

## Investigating consumers' intentions regarding the adoption of mobile payments: An SEM-based empirical investigation



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### ABSTRACT

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The impact of mobile commerce on our daily lives is growing, and it is starting to provide new services that are both engaging and beneficial. The study's objective is to look at how users intend to utilize mobile payment (m-payment) services and how usage intentions and customer satisfaction are impacted. This study aims to comprehend the current state of m-payment services in Bangladesh and determine whether consumer intentions are affected by perceived ease of use, perceived usefulness, mobility, cost, perceived risk, perceived trust, and social influence. A structured online survey with 350 valid samples was undertaken to gather contextual data. The results indicate that perceived ease of use, perceived usefulness, perceived trust, and social influence have a significant and positive impact on m-payment services. On the other hand, mobility, cost and perceived risk have not influenced consumer intentions toward m-payment services. However, this research will assist managers in creating appropriate business plans and service strategies for distinct m-payment user groups, enabling them to invest the necessary amount of time, effort, and money in the creation of m-payment systems. The results will also serve as a reference for future mobile payment research.

**Contribution/Originality:** The findings will help to drive the development of mobile marketing research and offer substantial practical contributions for the design of operative mobile advertising. This study will assist managers in creating service and business plans suitable for diverse m-payment user groups.

## 1. INTRODUCTION

Innovative payment methods are the next stage in the development of electronic payments for financial transactions and have been made available to consumers by the advancement of mobile phones (Mouakket, 2020). M-payment is often done online through premium short messaging services (SMS), wireless application protocol (WAP) billing, mobile web, direct-to-subscriber bills, and direct-to-credit cards. Researchers are becoming increasingly convinced that, with their many benefits, mobile payment systems are a viable alternative to traditional payment methods (Johnson, Kiser, Washington, & Torres, 2018). This is a result of the many advantages of m-

payment, including its ease, speed, security, ability to make large payments in bulk, and the ability to do away with the need for currency (Liébana-Cabanillas, Marinkovic, De Luna, & Kalinic, 2018; Park, Ahn, Thavisay, & Ren, 2019). Most businesses and government agencies have improved their business plans and upgraded their payment systems to m-payment systems in order to keep up with the current market trend (Ariffin & Lim, 2020). Therefore, the goal of the current study is to objectively assess the factors influencing the growth of the intention to use m-payment. To do this, a research model is proposed (see Figure 1) using perceived ease of use, perceived usefulness, mobility, cost, perceived risk, perceived trust, and social influence. The m-payment revolution is reshaping households and businesses in developing nations by giving small and medium-sized enterprises a business solution, providing the underserved population with access to mobile financial services, and assisting developing economies to advance past a weak or nonexistent payment infrastructure (Asongu, Nwachukwu, & Orim, 2018). With 168.367 million mobile phone subscribers and 101.905 million mobile internet users, Bangladesh is a market with a lot of commercial potential. According to market research, 76.5 million Bangladeshis, or roughly 45% of the population, own or use a smartphone on a regular basis (Islam, 2021). One of the most obvious developments in Bangladesh right now is the expansion of digital payments, which has sparked a digital ecosystem and improved the country's economy. The dynamics of the payment industry, as well as the nation's economic circumstances, have changed substantially as a result of the current COVID scenario, something that has never previously happened. During COVID-19, digital payments in Bangladesh also assisted the government in providing financial aid to the country's poor citizens. According to predictions from Bangladesh's government, by 2020, 7.7% of the population would have used mobile financial services for payments (Islam, 2020). A new report by Research and Markets says that nearly half of all customers around the world are using digital payments more now than before the pandemic. Most of these customers said they plan to keep using digital payments after the virus is contained (Islam, 2021).

In addition to businesses, scholars have become interested in the advent of m-payment. Numerous studies from around the world have been conducted to identify the primary factors influencing the adoption of m-payment systems (e.g., (Liébana-Cabanillas et al., 2018; Verkijika, 2020)). As an illustration, Cao, Yu, Liu, Gong, and Adeel (2018) employed the trust transfer theory to determine how long consumers want to continue using m-payments; however, research on this topic is still in its infancy (Gupta & Arora, 2020; Leong, Tan, Puah, & Chong, 2021). Studies of mobile payment have mostly examined users' intentions to use the technology because it is relatively new (Cao et al., 2018; Liébana-Cabanillas, Molinillo, & Ruiz-Montañez, 2019). Post-period acceptance has received less attention. The acceptance or rejection of m-payment by customers may be explained by a number of reasons. Recent research (Qasim & Abu-Shanab, 2016) has shown that both positive (perceived ease of use, perceived usefulness, trust, and social influence) and negative factors (mobility, perceived risk, and cost) affect how people act and plan to act when it comes to mobile payments. Perceived usefulness and risk are two key positive and negative criteria that are extensively studied in the literature on m-payment acceptance in this research, leaving the perceived cause and users' sentiments largely unexplored (Dahlberg, Guo, & Ondrus, 2015). Some researchers have investigated the impact of elements influencing customer behavior when purchasing online (Koo, Cho, & Kim, 2014), and other researchers have looked at the effectiveness of factors influencing mobile app usage and their intent to continue doing so (Ding & Chai, 2015). Despite the expanding body of research, gaps remain that this study aims to fill. To better understand the variables impacting m-payment technology in the post-adoption setting, this paper concentrates on elements that have not been considered in earlier research.

