The Digital Payment–Expenditure Nexus: Examining Technology Readiness as a Boundary Condition in Bangladesh's E-Commerce Sector

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ABSTRACT: This study examines the impact of mobile payment adoption on online shopping spending in Bangladesh, as well as the moderating effect of technology readiness. The researchers employ a quantitative research design and Structural Equation Modeling (SEM) to investigate how user-friendliness, data security, and technology preparedness impact consumer behavior in the e-commerce industry. These findings reveal that mobile payment, ease of use, and data security are the most crucial variables in defining the increasing proportion of online shopping expenditure, with user-friendliness and data security taking the first positions. In addition, future technology preparedness has also been identified as a significant moderator that strengthens the correlation between the adoption of mobile payments and consumer spending. The results could provide valuable data to businesses and policymakers, and even the digital payment providers, by declaring the need to enhance the usefulness and security of mobile payment systems and promote technology readiness to drive consumer acceptance and spending rates. The results have theoretical and practical implications for the development of a digital finance ecosystem in developing markets.

KEYWORDS: Mobile Payment Adoption, Online Shopping Expenditure, User-Friendliness, Data Security, Technology Readiness

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Introduction

The world retailing environment is redefined, and most significantly, mobile payment systems are leading the change in consumer buying behaviors (AMIN, 2025; Patrikha et al., 2023). The digital revolution is also effective in Bangladesh, where mobile payments are gaining momentum in the e-commerce sector (Doan et al., 2025. Mobile payment services (bKash, Rocket, and Nagad) are rapidly enhancing the efficiency of payments and consumer access to online products (Abir et al., 2020; Hussain et al., 2019; Karim & Qi, 2018). The increase in disposable income, particularly in the developing economies, has been closely associated with the growth of mobile payment platforms

that allow the consumer the advantage of making payments in a cashless format and a better shopping experience (Karsen et al., 2019; Zhang & Gong, 2024). As the infiltration of mobile payment systems into the economic environment of Bangladesh is constantly growing, the latter has significant implications on consumer spending trends, and the given direction of study is crucially necessary to investigate the impacts of mobile payment systems on online shopping behavior in a developing economy like Bangladesh (Ahamed et al., 2015; Akhter & Khalily, 2020).

A digital payment platform facilitated by smartphones, mobile payment provides consumers with opportunities to conduct transactions both in the digital and physical domains smoothly when purchasing goods and services (Gong et al., 2024; Xu et al., 2024). The interaction of mobile payment systems and e-commerce websites is a game-changer, as it can assist companies that want to reach a greater number of customers and enable individuals to pass the stage of buying products and services with less difficulty (Abtahi et al., 2023; Al-Qudah et al., 2024). However, even though research on mobile payment adoption is made on a global scale as far as the developed economies are concerned, the specific impact of consumer spending in developing markets, such as that of Bangladesh, is not adequately investigated (Aljohani, 2024; Gazi et al., 2024; Han, 2023). The needs of the socio-economic environment of Bangladesh, with such predetermined characteristics as digital literacy, lack of infrastructures, and varying levels of technological preparedness, have their demands that can impact the capture and use of mobile payments and consumer behavior in some way other than in other regions (Al-Qudah et al., 2024; Alam et al., 2020; Alharbi & Sohaib, 2021; Gao & Yee, 2022). These peculiarities are also important to learn, and they have significant implications on consumer spending behaviors and microeconomic performance within Bangladesh (Zhang & Gong, 2024).

This study addresses this gap by evaluating the impact of adapting mobile payment on household online shopping spending in Bangladesh, with a specific interest in gender variation and the intervening role of technology readiness. Despite the increasing mobile payment systems, consumer spending behavior in Bangladesh does not have an in-depth understanding of how these distinctions affect online shopping expenditure (Liébana-Cabanillas et al., 2014; Lwoga & Lwoga, 2017), but sufficient empirical studies about how these differences translate into online shopping spending in Bangladesh are still lacking (Masele & Taluka, 2016). In addition, technology readiness, the desire of individuals to adopt new technologies, is identified as one of the key factors affecting the uptake of mobile payment systems (Akhter & Khalily, 2020; Alam et al., 2020). The study will explore how technology readiness influences the relationship between mobile payment adoption and online shopping expenditure. This study aims to fill the existing gaps in the literature on the interaction between gender and technology readiness, as well as mobile payment adoption, in the context of consumer behavior in Bangladesh's fast-evolving e-commerce market (Doan et al., 2025; Gong et al., 2024). These are the research questions of the study:

RQ1: How does mobile payment adoption influence online shopping expenditure in Bangladesh?

