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# WHAT DRIVES SMES TO ADOPT FINTECH? THE MEDIATING ROLE OF PERCEIVED RELATIVE ADVANTAGE AND SECURITY

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**Abstract:**

This research aims to examine the adoption intention of FinTech among SMEs in Bangladesh using a cross-sectional approach with data collected through a standardized questionnaire comprising six constructs: perceived organizational readiness, perceived competitive pressure, facilitating conditions, perceived relative advantage, perceived security, and behavioral intention. A quantitative method was applied, integrating positivism and deductive reasoning to identify relationships among variables, and the data were analyzed using PLS-SEM. The findings reveal that perceived organizational readiness and perceived competitive pressure positively influence behavioral intention, whereas facilitating conditions show no significant effect on adoption intention. Moreover, perceived relative advantage mediates the relationship between organizational readiness and adoption

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intention, while perceived security mediates the relationship between facilitating conditions and adoption intention; however, no mediation effect was observed for organizational readiness and competitive pressure. PLSpredict results indicate that the proposed model has a medium level of predictive power, and robustness tests examining quadratic effects and endogeneity further confirm the reliability of the model.

**Keyword:**

Fintech Adoption, SME, Perceived Relative Advantage, Perceived Security



## Introduction

Financial Technology (Fintech) is the process to help finance more transparent and cost effective (Serino et al., 2026). FinTech is the application of technology to the delivery of financial services (Kou & Lu, 2025). Fintech is a business line that provides different financial services through software (Ojiaku et al., 2024). It promotes innovation by incorporating modern technologies such as blockchain, AI, and big data analytics (Ahsan et al., 2026). Moreover, Fintech has attracted around $500 billion in funding which will become around 9% of all global financial valuations (Goyal et al., 2023). SMEs also known as small and medium-sized enterprises, make up 90% of worldwide businesses and play a crucial role in promoting innovation, local economic development, and job creation (Ndlovu et al., 2025). Fintech in SMEs has played the role of transformation to several financial opportunities including online banking, mobile financial services (MFS), crowdfunding, and P2P lending (Koomson et al., 2023). Fintech has the capability to link the various financial services (Nathanael & Ngollo 2026) although only 25% of SMEs have adopted Fintech globally, and 56% of those SMEs use banking and payments (Ernst & Young, 2022). Additionally, the global fintech adoption rate is still 64%, whereas only 25% of SMEs have adopted the Fintech. Unfortunately, Bangladesh SMEs are in the lower 40% of markets globally. Bangladesh is one of the developing countries where fintech-led MFS is considered an essential alternative for SMEs (Diniz et al., 2016).

Akter et al. (2021) state that the SME sector contributes around 21% of Bangladesh's GDP. Despite the tremendous contribution of SMEs in Bangladesh, the implementation of technology has yet to be achieved. Due to a lack of corporate or consumer knowledge, Fintech still needs to be at the expected level (Abilawa et al., 2023). Some individual levels of adoption have increased in Bangladesh, but it is still insignificant at the organizational level (Rahman et

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al., 2021). This lack of organizational preparedness could be caused by problems with the infrastructure, staff knowledge or awareness, and budgetary constraints in SME organizations. So, organizational readiness is challenging, and most SMEs perceive technology poorly in Bangladesh (Alam et al., 2011). Moreover, the owners of the SME's decision to adopt depends on the relative advantage of financial benefits such as VAT/Tax benefits (khan et al., 2021). The competitive rivalry among the competitors within the industry depends on the advancement of technology adoption (Martín et al., 2012). It creates an invisible pressure on businesses when consumers become more technology based. According to Cardozo et al. (2023), most Fintech users have security concerns while delivering services for their customers while the facilitating conditions of the users have an impact on behavioural intention. Overall, the use of Fintech is very challenging in Bangladesh. Many SMEs follow traditional business patterns despite considering the advantages of fintech adoption. TOE is widely used for firm level study which developed by Tornatzky & Fleischer (1990). The TOE model was suggested in many kinds of research on technology adoption as this model helps adopt information technology innovation (Jain et al., 2018). For this study, the technological context includes perceived relative advantage and perceived security. The organizational context includes perceived Organizational readiness and facilitating conditions while perceived competitive pressure is explained by the environmental context of TOE. TOE framework is widely used by many researchers because of its widespread application in organizational research (Amini, 2023). The objective of this study is to examine how technological and organizational factors influences SMEs intention to adopt Fintech. Moreover, the investigation of the mediating roles of perceived relative advantage and perceived security is also part of the focus that is verified by this study.

