance expectancy; effort expectancy Information quality, social influence, behavioral intention, and mobile financing (m-financing). Self-service technology (SST)

1. **Introduction**

Mobile Financial Services (MFS) refers to a method of providing financial services that allows customers to conduct banking transactions by fusing mobile wireless networks with banking. Mobile financial services are considered part of mobile commerce (m-commerce) and are believed to be the natural evolution of internet banking. The digitalization of financial services is an ultimate need for financial institution consumers in the fourth industrial revolution era. Smart automation and interconnectivity enable rapid change in financial institutions’ technology and processes. The digital transformation of the financial sector has led to more digitized business models and processes and innovative products and services. The current advancements in the field of mobile technologies have yielded profound modifications and incessant resonance in the use of mobile banking in the financial sector.

According to the World Economic Forum, while many technological advancements in connectivity have been made worldwide, none have had a greater impact than mobile phone access in poor nations (Mugambe, 2017). The financial sector has seen a significant increase in the use of sophisticated technologies (mobile and internet, for example) by both service providers and customers. These new technologies have also changed how service delivery is handled (Gharaibeh et al., 2018).According to the most recent data, there are currently 4.77 billion mobile phone users globally. Additionally, the data showed that over 38% of people who used mobile phones also used smartphones (Gharaibeh et al., 2018).

Asian customers are progressively shifting to online banking for their financial operations, and the region is seeing a steady increase in the use of online banking services. Over the past five years, online banking has grown by 35%, while branch usage has decreased by 27% throughout Asia. Online gadgets are used by Asian customers to make 25% of their buying decisions (Khan et al., 2017). The Unified Theory of Acceptance and Use of Technology (UTAUT2) is better because it shows how the measure of behavioral intents and the fundamental customer-oriented notions relate to each other; it permits other important aspects to be added to its domain based on the technology, group, or situation; and it has an established empirical foundation (Khan et al., 2017).

Bangladesh is a least developed nation where consumer digital behavior is not as ingrained as it is in other nearby Western or Southeast Asian countries (Himel et al., 2021). According to statistics in Bangladesh, technological connectivity has a favorable impact on a number of commercial activities. According to the Bangladesh Telecommunication Regulatory Commission (BTRC) report, there is significant growth in the use of mobile phones, with over 61% of the population in Bangladesh using them (Liza, 2014). According to statistics, there are over 102.80 million users in Bangladesh who have registered accounts with various MFS service providers, including bKash, Nagad, Rocket, Tcash, and Ucash, to mention a few (Himel et al., 2021).

According to the above, the present study aims to investigate the factors influencing the adoption of mobile financial services by the elderly in a developing country like Bangladesh. This study attempts to extend the UTAUT2 model in order to better understand the factors influencing consumers' acceptance of mobile banking services in Bangladesh. This research explores factors such as, performance expectancy, effort expectancy, social influence, information quality, and perceived creditability. It is guided by the main research question, which asks:

* What is the current state of Bangladesh's customers’ intention and adoption of mobile financial services?
* What are the primary elements that could support or obstruct Bangladeshi clients' plans to use mobile financial services?

1. **Theoretical Backgrounds and Literature review**

**2.1 Theoretical backgrounds**

According to (Venkatesh et al., 2003), published a study titled User Acceptance of Information Technology: Toward a Unified View, which introduced the UTAUT (Unified Theory of Acceptance and Use of Technology) paradigm. The UTAUT model integrates elements from models of technology acceptance and use; therefore, the UTAUT model has the name unified theory. UTAUT has five constructs that are expected to have a significant direct role in actual interest and behavior in using technology, namely the constructs of performance expectations, effort expectancy, social influence, information quality, and perceived credibility. During its development, this UTAUT model eventually inspired the emergence of the next model, namely the UTAUT2 model.

The background of the emergence of the UTAUT2 model is that the previous UTAUT model was a model that focused on the interest and use of technology in an organizational context, while the modifications to the UTAUT model that resulted in UTAUT2 focused on the context of consumer use of technology (Venkatesh et al., 2016) .Performance expectancy, effort expectancy, social influence, enabling conditions, pricing, habit, and hedonic motivation are the seven independent variables in the UTAUT2 model that are used to quantify customers' behavioral intention to embrace new technologies (Hassan et al., 2023). Successful businesses understand the need to remain updated with technological developments. Adopting cutting-edge technology allows businesses to be more adaptable to market shifts, improve processes, and better serve customers. The growth of the business is widely dependent on the customers’ successful adoption of the new technologies offered by the business. Researchers have developed different models to identify the acceptance of new technologies from the customer’s perspective.

**2.2 Relationship between Performance Expectations and User Behavior**

Performance expectations (PE) can be defined as the advantages and features (such as time and effort savings, effectiveness, accessibility, customization, and ease) that could be obtained by employing such cutting-edge channels (Venkatesh et al., 2003). PE is described as "the extent to which a person believes that using technology will enable him or her to achieve improvements in job performance." The extent to which an individual believes that using the system will help him/her attain gains in job performance" is what is meant by "performance expectancy (Khan et al., 2017).The factors that generate performance expectations are outcome expectations, job-fit, perceived usefulness, and extrinsic motivation (Tai & Ku, 2013).

Performance expectancy is the degree to which a client will gain from employing technology to carry out specific tasks (Venkatesh et al., 2012). Performance expectations have a significant impact on interest in mobile banking .It helps to accurately estimate whether someone will want to adopt new technology (Mufingatun & Prijanto, 2020). User expectations for achieving desired performance are higher when they perceive mobile payments to be simple to use and require little effort. The findings of earlier studies that this research article refers to suggest that performance expectations positively influence enthusiasm for utilizing technology. Performance expectancy represents an individual’s awareness that a technology generates upgrades in service performance, be it through augmented response rate, efficiency, and/or accessibility (Farah et al., 2018) .Performance expectations are expected to be one of the most important factors that directly affect acceptance intentions (Mufingatun & Prijanto, 2020).Thus, the behavioral intention to use mobile financial services may be influenced by an individual's impression that adopting mobile payments will improve their ability to complete payment chores. It is supposed that customers use online banking when they know that it will improve their performance (Khan et al., 2017).