The study makes a variety of contributions that practitioners, researchers, and m-payment service providers can use to evaluate customers' views and satisfaction with m-payment services in the context of a developing economy. This study adds knowledge regarding m-payment systems (i.e., perceived ease, perceived usefulness, mobility, cost, perceived risk, perceived trust, and social influence), which will expand mobile payment services in a developing market (i.e., Bangladesh), by examining the relationships between a number of crucial components. The study's results will also be helpful to practitioners by providing knowledge of the key indicators that will determine

whether or not someone will use m-payment services. The remainder of this paper is structured as follows: The second section offers an overview of existing m-payment literature; Section 3 explains the study plan and hypotheses; the methodology is explained in Section 4, along with the research context, questionnaire structure, data collection strategy, and demographic analysis; the data analysis and empirical results are presented in Section 5; and Section 6 discusses the results and opportunities for future research.

## 2. LITERATURE REVIEW

M-payment is the practice of using a personal mobile device, a personal digital assistant, a radio frequency device, or a device based on near-field communication, to make payments for products and services (Patil, Tamilmani, Rana, & Raghavan, 2020). Mobile phones have developed from simple communication devices to multifaceted gadgets. This evolution is introducing new services and facilities with new challenges to understanding consumer acceptance processes (Koenig-Lewis, Marquet, Palmer, & Zhao, 2015). Mobile technology has impacted every sector of the economy, which means that it is accelerating and opening up new markets for retail, healthcare services, education, and finance (Rahman, Al-Amin, & Lipy, 2020). Consumers will be able to request, approve, and complete financial transactions using payment systems and mobile devices (Patil et al., 2020). There are various kinds of payments, such as services for using a mobile device to pay bills and invoices; purchasing digital content such as ringtones, news, music, games, and concert or flight tickets; paying for parking, bus, tram and rail tickets and taxi fares, in addition to many others. The use of a mobile device to connect to a server, complete authentication and authorization, make an m-payment, and then verify the transaction's success is possible (Kim, Mirusmonov, & Lee, 2010).

M-payment is useful for mobile users who want to make payments quickly and at the right time. "M-payment" is a term used to describe a particular type of mobile payment mechanism in which instructions and data related to payments are transmitted via these devices (Xin, Techatassanasoontorn, & Tan, 2015). With the help of m-payment systems, users can conduct commercial transactions and pay for their goods and services whenever and wherever they choose (Al-Saedi, Al-Emran, Ramayah, & Abusham, 2020). It also includes mobile wallets, virtual currency, digital wallets, or mobile money, all of which refer to financial actions, such as paying bills or buying products and services via a mobile device (Koenig-Lewis et al., 2015). Due to the COVID-19 pandemic, the usage of mobile payments has advanced to its highest degree, with shopping, purchasing, and other home-based activities being used to conduct them. In Bangladesh, the current popular mobile banking companies include bKash, Nagad and Rocket. Due to the large number of mobile phone users, the m-payment method has a strong draw for online merchants. It not only lowers overall transaction costs but also provides greater payment security. For a variety of reasons, including privacy concerns and the inability to handle international payments, mobile payment systems have had difficulty building up a sizable customer base (Bezovski, 2016). Mobile ordering, where a mobile device is only used to place an order and not pay for it; mobile delivery, where a mobile device is only used to receive delivery of digital services; mobile authentication, where a mobile device is used to verify a user's identity; and mobile banking are some of the services that define m-payment services (via a mobile device to access banking functionalities) (Koenig-Lewis et al., 2015). Nowadays, more people are utilizing mobile banking, and that number is growing daily. Many academics have used various models over the years to comprehend the factors that influence the uptake of mobile payment and have developed fresh concepts for organizations (Verkijika, 2020). The major advantages of mobile payment are its accessibility and flexibility, allowing both customers and businesses to accept payments at any time, from any location (Koenig-Lewis et al., 2015).

### 2.1. Perceived Ease of Use

M-payment measures how well a technology is seen as being simple to use and comprehend. Users are more inclined to embrace a perceived innovation or application if it is easier to use than another. The perceived ease of use

for gathering mobile payment intentions has a significant impact on m-payment. Shankar and Datta (2018) stated that utilizing a certain piece of technology would be simple to the extent that they believed it to be. Perceived utility and perceived simplicity of use have a direct impact on customer intention (Wong & Mo, 2019). Using a mobile phone to make a payment or transfer money is quick and simple in real-time. It is easier to use because it is usable anywhere and allows instant payment. In addition to using m-payment, people can also save time by making payments at home easily. The first hypothesis is proposed as follows:

*H1: Perceived ease of use has a positive impact on the intention to use m-payment.*

