

Exploring the drivers of digital payment system adoption in an emerging economy: The mediating role of user satisfaction among youth in Dhaka, Bangladesh

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Abstract

The purpose of this study is to investigate the mediating effect of user satisfaction in the adoption of digital payment systems in Bangladesh. Data was collected from 303 active users of digital payments using a structured questionnaire survey and evaluated using Partial Least Squares Structural Equation Modeling (PLS-SEM) utilizing SmartPLS 4 and SPSS. The structural model was used to examine the suggested hypotheses and the measurement model was evaluated to determine the validity and reliability of constructs. The findings show that the relationships between performance expectancy, trust, digital literacy, and social influence with digital payment adoption are significantly mediated by user satisfaction. However, the impacts of perceived risk and effort anticipation on adoption behavior are not significantly mediated by user satisfaction. The results highlight the importance of experiential factors in influencing emerging economies' decisions to adopt digital payments. In the context of Bangladesh, the study adds to the field of literature by combining social, psychological, and technological factors into a single satisfaction-based framework. Digital payment providers and legislators can translate these results into greater initiative for digital literacy and social-trust building campaigns, besides improving service quality.

Keywords: Performance Expectancy, Effort Expectancy, Trust, Perceived Risk, Digital Literacy, Social Influence, User Satisfaction, Adoption Of Digital Payment Systems

JEL Classification: O33, G20, D12

1. Introduction

The financial landscape is undertaking a profound revolution driven by technological innovation, with digital-payment systems like mobile wallets, internet banking, QR payments at the forefront of this change, particularly across developing economies (Rahman et al., 2024). These systems are essential for accelerating financial inclusion and promoting economic growth in both developed and developing economies because they improve transactional efficiency, lower operating costs, and foster transparency. Digital financial services greatly lower barriers to formal finance, allowing people to send and accept remittances, store money securely, then engage heavily in financial transactions, according to the Global Findex Database of World-Bank.

Ongoing policy support, the rise of mobile financial service (MFS) providers like bKash and Nagad, and growing consumer petition for suitable financial facilities have all driven the fast expansion of digital financial services in Bangladesh. This makes Bangladesh one of the best examples in South Asia for adopting digital payments. With over 100 million MFS users and robust annual increase in transaction volume, Bangladesh has made the shift from a cash-based economy to a more digital and linked financial system during the past ten years (Bangladesh Bank, 2022). This shift advances national objectives such as "Digital Bangladesh." It promotes fintech solutions, innovation, and digital literacy. This strategy seeks to increase economic resilience and competitiveness (Government of Bangladesh, 2021). Developments in technology adoption theories provide a solid basis for understanding why consumers either embrace or reject digital payment services. The four key factors that explain technology adoption are performance expectancy, effort expectancy, social influence, and simplifying situations (Venkatesh et al., 2003). Performance-expectancy denotes to consumers' beliefs that using digital payments will enhance their productivity, speed, accuracy, and overall financial management. These aspects often lead to increased adoption of digital payment services (Venkatesh et al., 2012). Users tend to have a positive view of platforms that are simple, user-friendly, and straightforward. They are further likely to continue using these platforms over time.

An important factor to consider is social influence, especially in collectivist cultures. In these cultures, people often seek support from family, recommendations from peers, and guidance from social norms to make their technology choices (Venkatesh et al., 2003; Chawla & Joshi, 2019). Social networks play a momentous role in promoting the use of digital payment innovations in Bangladesh. This is especially true for new digital payment users and rural communities that rely on trusted social networks (BTCA & Bangladesh Bank, 2022). The psychological obstacles to utilizing new technology can be reduced by social norm. Due to variations in education, smartphone ownership, and familiarity with digital tools, adoption differs among various demographic groups (Bangladesh Bank, 2022; BTCA & Bangladesh Bank, 2022), resulting in a digital divide.

By examining four categories of characteristics, namely, technology, societal effects, psychological factors, and capability, this study has created a model to comprehend how Bangladeshis adopt digital payment systems. This methodology helps Bangladesh achieve its objectives of building a resilient and inclusive digital economy. By emphasizing user pleasure as a crucial component, it seeks to offer solid proof for governments and financial services, so they may develop more effective strategies to enhance the security, usability, and sustainability of digital payment systems throughout Bangladesh. Although UTAUT provides a strong foundation for understanding technology adoption (Venkatesh et al., 2003), its application in digital payment adoption in developing economies remains limited. Previous studies have mainly focused on technological factors such as performance expectancy and effort expectancy, while contextual factors including trust, perceived risk, and digital literacy have received comparatively less attention (Oliveira et al., 2016; Slade et al., 2015). Trust and perceived risk are particularly important in digital payment environments, where security and privacy concerns influence users' adoption decisions (Kim et al., 2010).