According to multiple studies, buyer intention is positively impacted by performance expectancy. Social media advertising, purchase intention were influenced by performance expectations. Based on the description above, the first hypothesis is as follows:

**H1:** The performance expectancy has a significant and positive influence on the intention to use mobile financial services.

* 1. **Relationship between effort expectancy and user behavior**

Effort expectancy is defined as the degree of ease related to a customer's use of technology (Venkatesh et al., 2012).Effort expectancy refers to how easily a consumer believes a task to be accomplished (Hassan et al., 2023).When users perceive that using mobile payments is simple and doesn't require much work, their expectations for achieving the intended results are higher (Venkatesh et al., 2003). The results of previous research indicate that the effort expectancy in using mobile banking services has a positive effect on the interest in using these services, but on the other hand, there are findings that show that the effort expectancy does not have a significant effect on the interest in using mobile banking services (Aryono Putranto, 2020).

According to (Hassan et al., 2023), there was a favorable correlation between behavioral intention to use mobile money services and effort expectation. If a user anticipates that a service will be simple to use and involve little effort, they are more likely to accept it (Farah et al., 2018). In this study conducted to encourage the adoption of mobile banking, numerous researchers found that perceived simplicity of use is a decisive factor in encouraging individuals to use mobile banking (Mufingatun & Prijanto, 2020). Effort expectation is a key benefit that mobile banking applications provide to users since they are simple to use, prioritize user-friendliness, and provide inclusive navigation features that may affect users' intentions to use the service (Farah et al., 2018).

Effort expectancy is the degree to which using a technology will provide benefits to consumers in performing certain activities. An individual will be more interested in using technology if they believe it to be simple to use. As a result, the second hypothesis derives from the description given above:

**H2**: The effort expectancy has a significant and positive effect on the intention to use mobile financial services.

**2.3 Relationship between social influence and user behavior**

Social influence can be described as the degree to which a person is aware that influential people believe they should purchase new technologies (Venkatesh et al., 2003). According to (Venkatesh et al., 2012) social influence is the process through which people alter their opinions and actions to fit the norms of a social group, such as friends and family. Social influence is the extent to which consumers perceive that others believe they should use a particular technology. It reflects the effect of environmental factors such as the opinions of a user's friends, relatives, and superiors on behavior, when they are positive, it may encourage the user to adopt mobile payment services. Social influence is a person's belief that important people in their life believe they should use a particular piece of technology (Farah et al., 2018).

The respondents in this study are from various nations, social influences are nevertheless tested in relation to the intention to use mobile banking services, even in the absence of any influence from social influences on intention (Aryono Putranto, 2020). It was determined that social behavior predicted behavioral intentions (Khan et al., 2017). Customer intentions to adopt mobile financing are highly influenced by social influence. People live in societies where others in their social network, including friends, peers, superiors, relatives, and family, will persuade them to utilize internet banking (Khan et al., 2017). The preferences and values of society, including family members, friends, relatives, and other users of the technology, tend to change the perceptions and viewpoints of users profoundly.

This particularly occurs when the current users of a given technology are influenced by the shift of their peers and families from using one technological service to another (Baabdullah et al., 2019). Mobile applications are often viewed as an extension of a larger online social network, which makes the opinions of others more significant. This is especially true for mobile banking applications, as they are a relatively new way of banking, and people tend to rely on the opinions and experiences of others before adopting them. Therefore, the influence of social norms on consumer intentions is expected to promote the acceptance and usage of mobile banking services (Farah et al., 2018). Next, the following is the third hypothesis:

**H3:** The social influence construct has a significant and positive effect on intention to use mobile financial services.

**2.4 Relationship between Information Quality and User Behavior**

Information quality reflects information relevance, sufficiency, accuracy, and timeliness. Consumers expect to use mobile sites to search for product information and purchase products or services anytime, anywhere. Users may have doubts about service providers' competence and integrity to offer high-quality mobile payment services if this information is erroneous, outdated, or irrelevant. (Zhou, 2013) Because consumers must spend more effort examining information, low-quality information might negatively impact the user experience (Gao et al., 2015). Information quality is determined by its timeliness, accuracy, sufficiency, and relevancy. Consumers anticipate being able to access their payment information from anywhere at any time and to pay bills using mobile payments.

Users may have doubts about service providers' competence and integrity in offering high-quality mobile payment services if this information is unreliable, erroneous, or outdated (Zhou, 2013). M-payment users always expect to obtain complete, precise, and timely information about transactions, such as transaction records and documentation. Lack of information is considered risky by current m-payment users, as it makes follow-up on past payments more difficult. Information quality has not been considered separately, but as an integral part of user satisfaction or user information satisfaction (Bharati & Chaudhury, 2004). Customers can also be concerned about how quickly they will receive a short message in return after making their money. They are uncertain as to whether the payment occurred and whether it was charged. Users would repeat the buy-order procedure if there was a delay in the information distribution process, which would result in the purchase of the same product twice. (Gao & Waechter, 2015). Mobile applications are often viewed as an extension of a larger online social network, which makes the opinions of others more significant. This is especially true for mobile banking applications, as they are a relatively new way of banking, and people tend to rely on the opinions and experiences of others before adopting them. Therefore, the influence of social norms on consumer intentions is expected to promote the acceptance and usage of mobile banking services (Gao & Waechter, 2015). In some studies, information quality has not been considered separately, but as an integral part of user satisfaction or user information satisfaction.