RQ2: To what extent do user-friendliness and data security, as sub-variables of mobile payment adoption, affect online shopping expenditure?

RQ3: How does technology readiness moderate the relationship between mobile payment adoption and online shopping expenditure?

RQ4: What are the differences in online shopping expenditure across categories when moderated by mobile payment adoption?

Theoretical Framework & Hypothesis Development

Theoretical Framework

The Technology Acceptance Model (TAM) is highly applicable in relation to the study because it assists in explaining what factors affect the decision of consumers to support the adoption of new technology in their everyday online shopping, i.e., mobile payment systems. TAM claims that the two main productivity benefits of the adoption of technology are ease of use and usefulness (Davis, 1989). Perceived ease of use in the Bangladesh context of mobile payment can be described as the popularity of mobile payment services such as bKash, Rocket, and Nagad among users. Since mobile payment systems make the process easy to use, they can increase the ease of use, which is likely to promote adoption. This directly impacts consumer behavior and interaction with online shopping systems, in turn impacting online shopping spending. Moreover, the perceived usefulness shows that the mobile payment is viewed to raise the convenience and speed of online payments, which are identified as the major factors supporting the expenditure attitudes (Hassan et al., 2022). The convenience of engaging in the transaction by the consumers and the perceived benefits of the mobile payments can make a significant contribution to the rate and the number of online shopping. This is consistent with the above-mentioned studies that have indicated that the adoption of digital payments is determined by ease of use and usefulness, hence influencing the overall expenditure (Gazi et al., 2024; Xu et al., 2024).

The Unified Theory of Acceptance and Use of Technology (UTAUT) is an internationally applicable global theory of understanding technology adoption, in addition to TAM, and it can be used specifically to understand the adoption of technology in the developing country setting of Bangladesh. UTAUT is premised on the assumption that performance expectancy, effort expectancy, social influence, and facilitating conditions are the drivers of technology adoption (Venkatesh et al., 2003). Performance expectancy, in this case, can be linked with the anticipation of the consumers of the effectiveness and utility of mobile payments and their benefit to improve their online shopping experience, which potentially leads to more spending. The effort expectancy, or how easy it is to use mobile payments, directly influences consumer adoption, but, again, has to be taken into consideration in a country like Bangladesh, where digital literacy is not equal. Social influence, as defined by UTAUT, implies that when consumers see their friends or relatives making mobile payments to carry out online shopping, they will be able to get more convinced to make the same, which enhances the general adoption rates (Gong et al., 2024). Besides, conditions, including infrastructure and the availability of mobile devices, are also critical in the adoption of mobile payments in Bangladesh. The theory emphasizes the role of external drivers and personal perceptions in the uptake of mobile payments, and UTAUT will be a valuable theoretical basis to consider the role of such systems in influencing the spending of online shopping in Bangladesh (Akhter & Khalily, 2020; Doan et al., 2025).

Impact of Mobile Payment Adoption on Online Shopping Expenditure

Mobile payment systems have greatly affected consumer behavior by increasing the amount of money spent on online shopping. Because mobile payments make the transacting process easier, the barriers hindering likely purchases will be eliminated, and consumer spending will increase (Bai et al., 2025; Farooq, 2024; Yang et al., 2023). Alongside this acceleration in the speed and convenience with which payments are made, consumer confidence in the online payment process is boosted, making spending higher (Liu et al., 2023; Pala, 2024; Vatsa et al., 2022). Additionally, the establishment of seamless movement of mobile payments between electronic commerce platforms increases consumer interest, which results in a higher number and larger transactions (Alzoubi & Ghazal, 2022; He et al., 2024). Security and convenience of mobile payments establish a favorable environment to spend more, particularly in the up-and-coming economies like Bangladesh (Alkadash et al., 2025; Ba et al., 2022; Garrett et al., 2014;

Oyelami et al., 2020). The positive relationship between the usage of technology and the expenditure on online shopping is even more strengthened as mobile payment systems develop (Greenacre & Akbar, 2019; Liu et al., 2019). Moreover, the perception of security and convenience of mobile payments made by consumers is one more factor contributing to their readiness to spend more, which proves a manifestation of a positive relationship with increased spending (Falk et al., 2016; Wang, 2021; Yang et al., 2023). This supports the hypothesis that mobile payment adoption significantly influences consumer spending in Bangladesh's e-commerce sector, aligning with trends observed globally (Liu et al., 2023; Masele & Taluka, 2016; Mofokeng, 2023).