Furthermore, previous studies have primarily examined the direct effects of adoption determinants on digital payment usage, while limited attention has been given to the underlying mechanism through which these factors influence adoption behavior. User satisfaction represents an important mechanism because users evaluate their digital payment experience before developing adoption intentions. Although satisfaction has been recognized as a significant factor in information systems success and post-adoption behavior (Bhattacharjee, 2001; DeLone & McLean, 2003), its mediating role in digital payment adoption remains insufficiently explored in Bangladesh. Therefore, this study develops an integrated framework incorporating performance expectancy, effort expectancy, trust, perceived risk, digital literacy, and social influence, with user satisfaction as a mediating variable. Digital payment systems have become increasingly important for promoting financial inclusion. However, concerns regarding security, trust, usability, digital capability, and service quality continue to limit wider adoption among users. Understanding how these factors influence user satisfaction and adoption decisions is therefore essential for developing more reliable and user-friendly digital payment platforms. This study contributes to the existing literature by examining the mediating role of user satisfaction and providing practical insights for banks, mobile financial service providers, fintech companies, and policymakers.

The primary research question of this study is: To what extent do the determinants of digital payment systems influence adoption behavior through the mediating role of user satisfaction in Bangladesh?

Specifically, this study addresses the following questions:

1. To what extent does user satisfaction mediate the relationship between performance expectancy and the adoption of digital payment systems?

2. To what extent does user satisfaction mediate the relationship between effort expectancy and the adoption of digital payment systems?
3. To what extent does user satisfaction mediate the relationship between trust and the adoption of digital payment systems?
4. To what extent does user satisfaction mediate the relationship between perceived risk and the adoption of digital payment systems?
5. To what extent does user satisfaction mediate the relationship between digital literacy and the adoption of digital payment systems?
6. To what extent does user satisfaction mediate the relationship between social influence and the adoption of digital payment systems?

The remainder of this paper is organized as follows: Section 2 reviews the relevant literature and theoretical foundations to develop the hypotheses and conceptual framework. Section 3 explains the research methodology. Section 4 discusses the empirical findings and results. Finally, Section 5 concludes the study with implications, limitations, and future research directions.

2. Literature Review

2.1 Adoption of Digital Payment Systems (DPS)

Digital payment systems are electronic platforms, such as mobile payments, digital wallets, internet banking, and QR-based payments, that allow users to make financial transactions. Users' opinions of these services' utility, convenience, security, trustworthiness, and digital capabilities all have an impact on their uptake. Prior studies have demonstrated that while perceived risk may deter users from adopting digital payment systems, perceived utility and ease can promote mobile payment uptake (Al-Qudah et al., 2024). The adoption of mobile banking has also been proven to be positively impacted by digital literacy, underscoring the significance of consumers' proficiency with digital financial technologies (Sabila & Hasnawati, 2024). Furthermore, the adoption of digital payments is significantly influenced by variables including perceived security, convenience, innovation, and social influence, according to recent data from Generation Z (Al-Qudah et al., 2024).

2.2 Mediating Effect of User Satisfaction

A key factor in determining users' sustained use of digital financial services is user satisfaction. Expectation-Confirmation Theory states that users' assessment of their past experiences in relation to their expectations leads to satisfaction, which in turn affects their decision to continue (Bhattacharjee, 2001). Therefore, satisfaction can be a key factor in how consumers' opinions of digital services transfer into loyalty and continuous use. Significant correlations between service attributes, customer satisfaction, and ensuing behavioral effects have been shown by other studies in mobile payment and banking contexts (Bala et al., 2021; Al Amin et al., 2023; Ajina et al.,

2023). Satisfaction with digital payment services may also be influenced by affective experiences as well as cognitive assessments. While Oliver (1980) stated that satisfaction arises from the comparison between expectations and actual performance, Mano and Oliver (1993) highlighted that satisfaction encompasses consumers' assessments and emotional responses. Furthermore, satisfaction with mobile payment systems can be influenced by elements including usability, security, trust, and service quality (Alsakarneh et al., 2023; Kim et al., 2009). Therefore, user satisfaction might serve as a psychological mechanism that connects users' adoption behavior with their opinions of digital payment systems. However, little research has been done on its mediating function between various adoption factors and the adoption of digital payments, especially in the context of Bangladesh.

2.3 Factors affecting the adoption of digital payment services

2.3.1 Performance Expectancy

The degree to which people believe that utilizing a technology would improve their everyday duties or job performance is known as Performance Expectancy (PE) (Venkatesh et al., 2003). Through the Technology Acceptance Model (TAM), which Davis (1989) developed, behavioral intention is directly influenced by perceived utility. Users are more likely to adopt payment methods in digital finance when they observe obvious functional advantages including quicker transactions, better record-keeping, lower transaction costs, and simpler accessibility (Oliveira et al., 2016a). Performance expectancy is the degree to which a person believes that utilizing the system would improve their performance at work (Al-Gahtani et al., 2007). According to Alalwan et al. (2018), consumers in developing nations like Bangladesh might only embrace digital payment systems if they can clearly see the performance benefits over cash-based transactions. In a similar vein, Martins et al. (2014) showed that PE directly improved Portugal's adoption of online banking. According to research conducted in Bangladesh and other emerging countries, consumers embrace DPS mostly when they see observable performance gains, particularly in terms of financial management, convenience, and time savings (Malaquias & Hwang, 2019; Ahmed et al., 2021). Adoption intentions may be weakened by users' inability to fully appreciate performance gains due to low technological confidence (Zhou, 2011). Consequently, the following formulation of the hypothesis is possible:

H1: User satisfaction mediates the relationship between Performance Expectancy (PE) and adoption of digital payment systems.