## 2.2. Perceived Usefulness

Perceived usefulness refers to the degree to which a person thinks that employing a certain system will improve his or her ability to accomplish a task (Pham & Ho, 2015). The level of adoption of a certain technology is a measure of how much people think it is helpful. Online utility bill payment, mobile and television (TV) charges, money transfers, balance transfers, and ticket booking are all examples of transactions that are easy to complete using mobile payment and are a sign of a system's effectiveness (Shankar & Datta, 2018). The second important aspect that influences customers' intention to use a system is perceived usefulness, and in contrast to other payment options, it is not perceived as being more beneficial by consumers. It should increase the utility of mobile payment while decreasing the utility of conventional payment methods in order to increase the proportion of customers that utilize mobile payment. The government and businesses should collaborate to make mobile payment more beneficial in order to improve its utility (Wong & Mo, 2019). Mobile-based payments are a convenient method of payment, and users will utilize these systems if they feel they are beneficial for their transactional demands or financial problems (Kim et al., 2010; Sreelakshmi & Prathap, 2020). This study assumes that m-payment usage is growing through its usefulness and convenience. Therefore, we propose the following hypothesis:

*H2: Perceived usefulness has a positive impact on the intention to use m-payment.*

## 2.3. Mobility

People think that the more useful mobile payment systems are, the more widely they will be accepted (Al-Saedi et al., 2020). Given the variety of uses of mobile payment, its mobility is more effective and positively affects the intended goal of mobile payment. Mobility is the key component of mobile technology, giving users the freedom to access services from any location at any time through wireless networks and a variety of mobile devices (Kim et al., 2010). M-payment mobility has increased significantly in recent years around the world, including in Bangladesh where people began accepting m-payment alternatives by utilizing mobile phones. They believed that by using a mobile phone to make payments, they could easily pay their bills and that this was the easiest and safest way for them to remove their external barriers. Users have become more aware of this as they utilize mobile payment systems more frequently (Flavián, Guinaliu, & Lu, 2020). Based on the foregoing, the proposed hypothesis is:

*H3: Mobility has a positive impact on the intention to use m-payment.*

## 2.4. Cost

The term "perceived cost" describes how much users think it will cost them to use m-payment technology. The price may include the purchase of a device, the membership charge, and any internet expenses incurred to download the relevant application (Al-Saedi et al., 2020). According to Pham and Ho (2015), the cost of m-payment is derived without assistance. There could be a lower usage of mobile payments because people do not perceive the value of the costs involved. If people are not happy with the cost of using mobile payments, the cost amount has to be adjusted to make it more affordable for users. However, our study shows that the price of mobile payments is a factor that makes consumers more likely to use them. By putting the emphasis on reducing transaction costs, treating each transaction as a separate entity, and identifying the differences between different types of transactions, we believe

that cost is one of the key determinants of m-payment intention. The costs of searching for information, negotiating and putting contracts into action, making sure management follows the rules, and dealing with contract violations are all part of the transaction costs. Thus, we propose the following hypothesis:

*H4: Cost has a positive impact on the intention to use m-payment.*

### 2.5. Perceived Risk

Consumers have a very real concern when it comes to security risk, which is defined as the possibility of privacy invasion in the context of electronic services. First, a lot of individuals are unfamiliar with modern technological services such as mobile payment methods. Second, because they are more challenging to analyze by nature, services are seen as riskier. Finally, using a mobile payment service is frequently associated with a high risk of loss, including possible losses relating to privacy, personal information, and the transaction itself, which raises concerns about how safe these services are (Schierz, Schilke, & Wirtz, 2010). According to some research, people's decisions to make a purchase in an online business-to-consumer commerce situation are severely influenced by their perception of risk. Wong and Mo (2019) stated that consumers' buying decisions might be influenced by perceived risk, but in our study, perceived risk is also concerned with m-payment strategy, and it offers convenience to customers. There is no doubt about the potential risks of m-payment, but there are security measures such as PINs and fingerprint/facial recognition in place to protect users. That's why there is no fatal risk in m-payment and that these services are more secure than before. Therefore, we propose the following hypothesis:

*H5: Perceived risk has a positive impact on the intention to use m-payment.*

### 2.6. Perceived Trust

In electronic financial transactions, where consumers face more risks because the environment is unpredictable and they feel like they don't have full control, trust is very important. Trust is defined as a party's subjective confidence that the other party will do what they are supposed to do. In creating interpersonal and commercial connections, trust is crucial in deciding how two or more parties will act in the future. In other words, trust is a conditional guarantee that customers will have a good opinion of a mobile payment service provider's skills, honesty, and good will. In other words, customers won't have a compelling experience if they don't trust the companies offering mobile payment services (Patil et al., 2020). Perceived trust is a difficult issue in social psychology and marketing (Wong & Mo, 2019). It was discovered that clients had put off making an online purchase because they felt that the security was insufficient. Trust is reflected in the assurance and security felt toward another person.

Lack of trust is one of the most often cited reasons by buyers for deciding not to purchase goods from e-commerce websites (Xin et al., 2015). Trust is acknowledged as being a critical element in developing technologies and digital media since it has a significant impact on people's acceptance, intention to use, and attitude. It has a significant impact on people's willingness to take action (Jung, Kwon, & Kim, 2020). Trust is characterized by competence, honesty, and compassion. Competence is defined as having the abilities and information necessary to perform one's responsibilities as a service provider. Being trustworthy means keeping one's word and not deceiving clients.