H1: Mobile payment adoption has a positive influence on online shopping expenditure in Bangladesh's e-commerce sector.

Influence of User-Friendliness of Mobile Payment Systems on Online Shopping Expenditure

Ease of use of the mobile payment system has a major influence on consumer spending in the e-commerce industry because platforms that are simple to use will lead to increased interactions and purchases of products. Easy mobile payment systems with simplified transactions and user-friendly interfaces have been demonstrated to encourage greater and more frequent purchases (Adhikari et al., 2025; AMIN, 2025; Thanajaro & Hattakitpanitchakul, 2025). Research proves that mobile payments become more convenient and user-friendly, a higher probability of consumers making purchases on impulse, and increasing online shopping spending (Joshi et al., 2024; Soomro & Habeeb, 2025; Wang, 2020). Moreover, convenient tools, including real-time monitoring of costs and budgets, promote increased usage of mobile payments among customers who can increase their expenditures (Jamalzade & Oğuz, 2025; Mulkiansyah et al., 2024). Another significant factor in boosting consumer spending is the ease of making purchases, since the lack of discomfort makes the process of shopping simpler (Greenacre & Akbar, 2019; He et al., 2024; Vatsa et al., 2022). Additionally, consumers feel secure and in charge through mobile payments that are easy to use, which makes them trust them and consequently increases spending (Kaewkitipong et al., 2022; Kartawinata & Akbar, 2025; Soomro & Habeeb, 2025). These results confirm the hypothesis regarding the existence of user-friendly mobile payment systems (Kamboj et al., 2025; Liu et al., 2023).

H2: The user-friendliness of mobile payment systems significantly influences online shopping expenditure.

Role of Perceptions of Data Security in Mobile Payment Systems on Online Shopping Expenditure

Data security perception is essential in determining consumer behavior, especially in online shopping

Increasing spending is caused by consumers feeling confident that the mobile payment systems are secure, and therefore, they tend to do online shopping. Consumers rely on the ability to transact safely and efficiently, and will continue to spend more money on online platforms because the increased confidence to engage in transactions using mobile payment systems leads to higher purchases (Almaiah et al., 2022; Kim et al., 2010; Zhang et al., 2019). Moreover, mobile payments security has shown the delivery of assurance in online payments, reducing the perceived risk of online purchases and increasing the willingness of consumers to spend more money (Alqahtani & Albahar, 2022; Poudel & Sapkota, 2022). The trust in the security level of the mobile payments does not just increase the rate of the transactions but also provides the consumer with an incentive to make impulse purchases. Consumers tend to be more ready to spend money when they think that a certain payment system is safe, and this directly affects the spending habits of people (Chandra et al., 2010; Garrouch, 2022; Hossain, 2019). In addition, secure mobile payments can make consumers feel that they have control over online payments, and this aspect further encourages them to make more purchases online (Akisanmi et al., 2025; Nguyen & Tran, 2022; Rasistia & Sayyidah, 2021).

Secure payment platforms also lead to increased consumer satisfaction, which in turn increases consumer loyalty (Gao & Waechter, 2017; Salah & Ayyash, 2025).

H3: Perceptions of data security in mobile payment systems positively impact online shopping expenditure.

Moderating Effect of Technology Readiness

Technology readiness moderates the relationship between online shopping spending and mobile payment adoption. The more technologically ready consumers are, the more likely they are to perceive mobile payments as convenient and resort to online shopping more frequently, and consequently spend more (Ekşioğlu & Ural, 2022; Roy & Moorthi, 2017; Wiese & Humbani, 2020). It has been demonstrated that the perceived ease of use of mobile payment systems, in its turn, is positively correlated with the technology readiness, which directly causes adoption and more spending behavior (Ashrafi & Easmin, 2023; Rahardja et al., 2023; Shin & Lee, 2014). As the level of technology readiness increases, the integration of mobile payments among consumers would become more feasible, which further stimulates the increased volume of online commerce spending, as consumers would complete more transactions (Abegao Neto & Figueiredo, 2023; Balakrishnan & Shuib, 2021; Mummalaneni et al., 2016).