2.3.2 Effort Expectancy and User Satisfaction

Effort expectancy (EE) is a measure of how easy a technology is perceived by consumers (Venkatesh et al., 2003). Digital payment systems can be used with less effort if they have an easy-to-use interface, clear navigation, and a straightforward transaction process. Evidence from Bangladesh indicates that perceived ease of use influences initial trust and mobile-payment usage

intention. Previous research on mobile payments has integrated ease-of-use perceptions into adoption models (Oliveira et al., 2016; Saha et al., 2022/2026). Consequently, it is anticipated that reduced perceived effort will enhance user satisfaction and experience, perhaps promoting adoption.

H2: User satisfaction mediates the relationship between Effort Expectancy (EE) and digital payment system adoption.

2.3.3 Trust and User Satisfaction

Trust is important in digital payment because users must rely on service providers to process transactions securely and protect financial information.. In transactions mediated by technology, trust can boost confidence and lessen uncertainty. Research from Bangladesh demonstrates that perceived security, usability, and other elements might increase initial trust, which in turn affects perceived utility and the intention to utilize mobile payments (Saha et al., 2022/2026). Additionally, studies show that trust and contentment with mobile payments are positively correlated, and that satisfaction in turn supports sustained behavioral results (Hossain, 2019; Zhou et al., 2018). Increased trust is therefore anticipated to improve user satisfaction and, consequently, adoption.

H3: User satisfaction mediates the relationship between Trust and digital payment system adoption.

2.3.4 Perceived Risk and User Satisfaction

Perceived risk represents users' concerns about the potential negative effects of digital transactions, such as financial loss, privacy violations, fraud, and security issues. Such considerations can increase ambiguity and impede adoption. Prior mobile-payment research has shown that perceived risk is important for adoption, and empirical evidence suggests that perceived risk might have a detrimental impact on customer satisfaction (Oliveira et al., 2016; Hossain, 2019). As a result, increased perceived risk is predicted to lower satisfaction, thereby influencing digital payment uptake.

H4: User satisfaction mediates the relationship between Perceived Risk and digital payment system adoption.

2.3.5 Digital Literacy and User Satisfaction

Digital literacy refers to a person's capacity to access, comprehend, and effectively use digital technologies. It is especially crucial in the context of digital financial services, as consumers must be able to navigate applications, complete transactions, and comprehend security processes. Research on mobile banking finds digital literacy as a significant adoption driver (Elhajjar & Ouaida, 2019), whereas recent Bangladesh research investigates financial and digital literacy as determinants affecting preparedness to use FinTech services (Islam & Khan, 2024). Higher digital

capacity may thus allow users to interact more comfortably with digital payment systems, resulting in increased satisfaction.

H5: User satisfaction mediates the relationship between Digital Literacy and digital payment system adoption.

2.3.6 Social Influence and User Satisfaction

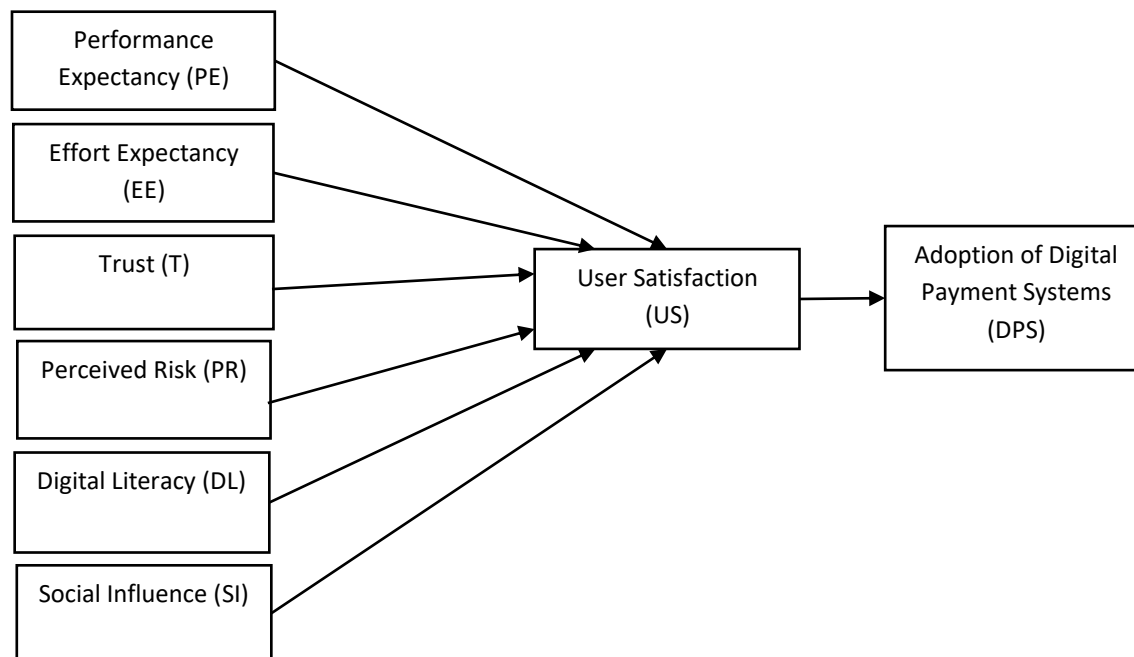
According to Venkatesh et al. (2003), social influence is the degree to which people believe that influential people think they should utilize a technology. Family, peers, and social networks can offer recommendations and social validation, lessening the fear surrounding digital payment usage. Social impact has been identified as a crucial component in mobile payment uptake, and research on mobile payment usage satisfaction indicates that social support can also shape users' service experiences (Koenig-Lewis et al., 2015; Kar, 2020). As a result, positive social influence is projected to increase customer pleasure and, ultimately, adoption.