The measures that have been employed for information quality are information accuracy, information completeness, information relevance, information content needs, and information timeliness. Those five measures have been used for the information quality construct. Customers’s intentions to adopt mobile banking are highly influenced by social influence.

**H4**: Information quality has a significant and positive effect on the intention of using mobile financial services.

**2.5 Relationship of Perceived credibility and user behavior**

Perceived credibility is broadly defined as the belief that a partner is trustworthy and has the required expertise to carry out transactions (Erdem & Swait, 2004). This study sought to identify the variables that affected the adoption and use of technology, particularly mobile banking apps. This design was included in reference to earlier research by (Yu, 2012) which indicated that concerns about privacy, personal security, risk, and trust represented by perceived credibility were important in influencing the adoption of mobile banking.

According to certain research on the uptake of mobile banking, consumers may decline to utilize it for a variety of reasons relating to perceived danger or perceived credibility (Natarajan et al., 2010), (Luarn & Lin, 2005)). Risk perception is also a very important consideration in acquiring new technologies or services (Luarn & Lin, 2005). (Iskandar et al., 2020) discovered that potential customers' concerns that their money and/or personal information might be transmitted to other parties without their knowledge while using mobile banking are a clear indication of the lack of perceived reliability. Perceived credibility can be defined as the extent to which a potential user believes the service will be secure, private, and free of threat. Perceived credibility strongly influenced the adoption of payment banks in India (Hassan et al., 2023). Based on previous research, perceived credibility represents individual security, privacy, risk, and trust regarding the use of mobile banking (Mufingatun & Prijanto, 2020). Perceived credibility is a positive and significant predictor of behavioral intention to adopt mobile banking.

***H5:*** Perceived Credibility has significant and positive effect on the intention of using mobile financial services.

**2.6 Relationship of Behavioral Intention and User Behavior**

According to (Venkatesh et al., 2003) Behavioral intention is conceptualized as the extent to which the customer tends to use self-service technology (SST). Behavioral intention has been examined constantly and confirmed as the most powerful determinant of individual behavior over the technology acceptance stream (Venkatesh et al., 2003). Behavior intention is used to determine how much the user wants to use mobile banking for transactions and other financial activities, while user behavior is used to explain the intensity of the user's use of mobile banking every day (Mufingatun & Prijanto, 2020).

Behavioral intention is a primary factor that influences usage behavior in the context of social media adoption for business purposes. When individuals have a positive intention to engage in a specific behavior, such as using social media for business purposes, they are more likely to engage in that behavior. This means that if individuals have a strong intention to use social media for business purposes, they are more likely to use it in their business activities. The relationship between behavioral intention and use behavior is supported by the Unified Theory of Acceptance and Use of Technology (UTAUT) model, which suggests that behavioral intention is a significant predictor of actual use behavior. Therefore, a positive behavioral intention towards using social media for business purposes can lead to the actual adoption and use of social media in business activities (Puriwat & Tripopsakul, 2021). Therefore, the relationship between behavioral intention, user behavior, and mobile banking adoption can be stated in the hypothesis.

**H6:** Behavioral intentions have a significant and positive effect on the intention of using mobile financial services.

**2.7 Gender**

The UTAUT 1 and UTAUT 2 studies, (Venkatesh et al., 2012) conducted an examination of the moderating effect and gender relationship between the independent construct and behavioral intention, which is the dependent construct. This study found that performance expectancy, social influence, and effort expectancy had a stronger effect on male behavioral intentions, whereas facilitating conditions had a greater effect on female behavioral intentions. Social influence also significantly influenced male behavioral intentions, price value significantly influenced female behavioral intentions, and a male had the largest influence on his behavioral intentions to apply technology. (Yu, 2012) also observed that although gender attenuated the effect of perceived financial costs and performance expectancy on behavior, it did not significantly reduce perceived effort, social influence, or credibility on behavioral intentions.

Extensive data showed that men see mobile banking adoption with higher performance expectations than women do, and that men pay greater attention to projected financial consequences than did women. Another study's findings showed that while men were more concerned with habit and performance expectations aspects while adopting technology, women felt more trust, perceive value, effort expectation, and facilitating conditions than men did (Owusu Kwateng et al., 2019).

On the contrary, other studies revealed a significant relationship between the effects of gender moderation and behavioral intentions to adopt mobile banking. Nonetheless, researchers decided to ascertain gender as a moderation effect.  Made the hypothesis

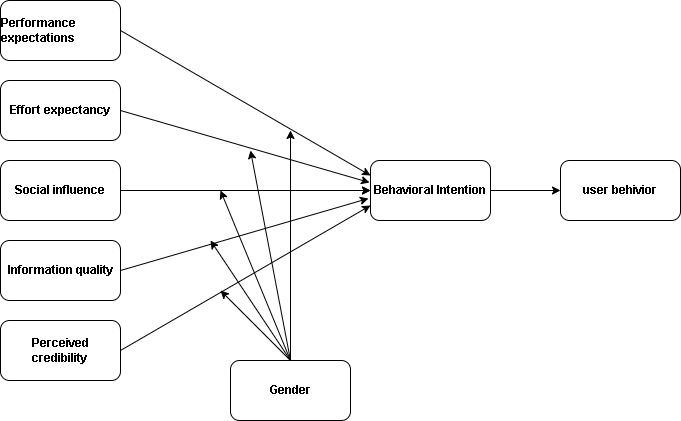
H7 (a) The effect of performance expectancy on one's intention to use mobile financial services is moderated by gender.

H7 (b) the effect of expectancy on one's intention to use mobile financial services is moderated by gender.

H7 (c) The effect of social influence on one's intention to use mobile financial services is moderated by gender.

H7 (d) the effect of information quality on one's intention to use mobile financial services is moderated by gender.

H7 (e) the effect of perceived credibility on one's intention to use mobile financial services is moderated by gender.