Mobile payments acceptance among the population that is technologically conscious and includes those who may be termed as digitally savvy was found to be increasing with perceived ease of use and utility, leading to consumer involvement in e-commerce (Ashraf et al., 2017; Ghosh, 2024; Jaradat & Al-Mashaqba, 2014). Moreover, the technology preparedness preconditions the process of adoption, and users tend to accept and utilize mobile payment systems to perform their daily purchases, which contributes to a rise in spending (Ali et al., 2020; Cham et al., 2022; Prodanova et al., 2021). As the ability to access mobile payments is becoming a more common aspect of the day-to-day routine of consumers, it positively influences their shopping behavior since better-equipped consumers, in terms of technology, are more likely to make purchases
through the mobile platform (Iman et al., 2023; Kim et al., 2020).

H4: Technology readiness positively moderates the relationship between mobile payment adoption and online shopping expenditure.

The conceptual framework of the current study, in Figure 1 above, forms an organized framework where Mobile Payment Adoption correlates with Online Shopping Expenditure, with the moderator role of Technology Readiness. The main objective of this framework is to investigate the effects of mobile payment systems adoption by consumers on online shopping in the e-commerce business in Bangladesh. The framework includes the sub-variables of user-friendliness and data security, which influence the mobile payment adoption, underlining the most important factors that contribute to the acceptance and usage of mobile payment systems. Likewise, the mean monthly spending and expenditure by categories can be used as indicators of online shopping spending, as they display the financial aspect of consumer behavior in the digital market.

Mobile Payment Adoption is the key variable, and it is the independent one because it is directly affected by two crucial aspects: user-friendliness and data security. These are the most critical factors in the determination of the user-friendliness and reliability of mobile payment systems, which subsequently affect the chances of consumers using these technologies. With the growth in mobile payments, which are currently gaining momentum, their use in enabling smooth online payments is likely to promote more consumerism in the e-business arena. Online Shopping Expenditure is a dependent variable that captures consumer behavior with respect to both the amount of money that

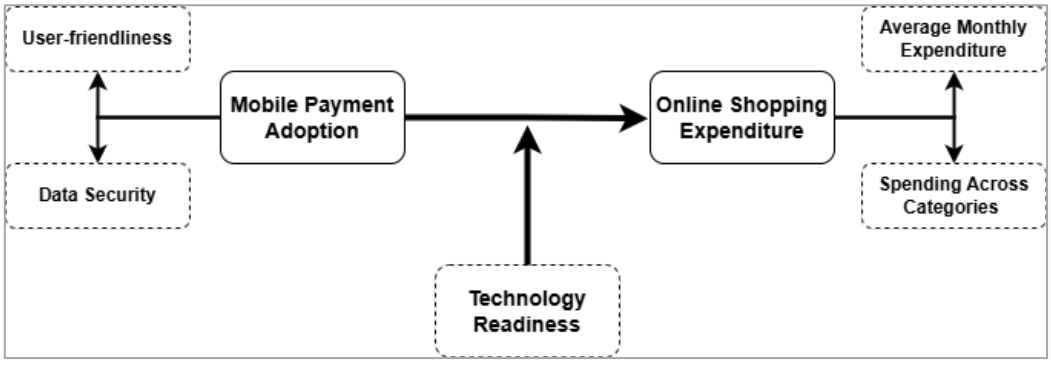
is spent as well as the variety of ways it is spent on the products. All these dimensions can be used to get a perfect picture of consumer spending trends that are influenced by mobile payment technologies.

Moderating variable, Technology Readiness, is used to define the extent to which individuals are ready to interact and use new technological advancements. This variable is significant in moderating between mobile payment adoption and online shopping expenditure. High technology-ready consumers have a high tendency to adopt the mobile payment system and use it well, thereby leading to a rise in online shopping. Individuals who are less technologically prepared, on the other hand, might have difficulties with the adoption process, thus preventing their involvement in the e-commerce market. Through the integration of this modifying factor, the framework offers an insightful picture of the interaction between consumer preparedness, the adoption of mobile payments, and the online shopping pattern.