H6: User satisfaction mediates the relationship between Social Influence and digital payment system adoption.

2.4 Theoretical and conceptual framework

The literature review reveals users' interactions with digital payment services are shaped not only by how good the technology is, but by a combination of diverse dimensions. We selected these six factors because they are recurrently identified as distinct dimensions of digital payment services' user experience. The coverage of our conceptual framework is broad; functional dimensions are explored through performance and effort expectancy, security dimensions through trust and perceived risk, capability through digital literacy, and the interpersonal and social environment surrounding DPS through social influence. Thus, this framework integrates technology perception with digital financial service dimensions. Although these factors capture important aspects of users' interaction with DPS, their impact may not directly translate into adoption outcomes. User satisfaction is included as the mediator based on Expectation-Confirmation Theory (ECT). Bhattacharjee (2001) identifies satisfaction as a key determinant of information-system continuance, implying that users' experiences shape subsequent behavioral intentions. Accordingly, this study proposes that the six antecedent factors influence digital payment adoption indirectly through user satisfaction, integrating TAM, UTAUT, and ECT within the Bangladeshi context.

Figure 1. Theoretical Framework



Source(s): Authors' own work

3. Data and Methodology

3.1 Research Design and Data

A quantitative approach was appropriate for testing the hypothesized relationships (Creswell, 2009) and the study was cross-sectional in nature. Regmi et al. (2016) supports the use of online questionnaires to collect many responses from participants within a short span of time. The study targeted digital payment users in Dhaka, Bangladesh. As the population could not be clearly identified, purposive sampling was used to recruit regular users. A total of 303 valid responses were obtained, which was considered adequate for structural equation modeling (Hair et al., 2022; Kline, 2023).

All constructs were measured using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Measurement items were adapted from validated studies and contextualized for digital payment services. Performance Expectancy and Effort Expectancy were measured with four items each; Trust, Digital Literacy, Perceived Risk, Social Influence, and User Satisfaction with four items each; and Digital Payment System Adoption with six items. Items were adapted from Gan et al. (2021), Mishra et al. (2023), Alkhwaldi et al. (2024), AbdulKareem and Oladimeji (2024), Adel (2024), Gil-Cordero et al. (2024), Al-Qudah et al. (2024), Ghosh (2021), Hussain et al. (2024), and Xavier et al. (2024).

3.2 Data Analysis Technique

SPSS 20 was used for descriptive data analysis. SmartPLS 4 was used to evaluate the measurement model for construct reliability and validity, and to assess the structural models and hypotheses using Partial Least Squares Structural Equation Modeling (PLS-SEM). SmartPLS is specifically suited to assess prediction-oriented models involving multiple constructs and mediation relationships (Sarstedt et al., 2022).

4. Empirical Findings and Discussion

4.1 Empirical Findings

4.1.1 Respondent Profiles

Table-1 exhibits the demographic characteristics, frequency and percentage of the 303 participants who responded to our survey. Among them, 36% are female and 64% are male. As for education level, 40.6% are graduates and 50.2% are postgraduates, which together accounts for over 90% of our respondents. 95.4% of the respondents have experience using digital financial services.

Table 1. Demographic characteristics of the respondents

Particulars	Frequency	Percentage (%)
Age		
18-24	32	10.6
25-34	171	56.4
35-44	65	21.5
45-54	24	7.9
55 and above	11	3.6
Gender		
Female	109	36
Male	194	64

Particulars	Frequency	Percentage (%)
Education		
Post Graduation	152	50.2
Graduation	123	40.6
HSC or Equivalent	23	7.6
SSC or Equivalent	5	1.7
Occupational Status		
Business	30	9.9
Freelancer	10	3.3
Home Maker	20	6.6
Job Holder	122	40.3
Retired	8	2.6
Service	13	4.3
Student	100	33
Currently use Digital Financial Services		
Yes	289	95.4
No	14	4.6
Total	303	100.0

Source: Prepared by the author.