**Figure: 1 conceptual framework**

**3. Methodology of the study:**

**3.1 Research Design**

The methodology for this study was to gain in depth information about people’s underlying reasoning and motivations for accepting mobile financial services. The goal is to develop an understanding of the topic from an individual's point of view. The first part of the questionnaire consists of three demographic questions linked to gender, age, and level of education. The second part of the questionnaire employed a series of multi-item scales to measure the interrelationships between each of the m-banking factors, namely, performance expectancy, effort expectancy, social influence p, information quality, perceived creditability, and behavioral intention.

**3.2 Data Collection**

For the purpose of this study, we collected 450 responses. From there, 303 were reasonable and 147 were not. This data was collected from various primary and secondary sources to measure and find out the customers’ acceptance of mobile financial services. In this study, the primary data was collected from interviews with customers and respondents' answers by distributing the questionnaire with the help of social media and a Google Form that was distributed using an internet link.

The secondary data sources were journals, books, the internet, etc. Secondary data were used to provide the theoretical background for the research problem. The questionnaire in this study used a 5-Likert scale questionnaire model, which was referred to in previous studies (Venkatesh et al., 2016) with adjustments to the context of the object under study, namely the user's perception of using mobile banking services. The questionnaire in this study consisted of 29 statements that had to be answered by respondents regarding the factors in UTAUT2 related to the use of mobile banking.

**3.3 Data Analysis Technique**

The analysis conducted by researchers using the UTAUT 2 method was to determine the relationship between performance expectancy, effort expectancy, social influence, information quality, and perceived credibility moderated by gender as a variable in behavioral intentions to acquire mobile banking. A quantitative approach is used to measure this study using a Likert scale technique ranging from 1 for statements of strongly disagree to 5 for statements of strongly agree. Variables for performance expectancy, effort expectancy, social influence, information quality, and perceived creditability used question items adapted from UTAUT 1 and UTAUT 2 theory.

A two-stage methodology was adopted to test the measurement and structural model using IBM SPSS-25 and AMOS-24 (Anderson & Gerbing, 1988).To test our model of information quality for mobile financial services, we conducted the following: analyses: Firstly, confirmed the existence of four separate dimensions of mobile information quality through exploratory component factor analysis. We computed Cronbach’s alpha coefficients to the construction of measures using the average of the scales. Secondly, in order to perform a cross validation test, used two subsets of data as samples from the full dataset. Thirdly, evaluated the structural equation model to test the causal relations among the four dimensions of information quality, user satisfaction, and customer loyalty.

**3.4 Ethical Consideration**

The study has no bias in reaching any conclusion. The identification of the respondents is taken care of with caution and is not discerned in any way. The participation of the respondents is voluntary. Every participant is aware of the objective of the study. To increase the validity of the content, respondents were explained about the services provided by mobile banking, and vigilance was taken to make certain that respondents were familiar with m-banking concepts. The research is not sponsored by any public or private institution.

1. **Analysis and results** **of the study:**

**4.1 The measurement scale’s descriptive statistics**

The survey was conducted, and 303 usable responses have been received. Noticeably, more than half of the respondents (50.2%) were male, whereas females captured about 49.8% of the total sample. The descriptive statistics revealed that most of the respondents were found within the age group of 16–25 (64.7%), 26–35 (27.1%), 36–45 (6.6%), and 46–55 (1.7%). The respondent education levels were higher secondary school (21.8%), graduation (58.7%), and masters (19.5%). The most prominent educational level of respondents’ graduation (58.7%).The marital statuses of all respondents were single (79.5%) and married (20.6%).

**Table 1. Descriptive statistics of respondents’ characteristics (n = 303).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Details** | **Frequency** | | **Percentage** | |
| **Gender** | Male | 183 | | 73.4 | |
| Female | 65 | | 26.6 | |
| **Age** | 16-25 | 196 | | 64.7 | |
| 26-35 | 82 | | 27.1 | |
| 36-45 | 20 | | 6.6 | |
| 46-55 | 5 | | 1.7 | |
| **Level of Education** | HSC | 66 | | 21.8 | |
| Graduations | 178 | | 58.7 | |
| Masters | 59 | | 19.5 | |
| **Total(n)** | | **303** | | **100** |

Based on the results of distributing questionnaires via internet links, responses were obtained from 303 respondents who used mobile financial services. Respondents in this study have varying levels of education, ranging from high school diplomas to bachelor degrees. Following are several tables showing the demographics based on gender (Table 2) and education (Table 3) of the respondents in this study.

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**4.2 Measurement model analysis**

Measurement Model Test Following the method in SEM, this section assessed the outer model. There is convergent validity, discriminant validity, and reliability testing. The SEM method shows how the constructs in UTAUT theory affect the use intention for mobile financial services. The measurement model used was the development of the structural model conducted by previous researchers (Venkatesh et al., 2012) in UTAUT 2.

According to (Farah et al. 2018) can be used to measure discriminant validity. If the correlation value between the indicator and other constructs is lower than the indicator's correlation value to the construct, the constructs are a good category. The value of the square root of AVE greater than the correlation between latent constructs indicates that the latent construct has good discriminant validity in the model.

Table 2 demonstrates that every construct had a loading factor greater than 0.7. According to the AVE test, every construct had a value of more than 0.5. The composite reliability and Cronbach's alpha values were greater than 0.70. This suggests that the latent constructs exhibited reliable values.