Conceptual Framework

Figure 1

Research Framework



Methodology

This study adopts a quantitative research design aimed at exploring the relationship between mobile payment adoption and online shopping spending, and evaluating the moderating effect of technology readiness (Roy & Moorthi, 2017). The cross-sectional survey design is used to collect data at any single point in time, and therefore, the research offers a chance to examine the relationship among the key constructs (Rindfleisch et al., 2008). This is a suitable design to explain the behaviors of consumers in the e-commerce market of Bangladesh, which has witnessed a high rate of mobile payment adoption. The purposive non-probability approach of sampling is applied, with the focus on the respondents who are frequent users of the e-commerce mobile payment systems (Lakeman et al., 2021). A survey is a data-gathering technique that can be conducted at a large scale and generalized to the overall population of digital payment users in Bangladesh (Karmaker et al., 2025; Rahman et al., 2018).

Measures

The constructs employed in this study are measured in reliable scales through established scales based on the precedent research to ensure reliability and validity. The adoption of mobile payments (MPA) is measured on the basis of two sub-variables, including user-friendliness and data security. The ease of use, the intuitiveness of the interface, and the expediency of transactions are all rated by 5 items that also measure the user-friendliness (Wiese & Humbani, 2020); data security is assessed by the perceived safety and trust in mobile payment platforms by the consumers (Kim et al., 2020; Poudel & Sapkota, 2022).

Online shopping expenditure (OSE) is the dependent variable that is assessed using two sub-variables: average monthly expenditure and category spending (He et al., 2024; Vatsa et al., 2022). The moderating variable is the technology readiness (TR) construct that is assessed using five items modified on the Technology Readiness Index (TRI), indicating the attitude of consumers to adopt and use mobile payment systems (AMIN, 2025; Ashrafi & Easmin, 2023).

Data Collection Procedure

They were collected in the form of a self-administered online questionnaire that was sent to the participants through Google Forms, targeting only the population who actively think about using mobile payment systems when buying online goods. The survey tool was tested in a pilot study, which was conducted on 30 respondents. The survey was administered within four weeks, which ensured that the response rate was sufficient and possible prejudices were limited by guaranteeing those who participated privacy and anonymity (Podsakoff et al., 2003). The sample size is eventually 285 respondents, which is within the sample size recommendations in Structural Equation Modeling (SEM).

Research Instrument

The research instrument comprises a structured questionnaire (divided into sections) assessing the demographics of the respondents, mobile payment adoption, online shopping spending, and technology readiness. To evaluate the responses, the instrument demonstrates 5-point Likert scales, starting with 1 = Strongly Disagree, and 5 = Strongly Agree. The user-friendliness and data security scales were based on the prior research on mobile payment adoption (Joshi et al., 2024; Soomro & Habeeb, 2025). The online shopping spending is evaluated in frequency and monetary volumes of purchasing items, whereas the readiness of the technologies is determined in terms of comfort and readiness of the consumer to utilize the mobile technologies in the payment procedure (Shin & Lee, 2014).

Data Analysis Techniques

The data were analyzed through SPSS and SmartPLS4. The initial statistical tool that was applied was descriptive statistics to summarize the demographics. Pearson's correlation test was employed to evaluate the relationships among the constructs. Confirmatory Factor Analysis (CFA) was performed to be able to validate the scales of measurement, the reliability, and the validity of the constructs. Lastly, Structural Equation Modeling (SEM) was used to test the hypothesis of the relationships, both direct and moderating. The moderation analysis was conducted in particular to determine whether ready-to-use technology influences the relation between mobile payment adoption and the online shopping expenditure (Hair et al., 2012).

Table 1 shows the demographic characteristics of the respondents and indicates vital information on the use of mobile payments within the e-commerce industry in Bangladesh. Most of the users (22.8%) fall between 25-34 years of age, implying that young adults are the common users of mobile payment systems. The percentage of males in the sample is 69.1%, which indicates that more males are likely to be interested in digital payments. Most of the respondents are master's holders (60.7%) and employed (64.9%), which indicates a relationship between higher education, secure jobs, and the use of mobile payments. The majority of the respondents make 10,000-30,000 BDT (63.5%) and make online purchases 2-3 times every month (57.5%).