4.2.1 Measurement Model

Table 2 depicts the outer loading values sufficient to adequately measure the constructs as the standard score is stated to be at least 0.7 (J. F. Hair et al., 2019). Here, items were removed EE3, PR4, DL3, SI3, and US3 to have low loading values.

Table 2 also presents the sufficient scores for Cronbach's Alpha (CA), Rho_A, Composite reliability (CR) and Average variance extracted (AVE). Reliability, often measured with Cronbach's Alpha (CA) and Composite reliability (CR), is defined as the degree to which the items yield consistent results under the same conditions (Cronbach, 1951). The acceptable value for equally Cronbach's Alpha and Composite reliability is 0.7 or higher (J. F. Hair et al., 2019). For instance, Nunnally, J. C. (1978) stated that often miscited as a strict 0.7 threshold, actually allowed for reliabilities as low as 0.5 or 0.6 in the early stages of research, with 0.8 preferred for basic research. When factors such as few items per subscale, heterogeneous constructs, or diagnostic assessments where high internal consistency isn't expected are responsible, lower alphas (e.g., around 0.5-0.6) have been justified and kept in published work. Low alpha can also result from poor item inter-relatedness or a small number of questions, in which case it is advised to review and possibly revise items rather than completely discard the construct (Taber, 2017). Convergent validity ensures that the items or questions measuring the same construct are actually correlated and it is assessed with (AVE), which should be equal or larger than 0.5 (Fornell & Larcker, 1981a). For AVE, while 0.5 is the common threshold for convergent validity, values below 0.5 (e.g., as low as 0.4) can still be acceptable if the composite reliability (CR) exceeds 0.6 or 0.7, as this indicates the construct remains reliable despite lower shared variance (Ahmadi et al., 2016). In examining research, CR values among 0.6 and 0.7 are often deemed sufficient, supporting the retention of constructs with marginally lower AVE (Ghanbar, 2024). Based on these criteria, the propositioned theoretical model is acceptable, adequate and reliable.

Table 2. Item loading, convergent validity and reliability

Constructs	Items	Loading value	CA	rho_A	CR	AVE
Performance Expectancy (PE)	PE1	0.748	0.698	0.702	0.815	0.524
	PE2	0.748				
	PE3	0.713				

Constructs	Items	Loadin g value	CA	rho_A	CR	AVE
	PE4	0.684				
Effort Expectancy (EE)	EE1	0.766	0.606	0.605	0.791	0.558
	EE2	0.744				
	EE4	0.734				
Trust (TR)	T1	0.691	0.669	0.672	0.802	0.503
	T2	0.745				
	T3	0.746				
	T4	0.651				
Perceived Risk (PR)	PR1	0.802	0.791	0.813	0.876	0.703
	PR2	0.848				
	PR3	0.864				
Digital Literacy (DL)	DL1	0.756	0.593	0.595	0.787	0.551
	DL2	0.759				
	DL4	0.712				
Social Influence (SI)	SI1	0.733	0.584	0.588	0.781	0.544
	SI2	0.712				
	SI4	0.766				

Constructs	Items	Loading value	CA	rho_A	CR	AVE
User Satisfaction (US)	US1	0.727	0.553	0.558	0.770	0.529
	US2	0.681				
	US4	0.771				
Adoption of Digital Payment Systems (DPS)	DPS1	0.741	0.788	0.789	0.855	0.541
	DPS2	0.751				
	DPS3	0.722				
	DPS4	0.752				
	DPS5	0.710				

Table 3 shows that in the Fornell and Larcker test, the values on the diagonal line are greater than the values under Some correlations, especially those involving Perceived Risk (PR) are negative. These negative values simply show an inverse relationship, which is theoretically expected in digital payment research. Higher perceived risk typically leads to lower trust, satisfaction, or intention to adopt (Featherman & Pavlou, 2003a). Therefore, the negative correlations do not signal measurement problems- rather, they strengthen the theoretical soundness of the model.

Table 3. Correlations among the constructs (Fornell and Larcker test)

	DL	DPS	EE	PE	PR	SI	T	US
DL	0.743							
DPS	0.461	0.736						
EE	0.515	0.375	0.747					
PE	0.475	0.470	0.467	0.724				
PR	-0.129	-0.183	-0.114	-0.187	0.838			
SI	0.470	0.491	0.352	0.456	-0.117	0.737		
T	0.393	0.423	0.404	0.420	-0.139	0.458	0.709	
US	0.428	0.596	0.348	0.472	-0.165	0.475	0.480	0.727

The other way to assess discriminant validity is using Heterotrait-monotrait (HTMT) ratio where the acceptable score is below 0.85 (Henseler et al., 2015). Some papers even suggest that HTMT ratio is better and acceptable when those values up to 0.90 (J. Hair et al., 2018, 2022), precisely, when the constructs are conceptually related. Table 4 indicates all HTMT values fall within the acceptable range, varying between 0.194 and 0.896. Even though a few values approach the upper bound, they remain below the mentioned threshold of 0.90, indicating that the constructions are empirically distinct. The discriminant validity analysis shows satisfactory results, ensuring the validity and reliability of the variables.