**Table 2: Convergent Validity test and reliability test**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Measurement | Loading Factor | Cronbach's alpha (α) | Composite Reliability (CR) | AVE | Criteria |
| PE |  | 0.970 | 0.975 | 0.912 |  |
| PE1  PE2  PE3  PE4  PE5 | .970  .958  .941  .916  .923 |  |  |  | Valid  Valid  Valid  Valid  Valid |
| EE |  | 0.975 | 0.981 | 0.912 |  |
| EE1  EE2  EE3  EE4  EE5 | .926  .970  .971  .953  .955 |  |  |  | Valid  Valid  Valid  Valid  Valid |
| SI |  | 0.968 | 0.972 | 0.874 |  |
| SI1  SI2  SI3  SI4  SI5 | .943  .953  .918  .932  .955 |  |  |  | Valid  Valid  Valid  Valid  Valid |
| IQ |  | 0.961 | 0.964 | 0.870 |  |
| IQ1  IQ2  IQ3  IQ4 | .919  .954  .956  .900 |  |  |  | Valid  Valid  Valid  Valid  Valid |
| PC |  | 0.971 | 0.976 | 0.892 |  |
| PC1  PC2  PC3  PC4  PC5 | .912  .962  .963  .959  .925 |  |  |  | Valid  Valid  Valid  Valid  Valid |
| BI |  | 0.960 | 0.966 | 0.851 |  |
| BI1  BI2  BI3  BI4  BI5 | .865  .943  .955  .944  .902 |  |  |  | Valid  Valid  Valid  Valid  Valid |

Noted: PE (performance expectancy); EE (effort expectancy); IQ (information quality); SI (social influence); PC (perceived creditability); and BI (behavioral intention).

According to (Farah et al. 2018), the Fornell and Larcker approach can be used to measure discriminant validity. If the correlation value between the indicator and other constructs is lower than the indicator's correlation value to the construct, the constructs are a good category. The value of the square root of AVE greater than the correlation between latent constructs indicates that the latent construct has good discriminant validity in the model.

Table 3 shows that there was a latent construct that had a higher correlation with other variables when compared to the square root value of AVE. This indicates that there were still latent constructs that had discriminant validity based on the Fornell-Larcker criteria that were not good. The final results of convergent validity and discriminant validity signified that the indicators and latent constructs were still in a good category to form the model.

**Table 3: Test Value of Fornell-Larcker Criterion Discriminant Validity**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **CR** | **AVE** | **MSV** | **MaxR(H)** | **EE** | **TR** | **PE** | **SI** | **BI** | **IQ** |
| **EE** | 0.981 | 0.912 | 0.032 | 0.983 | **0.955** |  |  |  |  |  |
| **PC** | 0.976 | 0.892 | 0.038 | 0.979 | 0.022 | **0.944** |  |  |  |  |
| **PE** | 0.975 | 0.887 | 0.018 | 0.979 | 0.056 | 0.027 | **0.942** |  |  |  |
| **SI** | 0.972 | 0.874 | 0.024 | 0.974 | 0.050 | 0.057 | 0.135\* | **0.935** |  |  |
| **BI** | 0.966 | 0.851 | 0.045 | 0.971 | 0.176\*\* | 0.002 | 0.117\* | 0.156\*\* | **0.923** |  |
| **IQ** | 0.964 | 0.870 | 0.045 | 0.968 | 0.178 | ⁂ | 0.096 | 0.002 | 0.211 | **0.933** |

**4.3 Structural Equation Modeling and Hypotheses Testing**

The structural model test was used to determine the link between the variables in accordance with UTAUT 2 theory. To used AMOS (version 24.0) according to the SEM method to measure how each variable in the UTAUT 2 model calculates the weight of the significant value among the variables tested. The calculation of the path coefficient, t-value, estimate, and p-value executed hypothesis testing in this study. The analysis of main effects shows that three independent variables have a statistically significant impact on behavioral intentions.