People may be especially worried about privacy concerns associated with mobile payment services, such as the fear that their purchases may be tracked by unwelcome advertisers, their banking information may be compromised because there aren't transaction records, or they may encounter unreliable network quality with mobile payment services (Jung et al., 2020). In the context of mobile payments, trust has acquired significant momentum as a unified idea of customer behavioral intention (Patil et al., 2020). Therefore, we propose the following hypothesis:

*H6: Perceived trust has a positive impact on the intention to use m-payment.*

### 2.7. Social Influence

Social influence describes how much an individual's technology use is influenced by the opinions of others. The most significant element in determining whether a new technology will be accepted is expected to be its social impact. According to the available studies on m-payment adoption, social influence has been discovered to have a favorable impact on the behavioral intention to use m-payment technology (Al-Saedi et al., 2020). Lack of money is no longer a problem, and this is one of the catchphrases that businesses use to get customers to pay for goods or services with their mobile phones (Altounjy, Alaeddin, Hussain, & Sebastian, 2020). Social influence refers to how much someone is influenced by others in their social context. The potential adopter may be subject to social pressure from family, friends, or other people in similar social groups. An individual may seek opinions or guidance from their social networks due to the uncertainties surrounding the adoption of new technologies. As a consequence, the person may accept technology with less reliance on personal opinions and views while simultaneously considering the psychological and social hazards associated with social contact. According to various studies on the adoption of technologies, social influence is a precursor to technological acceptance (Sharma, Govindaluri, Al-Muharrami, & Tarhini, 2017). The following hypothesis is proposed:

*H7: Social influence has a positive impact on the intention to use m-payment.*

The following research paradigm is suggested in light of the aforementioned considerations.

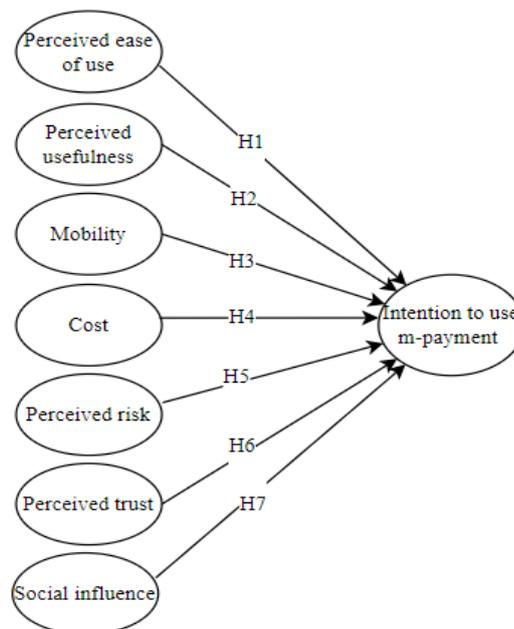


Figure 1. Research model.

## 3. RESEARCH METHODOLOGY

### 3.1. Instrument Development

The survey comprised six factors – age, gender, education, occupation, factors of mobile payment per month, and income level. This survey derived the outcome rate of users by age, gender, education, and occupation. This study evaluates how people with various characteristics use m-payment in their daily lives, and the results of the survey show how often people and businesses in Bangladesh use m-payment.

### 3.2. Data Collection

Users of e-commerce and mobile banking in Bangladesh were surveyed to gather first-hand information through an online survey. Interested visitors were asked to follow the survey links that we placed in order to complete surveys. The respondents were asked open-ended questions about their personal experiences, and their

answers were kept private. Two experts in the subject were asked to check the relevance and clarity of the questionnaire items. After the scale consistency was verified, a sample of 350 m-payment users was used to complete the questionnaire. All of the people who took part in the study had to have carried out mobile banking transactions before they could take part. Of the 350 samples, 22 were discarded owing to anomalies and problems with normality.

**Table 1.** Demographic characteristics (n = 328).

Factor	Category	Frequency	Percentage
Age	< 20 years	38	11.5
	20–29	200	60.9
	30–39	23	7.0
	40–49	23	7.0
	> 50	44	13.4
Gender	Male	243	74.1
	Female	85	25.9
Education	Below secondary school certificate	13	4.0
	Secondary school certificate	25	7.6
	Higher secondary certificate	155	47.3
	Graduate	87	26.5
	Postgraduate and beyond	48	14.6
Occupation	Student	171	52.1
	Business	47	14.3
	Government job	35	10.7
	Private job	36	10.9
	Others	38	11.8
Frequency of mobile payments per month	< 5	125	38.1
	5–9	74	22.5
	10–14	21	6.4
	15–19	9	2.7
	> 20	16	4.8
	Missing value	83	25.3
Income level in Bangladeshi Taka (BDT)	< 9,000	44	13.4
	10,000–19,000	58	17.6
	20,000–29,000	69	21.0
	> 30,000	110	33.5
	Missing value	47	14.3

### 3.3. Demographic Features

With the aid of SPSS and Amos version 24, the responses from 328 respondents were analyzed. The data collection instrument is a seven-point Likert scale with a range of 1 = strongly disagree to 7 = strongly agree to gather data on six factors. According to the results in Table 1, 200 (60.9%) of the sampled users of m-payment are aged 20–29 years. Regarding gender, there were 243 male respondents (74.1%) and 85 female respondents (25.9%). Regarding education, higher secondary certificate (HSC) is higher than the others with 155 users (47.3%) in this category. Focusing on occupation, the student factor is the most frequent with 171 (52.1%). The frequency of mobile payments per month showed that fewer than five times is the most frequent with 125 (38.1%) choosing this option. Finally, income level shows that greater than 30,000 is the most frequent with 110 users (33.5%) selecting this answer.