Table 4. Heterotrait-monotrait (HTMT) ratio

	DL	DPS	EE	PE	PR	SI	T	US
DL								
DPS	0.670							
EE	0.859	0.539						
PE	0.725	0.624	0.723					
PR	0.194	0.228	0.168	0.253				
SI	0.797	0.718	0.594	0.702	0.179			
T	0.623	0.581	0.641	0.614	0.190	0.730		
US	0.744	0.896	0.604	0.758	0.248	0.828	0.794	

4.1.3 Structural Model

Table 5 indicates the R^2 value of 0.455 for dependent variable DPS (Digital Payment Systems), which is sufficient as 45.5% variation in the dependent variable (DPS) is justified via the independent variables in the model.

Table 5. Results of R^2 statistics

	R-square	R-square adjusted
DPS	0.455	0.442
US	0.375	0.362

5.3 Structural Model: Results of Indirect Path Analysis

Table 6 depicts that PE (PE $\rightarrow$ DPS, β 0.110, SD 0.068, t 1.625, p 0.104) does not significantly impact DPS, as the p value of 0.104 exceeds 0.05. Similarly, EE (EE $\rightarrow$ DPS, β 0.049, SD 0.067, t 0.738, p 0.460) has an insignificant impact on DPS, since $0.460 > 0.05$. T (T $\rightarrow$ DPS, β 0.053, SD 0.064, t 0.817, p 0.414) does not significantly affect DPS, as $0.414 > 0.05$. PR (PR $\rightarrow$ DPS, β

–0.055, SD 0.045, t 1.220, p 0.223) likewise shows no significant impact, as $0.223 > 0.05$. DL (DL $\rightarrow$ DPS, β 0.124, SD 0.069, t 1.812, p 0.070), by contrast, significantly impacts DPS at the 0.10 level, since $0.070 < 0.10$. SI (SI $\rightarrow$ DPS, β 0.162, SD 0.070, t 2.326, p 0.020) has a significant positive impact on DPS, as the p value is below 0.05. Finally, US (US $\rightarrow$ DPS, β 0.362, SD 0.059, t 6.166, p 0.000) positively impacts DPS, with the p value below 0.05.

Table 7 shows the effects of the indirect path analysis and investigates whether User Satisfaction (US) functions as an effective mediator. Here, H2 (H2: EE $\rightarrow$ US $\rightarrow$ DPS, β 0.005, SD 0.023, t 0.220 and p 0.826) and H4 (H4: PR $\rightarrow$ US $\rightarrow$ DPS, β -0.019, SD 0.016, t 1.167 and p 0.243) fail to ascertain a statistically significant mediating effect of US between EE and DPS and PR and DPS, correspondingly. However, the results of table 7 portrays that H1 (H1: PE $\rightarrow$ US $\rightarrow$ DPS, β 0.073, SD 0.026, t 2.827 and p 0.009), H3 (H3: T $\rightarrow$ US $\rightarrow$ DPS, β 0.087, SD 0.026, t 3.275 and p 0.001), H5 (H5: DL $\rightarrow$ US $\rightarrow$ DPS, β 0.047, SD 0.026, t 1.783 and p 0.074) and H6 (H6: SI $\rightarrow$ US $\rightarrow$ DPS, β 0.073, SD 0.025, t 2.925 and p 0.003) successfully able to found a mediating relationship between PE and DPS, T and DPS, DL and DPS as well as SI and DPS.

Table 6. Results of direct path analysis

Path	β	SD	T statistics	P values	Results
PE $\rightarrow$ DPS	0.110	0.068	1.625	0.104	Not Significant
EE $\rightarrow$ DPS	0.049	0.067	0.738	0.460	Not Significant
T $\rightarrow$ DPS	0.053	0.064	0.817	0.414	Not Significant
PR $\rightarrow$ DPS	-0.055	0.045	1.220	0.223	Not Significant
DL $\rightarrow$ DPS	0.124	0.069	1.812	0.070	Significant **
SI $\rightarrow$ DPS	0.162	0.070	2.326	0.020	Significant*
US $\rightarrow$ DPS	0.362	0.059	6.166	0.000	Significant*