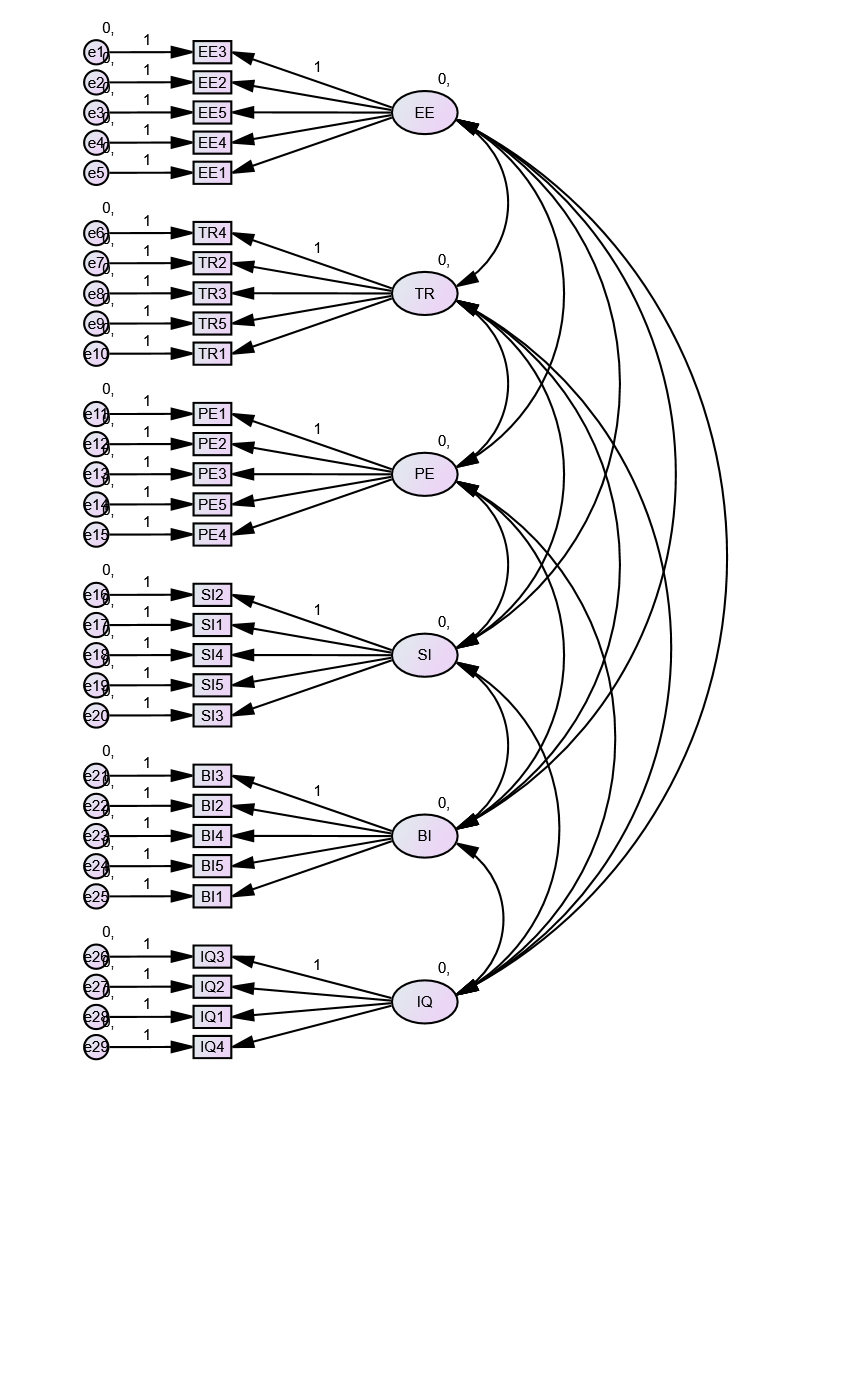
The test results in Table 4 (Figure 1) show that a notable relationship was detected between effort expectancy and behavioral intention (β = 0.122., t = 2.365, p < 0.001). Hence, H2 was accepted. Then, a positive and significant relationship occurred between information quality and behavioral intention (β = 0.178., t = 3.22, p < 0.001). . Hence, H3 was accepted. A positive and significant relationship occurred between social influence and behavioral intention (β = 0.131., t = 2.438, p < 0.001). Hence, H4 was accepted. Therefore, hypotheses H2, H3, and H4 were confirmed, with variable ‘’mobile financial service having’’ the strongest impact on the behavioral intentions of users. It is important to point out that the research output did not confirm a significant impact of performance expectance and perceived creditability channels on behavioral intention, thus excluding hypotheses H1, H5.

**Table 4. Structural Model Analysis**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Hypothesis | Influence | Path Coefficient | T-value | P-value | Significant | Result |
| H1 | BI <---PE | .068 | 1.306 | .192 | N.S. | Not Accepted |
| H2 | BI <--- EE | .122 | 2.365 | .018 | p < 0.001 | Accepted |
| H3 | BI <--- IQ | .178 | 3.222 | .001 | p < 0.001 | Accepted |
| H4 | BI <--- SI | .131 | 2.438 | .015 | p < 0.001 | Accepted |
| H5 | BI <--- PC | .018 | .352 | .725 | N.S. | Not Accepted |

Notes: \*\*p<0.01; \*\*\*p<0.001; Solid line: Significant Relationship; Dashed line: Non-Significant Relationship.

Figure 1. Structural Equation Model



* 1. **Moderator Analysis:**

Regarding the effect moderation of gender on five variables on behavioral intention, table 5 shows the result of the effect for performance expectancy (PE), effort expectancy (EE), social influence (SI), information quality (IQ), and perceived credibility (PC) on the five variables (PE, EE, SI, IQ, and PC) moderated by gender on behavioral intentions. There was also an insignificant relationship between the four values of the variables moderated by gender on behavioral intentions: PE (ß = .213, t = 1.221, p = 0.222), EE (ß = -.051, t = -.454, p = 0.650), SI (ß = -.064, t = -.127, p = 0.899), and PC (ß = -.033, t = -.187, p = 0.852). Thus, H7 (a), H7 (b), H7 (c), and H7 (e) were rejected, respectively. There was also a significant relationship between information quality moderated by gender and behavioral intentions was IQ (ß = 0.488, t = 2.772, p = 0.006). Thus, H7 (d) moderate relationship by gender to behavioral intentions was accepted.

**Table 5: moderator analysis**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Influence** | **Path Coefficient**  **(ß)** | **T-value** | **P-value** | **Results** |
| PE\*Gender -> BI | 0.213 | 1.221 | 0.222 | (Rejected) |
| EE\*Gender -> BI | -.051 | -.454 | 0.650 | (Rejected) |
| IQ\*Gender -> BI | 0.488 | 2.772 | 0.006 | (Accepted) |
| SI\*Gender -> BI | -.064 | -.127 | 0.899 | (Rejected) |
| PC\*Gender -> BI | -.033 | -.187 | 0.852 | (Rejected) |

Notes: \*\*p<0.01; \*\*\*p<0.001; solid line: significant relationship; dashed line: non-significant relationship.

**5. Discussion**

The study aimed to figure out the antecedents and consequences of attitudes toward using MFS in Bangladesh. This study analyzed the influencing factors behind the adoption of mobile banking based on UTAUT theory (Venkatesh et al., 2012), and its development is based on UTAUT 2 theory. Several factors in UTAUT2 did not actually determine the intention to use mobile banking services. These factors include: facilitating conditions, price value, hedonic motivation, social influence, and effort expectancy. Aryono Putranto, I. (2020). Our study shows that the framework built- into UTAUT 2 has a significant effect on increasing understanding of significant phenomena (Farah et al. 2018), including understanding of adopting mobile financial services. 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 (Dewi Yuliana & Aprianingsih, 2022).