## 4. RESULTS

### 4.1. Validity Measurement

The validity of the model is evaluated using corroborative factor analysis. Each construct's dependability is assessed using Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE). In this study, all are higher than the standard value, indicating strong internal consistency in the validity statistics, i.e., values of more than .70 for Cronbach's alpha and CR, and more than 0.50 for AVE. There is no multicollinearity problem with the data, as shown by the variance inflation factor (VIF) values, which range from 1.04 to 1.16 and stay within

the allowed range of 10.0. The tolerance values, which reflect the statistically enhanced strength, range from 0.85 to 0.97. We can see that all values are higher than the standard level of each factor. Table 2 gives a detailed list of the measurement items, along with their standardized factor loadings, Cronbach's alpha, CR, and AVE values from the validity statistics model.

Table 2. Validity statistics.

Construct	$\alpha$	CR	AVE	1	2	3	4	5	6	7	8
1. Social influence	0.79	0.80	0.57	0.75							
2. Ease of use	0.80	0.80	0.57	0.17	0.75						
3. Usefulness	0.83	0.83	0.62	0.08	0.20	0.79					
4. Mobility	0.80	0.80	0.58	0.01	0.03	0.26	0.76				
5. Cost	0.78	0.78	0.55	0.17	0.23	0.33	0.13	0.74			
6. Risk	0.80	0.80	0.58	-0.04	-0.03	-0.15	-0.11	-0.02	0.76		
7. Trust	0.79	0.79	0.56	0.15	0.26	0.16	0.21	0.30	-0.15	0.75	
8. M-payment	0.84	0.84	0.64	0.20	0.19	0.23	0.09	0.19	-0.02	0.25	0.80
Tolerance				0.95	0.91	0.86	0.93	0.85	0.97	0.88	
VIF				1.04	1.09	1.15	1.07	1.16	1.03	1.13	

#### 4.2. Measurement Model

Structural equation modeling (SEM), which can evaluate a structural model and a measurement concurrently, was employed in this investigation. As indicated by Hair, Anderson, Tatham, and William (1998), SEM aids in examining how the components in the study model are assessed by observable objects in addition to measurement indicators. It also indicates the direction, correlations, and explanatory strength of the variables. In this study, there are seven hypotheses, and it shows that they are linked to each other. Ease of use is connected not only with usefulness but also with the other hypotheses. As shown in Figure 2, every measurement question is at a standard level and shows that measurement models' scores are within their critical thresholds with regard to factor loadings and inter-item correlations. This information is shown by the measurement model, which affects each hypothesis by going above its recommended level.

Several popular model fit indices, such as p-value, the ratio of chi-square to degrees of freedom (CMIN/DF), the goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), the comparative fit index (CFI), the incremental fit index (IFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA) are examples of good model fit indices. We can see that the p-value is 0.01 where the recommended value is less than 0.05, the CMIN/DF is 1.22 or less than 3, the GFI is 0.93 where the recommended value is greater than 0.90, and the AGFI is 0.91 or greater than 0.85. Accordingly, the CFI, IFI, and TLI are 0.98, 0.98, and 0.97, respectively, where the recommended value is greater than 0.90, and the RMSEA is 0.02, where the recommended value is less than 0.08. The measurement values' statistics are displayed in Table 4.

#### 4.3. Exploratory Factor Analysis

The exploratory factor analysis (EFA) was carried out to check whether the concerned items are loaded with their appropriate factor (see Table 3). The findings demonstrate that each question's item was loaded with its associated factor and had acceptable correlations with the other variables.

#### 4.4. Structural Model

The purpose of the structural equation model was to assess potential correlations between various components. The possible correlations between the research components and desire to make a mobile payment are shown in Figure 3. According to the analysis, social influence, perceived trust, perceived usefulness, and perceived ease of use all accounted for 11% of the variance in respondents' intentions to make mobile payments. The suggested model's contribution to the dependent variable's desire to make a mobile payment is shown by the  $R^2$  value.