*Accepted at 5% Significant Level

**Accepted at 10% Significant Level

Source(s): Author's own work

Table 7. Results of specific indirect effect

Hypotheses	Path	β	SD	T statistics	P values	Results
H1	PE $\rightarrow$ US $\rightarrow$ DPS	0.073	0.026	2.827	0.009	Supported*
H2	EE $\rightarrow$ US $\rightarrow$ DPS	0.005	0.023	0.220	0.826	Not supported
H3	T $\rightarrow$ US $\rightarrow$ DPS	0.087	0.026	3.275	0.001	Supported*
H4	PR $\rightarrow$ US $\rightarrow$ DPS	-0.019	0.016	1.167	0.243	Not supported
H5	DL $\rightarrow$ US $\rightarrow$ DPS	0.047	0.026	1.783	0.074	Supported**
H6	SI $\rightarrow$ US $\rightarrow$ DPS	0.073	0.025	2.925	0.003	Supported*

*Accepted at 5% Significant Level

**Accepted at 10% Significant Level

4.2 Discussion of Findings

The main findings of this study can be divided into three parts. Firstly, digital literacy and social influence have significant relationships with digital payment system adoption both directly and through a user satisfaction mediated mechanism. Secondly, performance expectancy and trust have only user satisfaction-mediated significant relationships with digital payment system adoption, not direct relationships. These findings are consistent with the central role satisfaction plays in linking service expectations to continued use in the information systems literature (Bhattacharjee, 2001). Thirdly, effort expectancy and perceived risk have neither direct nor satisfaction-mediated relationships with digital payment systems adoption.

Interpreting these relationships in the context of Bangladesh requires us to appreciate the unique nature of mobile financial service diffusion through the country; the success of bKash and Nagad in Bangladesh can be attributed to the peer-driven, collectivist decision norms in Southeast Asian cultures. Alalwan et al. (2017) found the effect of social influence as an adoption determinant varies by context. Thus, it is easily understandable why social influence has a significant relationship with adoption of digital payment systems. The respondent sample was skewed towards highly educated, experienced users of digital payment systems; thus a significant relationship is expected between digital literacy and adoption.

Performance expectancy's user-satisfaction mediated relationship with digital payment system adoption can be understood by analyzing the practical utility of remittance receipt, bill payment and merchant transactions. If the users expect this performance to be satisfactory, they are more likely to become regular users of digital payment services.

Trust is still a major issue in Bangladesh's digital payment landscape since unsophisticated MFS frauds are frequent and common; this includes account takeover and agent-level malpractice. Gefen, Karahanna & Straub (2003) find that trust reduces uncertainty in online transactions, and Zhou (2013) finds that trust and satisfaction jointly drive mobile-payment continuance. Though trust does not directly dictate whether people adopt digital payment services in our study, the feeling of security shapes how satisfied people feel with the service, which in turn influences adoption.

Now, the lack of any significant relations between effort expectancy and perceived risk with digital payment systems adoption may seem unexpected at first sight, as Featherman & Pavlou (2003) established that risk is normally a barrier to adoption, but on careful consideration it relates to what Venkatesh et. al (2003) argued about effort expectancy losing predictive power with experience, coined as the ceiling-effect. Since the respondents in our sample are skewed towards educated, experienced users of digital payment services under the age of 40 with good digital literacy, effort expectancy may cease to be a differentiator, and the ease may be taken for granted or demanded as a minimum offering. Besides this, since the sample pool consists of experienced users, it is probable their perceived risk is already resolved by safeguards of the service providers, thus ceasing to be a significant antecedent of adoption. Liébana-Cabanillas et al. (2020) found risk matters in emerging-market mobile payment usage, so there is scope for future research to diversify the sample profiles to get broader results in Bangladesh, as well as other emerging economies.

This study provides a simultaneous test of satisfaction as a mediator across six antecedents from different dimensions in a single model. It adds to satisfaction-based extensions of UTAUT in emerging economies through its findings on indirect-only versus partial distinction relationships.

The practical implications of this research for digital payment service providers are to utilize trust-building communication, report publicly how fraud cases are penalized, invest in their referral and peer mechanisms. Regulators can use user satisfaction measurements as an indicator of digital payment service adoption trends and directions.

Table 8. Summary of Hypothesis Outcomes and Behavioral Implications

Construct	Mediated via US	Implications
Performance expectancy (PE)	Supported	PE influences adoption through user satisfaction rather than directly. FinTech firms should therefore enhance users' experienced usefulness of digital payment services to improve satisfaction and subsequent adoption.
Effort expectancy (EE)	Not supported	Ease of use did not significantly influence adoption through user satisfaction. This may indicate that usability has become a basic expectation, requiring firms to focus on value-added features and service experience in addition to interface simplicity.
Trust (TR)	Supported	Trust influences adoption through user satisfaction rather than directly. Strengthening consumer protection, security assurance, and service credibility may therefore improve satisfaction-driven adoption.
Perceived risk (PR)	Not supported	Perceived risk did not significantly influence adoption through user satisfaction. Firms should continue to provide transparent security and risk-management features, although its role in satisfaction-driven adoption appears limited in this sample.
Digital literacy (DL)	Supported	Digital literacy contributes to adoption both directly and through user satisfaction. Digital literacy initiatives may therefore increase users' confidence, satisfaction, and use of digital payment systems.
Social influence (SI)	Supported	Social influence contributes to adoption both directly and through user satisfaction. Referral programs, peer influence, and social marketing may therefore help encourage digital payment adoption.