Table 1

Demographic Characteristics of Respondents

Variable	Category	n (%)
Age	25-34	65 (22.8%)
	35-44	58 (20.4%)
	18-24	57 (20.0%)
	45+	55 (19.3%)
	Below 18	50 (17.5%)
Gender	Male	197 (69.1%)
	Female	88 (30.9%)
Education Level	Master's	173 (60.7%)
	Bachelor's	112 (39.3%)
Employment Status	Employed	185 (64.9%)
	Student	45 (15.8%)
	Business Owner	30 (10.5%)
	Unemployed	25 (8.8%)
Income Level (BDT)	10,000–30,000	181 (63.5%)
	50,000+	60 (21.1%)
	30,000–50,000	44 (15.4%)
Frequency of Online Shopping	2-3 times a month	164 (57.5%)
	Weekly	70 (24.6%)
	Once a month	40 (14.0%)
	Daily	11 (3.9%)

Results

Factor loading, reliability (Alpha of Cronbach), and average variance extracted (AVE) were some major indicators of factor validity and reliability that were used to evaluate the measurement model. Valid constructs must have a factor loading of more than 0.7, and the indicators in this study fit the criterion (Hair, 2014). The values of Cronbach's Alpha are greater than 0.7, which signifies the high internal consistency (Nunnally, 1978). In addition, the values of AVE are greater than 0.5, which supports the convergent validity of constructs (Fornell & Larcker, 1981). Table 2 confirms that the model used to measure it is reliable and valid.

Table 2

Results of Measurement Model

Construct	Indicator	Factor Loading	Cronbach's Alpha	AVE
User-Friendliness (UF)	UF1	0.723	0.930	16.937
	UF2	0.784		
	UF3	0.801		
	UF4	0.689		
	UF5	0.731		
Data Security (DS)	DS1	0.754	0.912	13.935
	DS2	0.702		
	DS3	0.791		
	DS4	0.760		
	DS5	0.718		

Construct	Indicator	Factor Loading	Cronbach's Alpha	AVE
Online Shopping Expenditure (Monthly Spending) (SE)	SE1	0.833	0.906	13.836
	SE2	0.764		
	SE3	0.801		
	SE4	0.773		
	SE5	0.720		
Online Shopping Expenditure (Spending Across Categories) (SC)	SC1	0.846	0.885	14.179
	SC2	0.792		
	SC3	0.815		
	SC4	0.801		
	SC5	0.738		
Technology Readiness (TR)	TR1	0.897	0.932	17.051
	TR2	0.812		
	TR3	0.845		
	TR4	0.779		
	TR5	0.721		

Fornell-Larker Criterion and Heterotrait-Monotrait Ratio (HTMT) were used to measure discriminant validity. The Fornell-Larcker Criterion upholds discriminant validity as the square root of the AVE of each construct exceeds the maximum correlation between that construct and the others (Fornell & Larcker, 1981). Besides, all the values of the HTMT were less than 0.90, which means that the level of discriminant validity was good (Henseler et al., 2015). Tables 3 & 4 findings indicate that the measurement model is suitable and the constructs are different.

Table 3

Fornell-Larcker Criterion

Construct	User-Friendliness	Data Security	Online Shopping Expenditure (Monthly Spending)	Online Shopping Expenditure (Spending Across Categories)	Technology Readiness
User-Friendliness					
Data Security	0.389				
Online Shopping Expenditure (Monthly Spending)	0.345	0.474			
Online Shopping Expenditure (Spending Across Categories)	0.360	0.494	0.828		
Technology Readiness	0.708	0.270	0.381	0.483	

Table 4

Heterotrait-Monotrait Ratio (HTMT)

Construct	User-Friendliness	Data Security	Online Shopping Expenditure (Monthly Spending)	Online Shopping Expenditure (Spending Across Categories)	Technology Readiness
User-Friendliness					
Data Security	0.694				
Online Shopping Expenditure (Monthly Spending)	0.717	0.812			
Online Shopping Expenditure (Spending Across Categories)	0.640	0.744	0.828		
Technology Readiness	0.744	0.548	0.648	0.672	

After validation of the measurement model, the structural model was evaluated to check the hypotheses of the research. In SmartPLS 4, a bootstrapping procedure was used that had 10,000 subsamples to assess the statistical significance of the path coefficients. All tests were tested at the level of $p < 0.05$. The first stage of analysis involved analyzing the direct impact of the three predictor variables on online shopping. H1, which proposed a significant relationship between mobile payment adoption and online shopping expenditure, was supported ($\beta = 0.208$, $t = 1.036$, $p = 0.004$). The data supported H2, which posited a positive relationship between user-friendliness and online shopping expenditure ($\beta = 0.473$, $t = 1.997$, $p = 0.043$). H3, predicting a significant relationship between data security and online shopping expenditure, was strongly supported ($\beta = 0.432$, $t = 2.451$, $p = 0.000$). Finally, H4, indicating technology readiness moderates the relationship between the online shopping expenditure and mobile payment adoption, was also proved ($\beta = 0.240$, $t = 1.435$, $p = 0.000$). P-values were less than 0.05 and supported all hypotheses to ensure the validity of the proposed model. Table 5 presents the results.