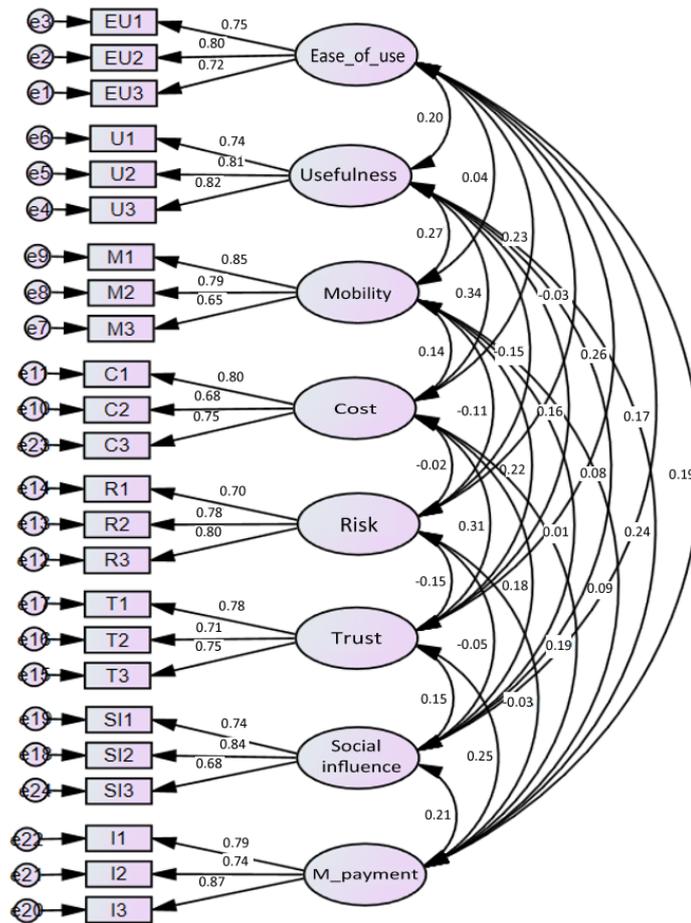


Figure 2. Measurement model.

Table 3. Exploratory factor analysis.

Item/construct	1	2	3	4	5	6	7	8
I1	0.850	0.126	-0.057	0.047	0.093	0.036	0.055	0.046
I2	0.832	-0.035	0.019	0.069	0.123	0.080	0.100	0.046
I3	0.881	0.132	0.014	-0.032	0.052	0.097	0.034	0.072
U1	0.118	0.838	0.010	0.172	-0.093	0.015	0.066	0.018
U2	0.073	0.822	-0.063	0.078	0.156	0.013	0.037	0.229
U3	0.037	0.867	-0.091	0.036	0.037	0.040	0.081	0.107
R1	-0.044	-0.006	0.818	-0.021	-0.034	-0.063	-0.003	0.073
R2	-0.011	-0.031	0.863	-0.042	-0.039	0.044	0.002	-0.071
R3	0.035	-0.092	0.851	-0.044	-0.061	-0.020	-0.014	0.009
M1	0.005	0.111	-0.025	0.855	0.121	-0.017	0.015	0.095
M2	0.108	0.073	-0.027	0.844	0.106	0.020	-0.017	0.052
M3	-0.026	0.073	-0.055	0.815	-0.041	0.011	0.006	-0.042
T1	0.051	0.101	-0.076	0.057	0.832	0.015	0.132	0.080
T2	0.181	-0.027	0.023	0.048	0.800	0.057	0.055	0.088
T3	0.038	0.010	-0.089	0.072	0.827	0.053	0.054	0.107
SI1	0.036	-0.023	0.055	0.014	0.053	0.826	0.120	0.091
SI2	0.070	0.007	-0.068	-0.048	0.067	0.864	0.035	0.047
SI3	0.093	0.076	-0.029	0.046	0.002	0.812	0.011	0.032
EU1	0.064	0.001	0.005	-0.022	0.042	-0.004	0.850	0.100
EU2	0.079	0.124	-0.042	0.015	0.097	0.015	0.847	0.018
EU3	0.041	0.053	0.021	0.012	0.097	0.164	0.798	0.095
C1	0.045	0.061	-0.006	0.008	0.123	0.048	0.074	0.848
C2	0.027	0.113	0.053	0.076	0.050	0.100	0.071	0.783
C3	0.086	0.134	-0.032	0.011	0.098	0.025	0.068	0.817
Percentage of variance	17.93	10.21	8.80	8.11	7.92	7.60	7.13	5.46

Table 4. Model fit statistics.

Model fit indices	Recommended value	Measurement model	Structural model
P-value	<0.05	0.01	n/a
CMIN/DF	<3	1.22	1.61
GFI	≥0.90	0.93	0.90
AGFI	≥0.85	0.91	0.88
CFI	≥0.90	0.98	0.94
IFI	≥0.90	0.98	0.94
TLI	≥0.90	0.97	0.93
RMSEA	≤0.08	0.02	0.04

In the model fit indices, the structured model analyzed by CMIN/DF, GFI, AGFI, CFI, IFI, TLI, and RMSEA produced respective values of 1.61, 0.90, 0.88, 0.94, 0.94, 0.94, 0.93, and 0.04. Table 4 contains detailed information of the structural model values and all are within their recommended value range.

4.5. Hypothesis Results

Examining each construct's standardized path coefficient ( $\beta$  value), significance (p-value), and standard coefficient allows researchers to assess the degree of connection between the various constructs (t-values). Four out of seven hypotheses were validated by the routes, as shown in Figure 3. The structural model indicates that perceived ease of use ( $\beta = 0.18, t = 2.85, p < 0.001$ ), perceived usefulness ( $\beta = 0.16, t = 2.45, p < 0.001$ ), perceived trust ( $\beta = 0.18, t = 2.78, p < 0.001$ ) and social influence ( $\beta = 0.16, t = 2.44, p < 0.001$ ) significantly influence the intention to use m-payment, thereby supporting H1, H2, H6 and H7. However, mobility ( $\beta = 0.20, t = 0.31, p < 0.001$ ), cost ( $\beta = 0.57, t = 0.88, p < 0.001$ ), and perceived risk ( $\beta = 0.28, t = 0.44, p < 0.001$ ) were found to have an insignificant influence on the intention to use m-payment, thus rejecting H3, H4 and H5. Figure 3 shows that each of the hypotheses undertook their recommended outline of the intention to use m-payment, except mobility, cost, and perceived risk, because people haven't yet adjusted and accepted the mobile method of payment.