**User satisfaction -
(US)**

User satisfaction showed the strongest direct effect on adoption among the predictors examined. FinTech firms should prioritize service quality, reliability, responsiveness, and overall user experience.

Source: Prepared by the author.

5. Conclusion

This study examined the factors influencing digital payment adoption in Bangladesh, with user satisfaction acting as a mediating variable. The findings highlight the role of performance expectancy, effort expectancy, trust, perceived risk, digital literacy, and social influence in shaping users' experiences with digital payment systems. More importantly, the results indicate that user satisfaction plays an important role in translating these perceptions and experiences into adoption behavior.

The findings suggest that users are more likely to be satisfied with digital payment services when they perceive them as useful, easy to use, secure, accessible, and compatible with their social environment. This reinforces the importance of creating a positive user experience rather than focusing solely on technological availability. For service providers and policymakers, the results point to the need to strengthen trust, improve service quality, enhance digital literacy, ensure adequate supporting infrastructure, and maintain appropriate consumer protection. The study therefore contributes to the literature by showing how technological, individual, and social factors can influence digital payment adoption through user satisfaction in the context of Bangladesh.

Several limitations should be considered when interpreting the findings. First, the study used a cross-sectional design and therefore reflects respondents' perceptions at a particular point in time. Second, the analysis was limited to the variables included in the proposed framework and relied on self-reported responses. In addition, the concentration of respondents in Dhaka may limit the extent to which the findings can be generalized to digital payment users across Bangladesh.

Future research could employ longitudinal designs to examine how users' perceptions and adoption behavior change over time. Studies covering respondents from different geographic and socioeconomic groups could also provide a more representative picture of digital payment adoption in Bangladesh. Further insights may be gained by comparing different digital payment platforms, incorporating additional explanatory variables, or combining quantitative analysis with qualitative evidence. Overall, the findings suggest that sustained digital payment adoption depends not only on access to digital financial services but also on whether users have a trustworthy and convenient experience with those services which makes them satisfied.

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Appendix: Measurement Items

Table 9. Measurement Items

Construct	Item	Measurement item
Performance Expectancy	PE1	Using digital payments allows me to complete transactions much faster than manual or cash-based methods.
	PE2	I believe that digital payments improve my ability to handle payments in challenging situations (e.g. low connectivity, remote areas).
	PE3	Digital payment systems provide added value (e.g. discounts, rewards) that make them beneficial for me.
	PE4	Digital payments help reduce my costs (time, travel, fees) compared to traditional payment methods.
Effort Expectancy	EE1	It is easy for me to learn how to use digital payment apps.
	EE2	I can manage to complete payment transactions without needing help or instructions.
	EE3	The design/layout of digital payment tools makes it simple to find what I need.
	EE4	I do not face many errors or difficulties when using digital payment services.
Trust	T1	I trust that digital payment providers will take measures to protect my financial and personal data.
	T2	I believe that digital payment systems perform reliably without failures.
	T3	I feel confident that service providers are transparent about fees, privacy, and conditions.

Construct	Item	Measurement item
Perceived Risk	T4	My past experiences with digital payments have been trustworthy / satisfactory.
	PR1	I worry that using digital payments exposes me to data breaches or hacking.
	PR2	I feel there is a risk of losing money when using digital payment services due to mistakes or fraud.
	PR3	I think digital payment apps may misuse my personal information.
Digital Literacy	PR4	I am concerned that there are hidden fees or unfair conditions.
	DL1	I am confident in my ability to use smartphones and apps required for digital payments.
	DL2	I know how to distinguish between safe and unsafe digital payment apps/websites.
	DL3	I know enough about online security (passwords, multi-factor) to use digital payments safely.
Social Influence	DL4	I can find reliable information/tutorials to improve my digital payment skills.
	SI1	People who are important to me (e.g., family, friends) think that I should use digital payment systems.
	SI2	Using digital payments has become a social norm among my peers.
	SI3	I see people around me using digital payments frequently.
	SI4	Social media and advertisements influence me to use digital payments.

Construct	Item	Measurement item
User Satisfaction	US1	I am satisfied with how reliable digital payment services are.
	US2	The digital payment services I use meet my expectations for speed and convenience.
	US3	Overall, I feel pleased with the quality of support and services provided when I have issues.
	US4	I feel that digital payment services are worthwhile for my needs.
Adoption of Digital Payment Systems	DPS1	I prefer to use digital payments over other traditional methods (e.g., cash, card).
	DPS2	I will always try to use digital payments in my daily life.
	DPS3	I intend to increase my use of digital payment services in the near future.
	DPS4	I often recommend digital payment services to others.
	DPS5	I feel confident to adopt new digital payment tools when they become available.

Source: Prepared by the author.