According to the results of this analysis through the SEM method, the hypothesis for H1 was supported. Performance expectancy had a positive and significant effect on the use intentions of a consumer's behavioral intentions toward mobile financial services. This proves that consumers believe that mobile banking performance positively affects consumer intentions to apply mobile financial services (Himel et al., 2021). Individuals believe that financial performance addresses an intention to use mobile financial services in real life. According to this study, a consumer's performance expectancy positively and significantly predicts their desire to embrace m-banking services; a higher performance expectancy indicates a higher likelihood of using m-banking services. The latter results from performance expectations, which provide prospective users with favorable impressions of the applications.

The greater an individual’s performance expectancy, the greater his/her belief that m-banking positively contributes to his or her life and activities compared to other banking alternatives (Farah et al., 2018). When compared to MFSs used by traditional banks, Islamic banks' clients are comparatively unfamiliar with the Islamic MFS. As a result of transactional risk, clients are very concerned about credibility. MFS apps guarantee transaction consistency, security, transparency, and structural assurance. As a result, clients will feel secure conducting business with Islamic MFSs. However, there was no discernible effect on the adoption of Islamic MFS from two prominent factors: performance expectancy and effort expectancy (Hassan et al., 2023). These findings showed that respondents thought BI's mobile banking was simple to use and comprehend, and that it offered advantages since it may make them more efficient when making bank transactions.

Therefore, behavioral goals must create mobile financing with straightforward and understandable processes so that customers can quickly conduct transactions and avoid wasting time studying (Dewi Yuliana & Aprianingsih, 2022). In reality, m-financing apps' widespread availability gives users an extra benefit over traditional banking channels because they offer prompt, individualized support. Customers are therefore more inclined to anticipate excellent performance from such an application. As a result, a customer will utilize m-financing since they see it as a practical and easy way to complete financial activities (Farah et al., 2018). Actually, consumers profit more from the widespread availability of m-financing apps than from traditional banking channels since they provide quick, personalized help.

Thus, users are more likely to expect top-notch functionality from such an application. Because they view m-financing as a convenient and straightforward method of completing financial transactions, they will consequently use it. This study also demonstrated the significance of social variables and arbitrary norms in influencing consumers' intentions to use m-financing. People in Bangladesh are more focused on their families. The counsel and opinions of their family members have a big impact on them. Families are often the first to provide advice when it comes to finances. Millennials are also impacted by recommendations from their friends (Hassan et al., 2023). According to research, when new technologies are supported and promoted by significant others, people are more likely to embrace and utilize them in their lives (Mbrokoh, 2016). Furthermore, a person is more likely to employ a new good or service if it is recommended and utilized by the opinion leader in their immediate social circle. Self-perceptions of the qualities and capacities of application security, dependability, and privacy are combined to form a unique construct called perceived credibility (Farah et al., 2018). Additionally, because mobile banking offers privacy and security, perceived legitimacy is a crucial determinant of consumer adoption (Dewi Yuliana & Aprianingsih, 2022).

Based on the results of the study, it appears that social influence (SI) has a significant positive effect on behavioral intention (BI). The study's overall findings support the notion that consumers are social creatures, and their intentions to use mobile banking depend heavily on the norms and values that are supported and valued by the society in which they live (Bhatti, 2007). Additionally, because this is a collectivist country, where people prioritize and appreciate the opinions of their family and community over their own preferences and beliefs, the culture may be the reason why social norms have such a strong influence (Farah et al., 2018).

Social influence is an influential variable that is natural because a very large environmental influence encourages someone to use technology. In addition to privacy and security issues, information quality, and service quality all have a big impact on flow. In the context of mobile payment services, flow and service quality are favorably correlated. Service providers must continuously work to provide consumers with high-quality services and invest resources in doing so (Gao et al., 2015). The results also occurred in our hypothesis for H5, which was supported. The most positive predictor of intention to use mobile financing, according to this research, was perceived credibility.

The aim of this research is to examine how gender influences the moderating effects of suggested model relationships. A multi-group SEM was used to examine the moderating effects of gender on the associations in the generated model. Comparative value was revealed to be the primary motivator of continuing intention, while performance expectancy was found to be the biggest predictor of satisfaction (Dewi Yuliana & Aprianingsih, 2022). Furthermore, three out of ten effects showed a confirmed, significant difference in attitudes between men and women. The study's uniqueness lies in its assessment of the moderating influence of gender on user satisfaction with m-commerce, which it plans to continue.

**6. Conclusion**

A mobile financial service refers to the provision of financial services through mobile devices such as smartphones and tablets. It might cover aspects such as the definition and scope of mobile financial services, their impact on financial inclusion, the various services offered (e.g., mobile banking, money transfers, and payments), as well as the benefits and challenges associated with these services. Bangladesh's quick adoption of financial technology is bringing the country's financial sector into a new era of innovation. Annually, companies offering mobile financial services (MFS) reach unreachable economic heights. There has been a notable increase in MFS for conventional banks. Nonetheless, Islamic banks hold a significant portion of the market but are unable to draw in new clients for the Islamic MFS.

The present research puts forward an integrative model to raise awareness regarding the decision factors affecting the adoption of mobile banking. The research model of the present study is designed by combining the unified theory of acceptance and usage of technology (UTAUT) (Venkatesh et al., 2003). This study offers a special approach to identifying the variables influencing Bangladesh's mobile banking services. This study attempts to understand the factors that are connected to customers’ intentions and adoption of mobile financial services. This study also outlines the primary elements that could support or obstruct Bangladeshi clients' plans to use mobile financing services for financial transactions in their everyday lives. A thorough model was employed in the current study to identify the most important variables influencing the behavioral intentions of the customers. Customers who have some faith in the Internet and bank online technologies are more likely to use online banking since perceived security and behavioral intention are significantly correlated.