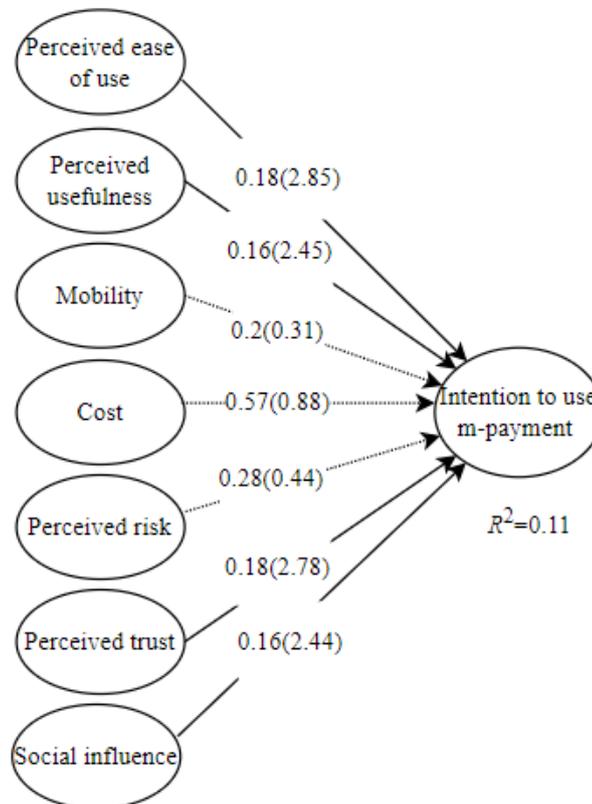


Figure 3. Structural model.

## 5. DISCUSSION AND IMPLICATION

In this empirical study, we examined consumers' intentions to make mobile payments. People who utilize or are prepared to use mobile payments are shown to appreciate this method and have similar interests. The findings are inaugurated here by introducing perceived ease of use, perceived usefulness, mobility, cost, perceived risk, perceived trust, and social influence. Each of these has a direct influence on m-payment intention and receives attention for understanding people's movement and attitudes toward m-payment. Researchers and practitioners can benefit from the study's findings in a number of ways. This paper provides a theoretical foundation for researchers to develop future studies of m-payment behavior. The results showed that perceived ease of use has the strongest influence on the intention to use mobile payments, and in Bangladesh, it has the most impact on determining whether or not people use mobile payments. Users may only embrace m-payment if they find it simple in comparison to other conventional means of financial transactions that they can readily utilize. Consumers focus first on how they can use the system or product, then they decide. By selecting the easiest way, an individual shows his or her behavior about the product. Ease of use was found to be the most supported hypothesis for m-payment intention, which has the highest t-value (2.85) and introduces consumers who can efficiently use mobile payment.

Consumers evaluate perceived usefulness and ease of use based on the locations where they want to use mobile payments, and if it is simple, they next assess the amount of use and value of the payment. When a user discovers that a new technology is beneficial for meeting a certain need, they are more likely to adopt it. Users would migrate to a different system for financial transactions if they believed that there would be more benefits at the same or a lower cost. Kim et al. (2010) showed that the intention to utilize m-payment was significantly influenced by both perceived ease of use and perceived usefulness. Perceived usefulness and ease of use effectively also address the usage of m-payment in this study. The usefulness of m-payment is induced by the speed and convenience of making transactions. The results showed that perceived usefulness has the greatest value for m-payment users. People feel that the more helpful m-payments are, the more widely they will be used. For this reason, perceived usefulness and mobility are interrelated, and consumer acceptance will be achieved by following these two hypotheses.

M-payment mobility has grown rapidly in recent years around the world, including in Bangladesh, where people have begun to accept m-payment options by using mobile phones. Mobility showed a t-value of 0.31, which does not efficiently affect the intention of consumers. The results showed that mobility is not supported by users' m-payment intention. Surprisingly, Daştan and Gürler (2016) showed that mobility influences consumers positively, with a t-value of 3.791. People don't generally remain in one location; they move between several places, such as homes, offices, and so on. For this reason, they search for m-payment methods through which they can easily shop, pay bills, and carry out other activities. Daştan and Gürler (2016) introduced the mobility of m-payment by refuting the barriers associated with unavailability and immobility. But in this study, mobility was suggested to be inconsistent with Daştan and Gürler (2016). M-payment in Bangladesh has not been prompt, regardless of whether individuals can utilize its dynamism. Cost is a concern for m-payment users because m-payment transactions include fees and subscriptions that users are unwilling to pay. The intention to use m-payment is unaffected by perceived risk in this study, which showed a t-value of 0.88. The results of the cost behavior of m-payment are consistent with Pham and Ho (2015), who obtained a t-value of -1.884. The result shows that cost is not a significant predictor of whether someone will use m-payments. The reason behind the cost behavior of m-payment users is that people are not willing to pay the cost of m-payment, or they feel that the cost amount should be modified and made more affordable. In this study, it was discovered that perceived danger, along with mobility and cost, had a negligent impact on users' inclination to use mobile payments. The security and transactional risks of mobile payments worry today's consumers. Before making a choice, users consider the risk and uncertainty involved in adopting m-payment services. Priority should be placed on risk mitigation, particularly in the beginning when the m-payment service is launched. Consumers will be more likely to trust mobile payments if there is a higher perceived level of trust, which lowers the associated risk. Perceived trust is the most valuable