Table 5

Hypothesis Testing

Hypothesis	Path	Path Coefficient (β)	t-Statistic	p-Value
H1: Mobile Payment Adoption → Online Shopping Expenditure	Mobile Payment Adoption → Online Shopping Expenditure	0.208	1.036	0.004
H2: User-Friendliness → Online Shopping Expenditure	User-Friendliness → Online Shopping Expenditure	0.473	1.997	0.043
H3: Data Security → Online Shopping Expenditure	Data Security → Online Shopping Expenditure	0.432	2.451	0.000
H4: Moderation Effect (Technology Readiness)	Mobile Payment Adoption × Technology Readiness → Online Shopping Expenditure	0.240	1.435	0.000

Discussions

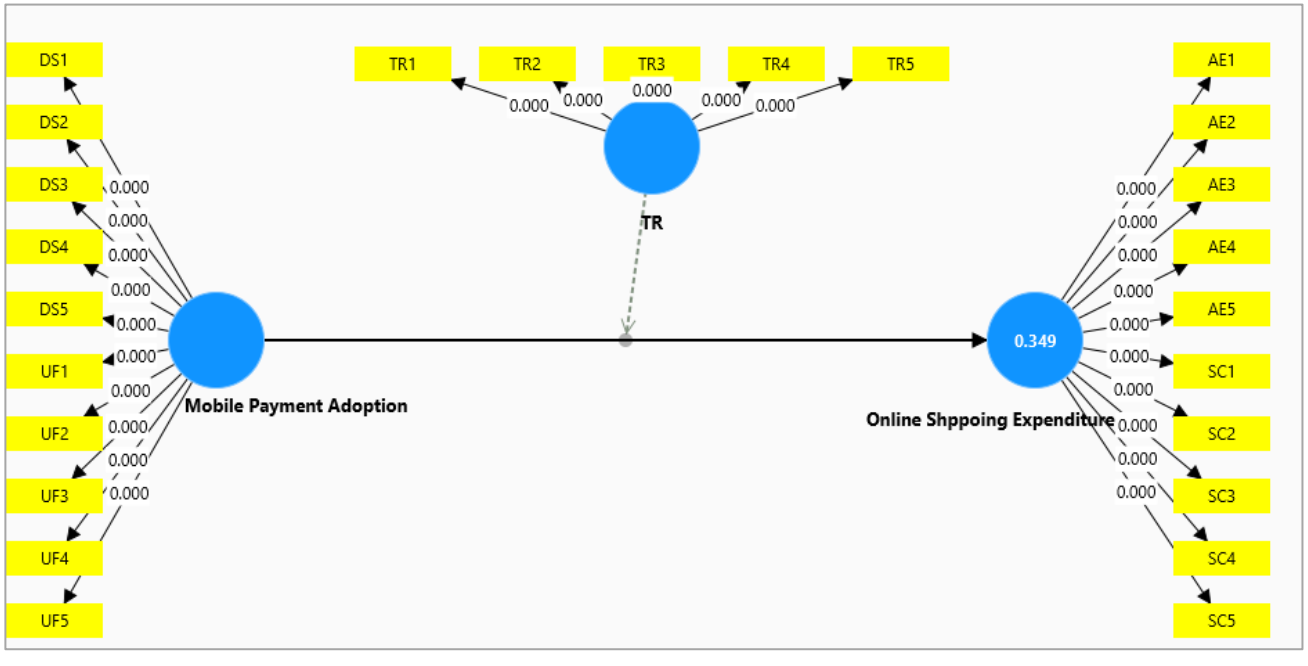
The study outcomes are informative clues about the simulative elements of online shopping consumption in Bangladeshi e-commerce business, particularly in terms of mobile payment applications. The results highlight that