The aim of this research is to examine how gender influences the moderating effects of suggested model relationships. A multi-group SEM was used to examine the moderating effects of gender on the associations in the generated model. Comparative value was revealed to be the primary motivator of continuing intention, while performance expectancy was found to be the biggest predictor of satisfaction. Furthermore, three out of ten effects showed a confirmed, significant difference in attitudes between men and women. The study's uniqueness lies in its assessment of the moderating influence of gender on user satisfaction with m-commerce, which it plans to continue.

As a result, lenders must take into consideration the worries that their clients have about trust and security. It is imperative that clients receive adequate assurances of safety and security when using internet banking (Khan et al., 2017). In conclusion, we must agree with the fact that mobile financial services are one of the “big things” in the economy of an affluently developing country. It has been creating a mention-worthy customer base, though there are not too many reliable options for the customers since it’s an oligopoly industry. Mobile Financial Service is very new to Bangladesh, and it is in its growth stage. It is necessary for the MFS companies to create a hub to promote their services to the unbanked people of our country.

It is necessary to improve the infrastructure of MFS companies so that they can provide secure and affordable service as quickly as possible. On the other hand, customers need to be acknowledged and trained through mass communication channels. The main concept of MFS, as discussed before, is to give the same privilege to all economic groups in society. This research has served to enhance the understanding of consumers’ attitudes towards accepting mobile banking/mobile financial services in the context of Bangladesh. This study has also explored the reasons behind bKash's fast growth in the market. This report will help government policymakers, m-banking service providers, and practitioners in the field of mobile financial services.

MFS is a service provided by a financial institution (e.g., a bank or securities provider) that enables customers to conduct various financial transactions remotely using a mobile device (e.g., a smartphone or tablet) and mobile software (e.g., apps or programs). Mobile banking is typically available 24 hours a day, enabling users to access account balances, pay bills, and transfer funds through their mobile devices instead of visiting banks and using computer-based Internet banking. Despite the widespread adoption of mobile devices, the adoption rate of MFS is relatively.

**6.1. Theoretical implication**

The study also contributes to the customer satisfaction and banking literature. Future researchers should start at UTAUT. The combination of eight earlier hypotheses gave rise to UTAUT. UTAUT was expanded to incorporate a few more constructs and became known as UTAUT2 after nearly ten years of use in a variety of IS domain contexts and technologies. This paper's model applies the seven UTAUT2 components to a novel cultural setting, adding PS to the theory to increase its applicability to the setting of a developing economy (Khan et al., 2017). The study pointed out several theoretical implications.

**First,** the authors used an advanced version of TAM to model the determinants of attitude and intention to utilize MFSs, adding two more antecedents: obstacles and trust. 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 (Himel et al., 2021).**Second**, by adding new variables to the original TAM model, it was possible to explain the attitudes and behavioral intentions of Bangladeshi MFS users with sufficient explanatory power and predictive relevance. Third, this study added information about the mediating role of attitude in the negative relationship between adoption barriers and MFS adoption intention, whereas earlier research using the TAM model primarily assessed the mediating role of attitude in the relationship.

**6.2. Managerial implication**

The findings of our study have implications for management, government, and policymakers. The findings of the present research have contributed to an inclusive awareness regarding the decision factors that affect the adoption intention of mobile financing. For researchers, the present study, instead of focusing on a single theoretical framework, provides an all-inclusive approach by incorporating three established theories of technology acceptance. This study provides a unique model to unveil the factors affecting online banking in Bangladesh. In a developing nation such as Bangladesh, MFS is not a novel technology. The service has been known to the people of Bangladesh for ten years. The study sought to understand why Bangladeshis embrace MFSs with such fervor. The barriers, on the other hand, have also been found to account for its sluggish growth and its dangers (Himel et al., 2021).

The managerial implication is for managers to focus more on the perceived ease of using MFS technology. When MFSs are simple for users to learn and operate, they become reliable and valuable resources. This study's conclusion indicates that consumers' trust is bolstered by technology's ease of use. A significant number of participants hold the belief that MFSs that are unambiguous, comprehensible, adaptable, and transparent rapidly foster confidence among their users. Technology's degree of simplicity of use also raises its utility factors (Himel et al., 2021).The results alert bank managers to the need to focus more on clients than technology. Providing the highest caliber of services should be the primary goal, but the technology focus and the customer satisfaction component shouldn't be divorced (Khan et al., 2017).

The most important variables, such as effort and performance expectations, information quality, and security, must be taken into account by managers and regulators. These elements will increase consumers' inclination to embrace technology and online banking services with confidence and serenity (Khan et al., 2017) Customers place a high value on performance; thus, bank management may update the technology to give them more performance opportunities. Knowing that FC plays a significant role in Bangladesh's adoption of internet banking will also be helpful to management.

Bangladeshi customers weigh the costs and benefits of internet banking. Bank authorities are urged by this to reduce the amount that regular customers must pay for internet services. Customers who are price-sensitive may stop doing business with banks if the expenses of internet banking outweigh those of traditional banking. Clients are security-aware, so management can create policies to add more advanced security measures to their databases.

Thus, it's also a good idea to handle financial services and data using the most recent steganography and cryptography methods. By taking these safety measures, you can help customers see your security concerns more favorably (Khan et al., 2017). The management team should prioritize group training and a plan to raise technological awareness among peers, coworkers, and local management. The management of the banks may use these types of gatherings to increase the number of online clients they have because the local population is greatly impacted by religious and other communal activities.

**6.3. Limitations and directions for future research**

Because it ignored a sizable portion of the rural population, the sample size used in this analysis was not particularly representative of the Bangladeshi population as a whole. Furthermore, the hypothesis of this investigation may be impacted by the fact that the examples are biased toward the population. This could be attributed to Bangladeshi culture's general tendency for men to engage in mobile financial services. Similarly, this analysis only looks into the factors that influence the customer's behavioral intention to use mobile financial services in financial transition. Future research could involve a large-scale investigation with a larger sample size to confirm the study's contributing components and enhance the study's conclusions' generalizability.

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