aspect for a user and refers to the relationship between users of m-payment and the service provider. Users want to believe that they receive a quality service that is low risk and at a low cost. In this study, perceived trust has a t-value of 2.78, which highly correlates with Sharma et al. (2017) and is also consistent with Daştan and Gürler (2016), who found a t-value of 2.442. Perceived trust influences consumer satisfaction, which affects the intention to use m-payment (Sharma et al., 2017). M-payment service providers can influence consumer satisfaction through acquiring feedback and using this information to improve the security and trustworthiness of their services. Social influence shows a t-value of 2.44, which indicates people's intention to use m-payment based on the opinions of others. Similar findings about social influence were found by Sharma et al. (2017). Bangladesh is seeing growth in the social influence of m-payment use and it will be a tangible faith level in the future. In the end, users want to be satisfied with using m-payment based on social influence. The result demonstrates that perceived ease of use, perceived usefulness, perceived trust, and social influence have a substantial favorable effect on m-payment intention. However, mobility, cost, and perceived risk have little effect on the intention to make mobile payments. This infers that mobility, cost, and risk should be reduced to encourage consumers to use m-payment. By ensuring the benefits of mobility, cost, and risk, it will be possible to introduce m-payment to new consumers. The service also needs to be made more useful and easier to use.

The proposed model suggested that perceived ease of use, perceived usefulness, perceived trust, and social influence play an efficient supportive role for m-payment. Users' satisfaction depends on their experience, in which perceived ease of use, perceived usefulness, perceived trust, and social influence play a part in their willingness to use m-payment. The cost and risk of adopting a technology system such as m-payment are issues that users in Bangladesh are concerned about. For this reason, cost and perceived risk have not reached a sufficient level in consumers' mindsets. First, higher pricing results in lower m-payment intention. So, it should be ensured that the cost of using m-payment technology in Bangladesh is low. Regarding perceived risk, consumers are concerned about the risk of using m-payment and need assurance that their personal information is secure. Lower cost and higher security can increase the trust among consumers and their intention to use m-payment. People believe that since technology derives higher security, it will be beneficial for them. On the other hand, mobility also contributes to the success and use of m-payment from any location. In Bangladesh, the availability of m-payment is not sufficient, and for this reason, mobility is not supported and does not influence consumer intention. Therefore, mobility should be improved by the simplicity of using m-payment on mobile devices.

## 6. CONCLUSION

M-payment has grown in importance as a banking service, and if service providers can make it more user-friendly, they will reap greater rewards. This study's goal was to examine the problems associated with customers' intention to use mobile payments. According to the findings, Bangladeshi citizens largely accept m-payment, although it has yet to become widely used in daily life. Perceived ease of use, perceived usefulness, mobility, cost, perceived risk, perceived trust, and social influence have all been discovered to affect a person's inclination to utilize mobile payments (see Figure 3). On the other hand, mobility, cost, and perceived risk did not receive a positive response from consumers. This suggests that Bangladesh's mobile payment security does not perform well in the eyes of consumers, which is consistent with reality. To make mobile payment more extensively utilized in daily life, mobility needs to increase, the cost of mobile payment needs to be lower, and the security needs to be improved to reduce risk.

### 6.1. Limitations and Future Guidelines

Improve the mobility of m-payment: The mobility of m-payment influences people to make more use of it in daily life. Perceived usefulness and perceived ease of use are interrelated with mobility and increase the use of m-payment, but people aren't currently using m-payment services much because of low mobility.

Decrease the cost of m-payment: Cost is a word chosen using a consumer-choice methodology. Consumers in Bangladesh are not content with the cost of m-payment because they cannot afford it or because they are unsure of how it works and do not have faith in it given the increased cost. Consumer intention can be achieved if there is a decrease in the cost of m-payment or if there is enhanced promotion of the methods of m-payment and explanation of the features and benefits to drive consumer trust.

Improve security to decrease the risks of m-payment: Consumer perceptions of security and trust were shown to be closely linked in this study. When the perceived security of m-payment is strengthened, it might increase the consumers' perceived trust in it. Perceived security has a significant impact on consumers' intentions, according to previous studies (Wong & Mo, 2019). A high level of security will reduce the risk to consumers and increase the number of people who use mobile payment. The majority of individuals believe that password protection does not adequately ensure the security of e-transactions since it is just a series of numbers that can be easily guessed. Several experts have suggested that fingerprints, facial features, and iris recognition should be used instead of passwords to protect m-payments (Wong & Mo, 2019).

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**Data Availability Statement:** Upon a reasonable request, the supporting data of this study can be provided by the corresponding author.

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