mobile payment systems play a crucial role in enhancing consumer spending habits, and this is primarily driven by data protection and convenience. This is in accordance with the Technology Acceptance Model (TAM) states that perceived ease of use, as well as perceived security, play a significant role in determining whether a user adopts a new technology, such as in the case of mobile payments (Davis, 1989). Consumer expenditure was noted to be significantly influenced by the ease of use of mobile payment systems, which is consistent with the findings of previous studies that emphasized that ease of usability is a predictor of high adoption (Almaiah et al., 2022; Ba et al., 2022; Jamalzade & Oğuz, 2025). In addition, the perception of online data security was also identified as one of the most significant aspects that influences online shopping expenditure, which corroborates the findings of previous research that identifies security as a significant concern regarding online transactions (Kaewkitipong et al., 2022; Oyelami et al., 2020; Patrikha et al., 2023). This reinforces the truth that consumer confidence in online payment systems is a significant factor that makes consumers feel safe in their online financial transactions (Venkatesh et al., 2003).

Moreover, this research proves the moderating impact of the technology preparedness on the relationship between mobile payment adoption and online shopping expenditure. The use of the Technology Readiness Index (TRI) as a moderating variable provides additional information to reveal the correlation between the intention to use new technologies and shopping behavior (Nguyen & Tran, 2022; Salah & Ayyash, 2025; Xu et al., 2024). More technologically prepared consumers are in a better position to adopt mobile payments and, in the process, increase their online spending, and this is as anticipated in the previous literature, in which technology preparedness is linked with greater uptake of digital payments (Liu et al., 2019; Patrikha et al., 2023). These findings suggest that the better the population is technologically prepared, the more the uptake of mobile payment systems and therefore the more the expenditure on online shopping. By doing so, the research has significant implications for businesses and policymakers to ensure they focus on the development of mobile payment platforms to become more convenient, offer secure transactions, and facilitate the safety of technology to create a more successful e-commerce environment.

Figure 2

SEM MODEL



Conclusion

The adoption of mobile payments, convenience, data security, and technological readiness is highly influential in online shopping expenditure at the e-commerce business in Bangladesh. The findings highlight the importance of ease of use and security in consumer expenditure and the mediating influence of technology readiness on the use of mobile payment. These results underscore the need for companies and policymakers to strive to enhance the digital payment systems, enhance security systems, and enhance technology preparation as means of promoting consumer activity and advancing e-commerce development. A safe, convenient, and technologically accessible environment will be the key factor in the future of online trade in Bangladesh.

Theoretical Implications

The findings of the current study contribute to the existing body of knowledge in mobile payment adoption and consumer behavior since they provide valuable sources of information on the factors that influence online shopping expenditures in such an emerging economy as Bangladesh. The research justifies the suitability of the presently embraced theories, such as the Technology Acceptance Model (TAM) and Technology Readiness Index (TRI), and their further replication into the sphere of mobile payment in the e-commerce sector. It especially emphasizes the perceived ease of use, security, and willingness to adopt the technology as the antecedent factors in digital payment adoption, as it is based on empirically justified evidence to justify the constructs in a non-Western, developing market. In addition, the moderating role of technology readiness is presented in the proposed research, which will further increase the existing body of knowledge on the influence of the readiness to use new technologies on the adoption of the digital payment system by consumers. Such theoretical progressions may assist in determining what consumers are thinking and contribute to the larger discussion on the adoption of digital finance.

Practical Implications

The practical implications of this research to corporations and policy makers are in the knowledge of how they can encourage the adoption of mobile payment systems and online shopping spending. In order to get more consumers to embrace the services provided by the e-commerce sites as well as mobile payment service providers, one should focus on ensuring that the systems are user-friendly in order to ensure that they are easy to use, their interface is simple, and carrying out transactions is easy. Security matters should also be a front burner, as buyers will be ready to transact online shopping when they have a perception that their financial transactions are safe. The expansion of the digital-based business can also be promoted by promoting the digital readiness and literacy of the policymakers; the targeted customers can be the younger and technology-based consumers. There are also prospects by applying certain marketing promotions to create credibility and educate consumers about the value of using mobile payments and their security. The practice will add to the distance between the uptake of technologies and consumer behavior as a better digital economy is built in Bangladesh.

Ethical Considerations

The study involved human participants who completed an anonymous online survey. Ethical clearance was not required under the guidelines of the authors' institution because the research posed minimal risk, involved no sensitive personal data, relied entirely on voluntary participation, and respondents were free to withdraw at any time. Respondents were informed about the purpose of the study, assured of confidentiality, and provided with informed and written (digital) consent before participation.

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