## Literature Review

The intention is one of the important components of the decision-making process (Aref, 2023). Hess et al. (2010) and Yoo et al. (2012) mentioned the wide use of behavioural intention with other variables in their research. The users' intention does not reflect on the user's adoption without any effort specifically for the organization (Diéguez et al., 2023). According to Abed (2020) most of the studies were conducted on entrepreneurs and their intention to accept new technology. Moreover, the effects of technological, organizational, and environmental factors were studied on social commerce adoption by SMEs. This study reveals the perception of SMEs on fintech adoption intention based on their organizational readiness, competitive pressure, facilitating conditions, relative advantage and security and the following research model has been proposed in this study:

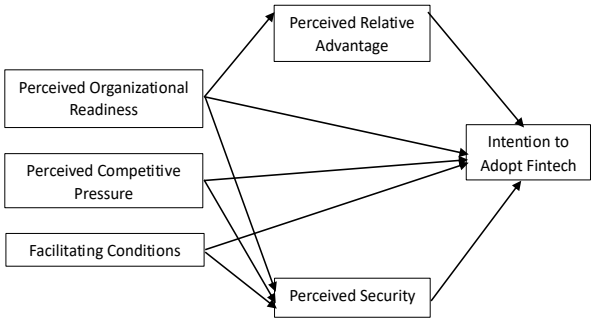


**Figure 1: Research Framework**

Source: Authors Own Compilation

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***Hypothesis Development***

Organizational readiness is an organization's internal dimension of preparation for accepting new technology (Trawnih et al., 2023). According to Beck et al. (2017), organizational and technological readiness are the primary reasons for this low adoption rate. The behavioural intention to adopt Fintech positively correlates with perceived organizational readiness (Urumsah et al., 2022). Organizations should have proper resource to support this revolution both financially and non-financially (Saha et al., 2025). Organizations' impressions of technological and administrative support availability are known as "facilitating conditions," which influence technology adoption (Lv et al., 2024). Wei et al. (2021) found relationships between facilitating conditions and adoption intention, which indicates this positive impact is the availability of advanced technical structure within the organization and support services to use the technology (Baabdullah, 2024). Therefore, the following hypothesises are proposed:
**H1:** Perceived organizational readiness positively affects intention to adopt Fintech
**H2:** Facilitating conditions positively affect intention to adopt Fintech

Relative advantage shows how well a technology is adopted compared to its rivals (Sharma et al., 2024). Relative advantage influences the adoption of technology in businesses (Mukherjee et al., 2023). Previous research indicated that perceived relative advantage positively impacted behavioural desire to adopt Fintech (Abbasi et al., 2022; Wong et al., 2020). Moreover, the fear users have of their personal information being disclosed to third parties without authorization and the potential harm that could follow are two ways to characterize the security risk for adoption intention (Han & Yang, 2018). Assessing the level of security in applications is essential, as it has a significant influence on shaping users' intention to adopt or use a technology. When the perceived level of security is high, the intention to use technology increases (Ahsan et al., 2026). Therefore, the following hypothesises are proposed:
**H3:** Perceived relative advantage positively affects intention to adopt Fintech
**H4:** Perceived security positively affects intention to adopt Fintech

As per Tyler et al. (2020), identifying reasons for competitive pressure among SMEs is very challenging because SMEs face different obstacles than larger companies, and there is more SMEs in every country. According to Marei et al. (2023), the behavioural desire to adopt Fintech positively correlates with perceived competitive pressure. Therefore, the following hypothesis is proposed:
**H5:** Perceived competitive pressure positively affects intention to adopt Fintech

According to Alam et al. (2023), perceived organizational readiness positively influences perceived relative advantages. A study by Palanisamy and Shi (2023) on users' attitudes toward the perceived security of SME owners found security risk issues that have significantly impacted mobile cloud computing. Therefore, the following hypothesis is proposed:
**H6:** Perceived relative advantage mediates the relationship between perceived organizational readiness and intention to adopt Fintech

The study by Berlilana et al. (2021) found positive influence of perceived organizational readiness towards perceived security. Although SMEs would intend to adopt Fintech because of pressure from competitors, security concern is always a priority. According to Ghahramani et al. (2023), an organization's capacity to adapt to information security threats is improved by competitive pressure, which impacts the organization's ongoing information security management improvement. It was anticipated that user-available facilitating conditions would

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directly impact their secure utilization (Besnard & Arief, 2004). Some previous research were done to identify the relationship between facilitating conditions and perceived security such as the study by Novakovic et al. (2009) where the importance of considering necessary support facilities that helps to create the intention. Therefore, the following hypothesises have been proposed:

**H7:** Perceived security mediates the relationship between perceived organizational readiness and intention to adopt Fintech

**H8:** Perceived security mediates the relationship between perceived competitive pressure and intention to adopt Fintech

**H9:** Perceived security mediates the relationship between facilitating conditions and intention to adopt Fintech

## Methodology

The unit of analysis for this study was SMEs' owner-managers at Dhaka City which is the capital city of Bangladesh. Cross-sectional study was followed, and structured questionnaire was developed to collect data from targeted respondents. A 5-point Likert scale, 1=Strongly Disagree and 5=Strongly Agree, have been considered. Non-probability purposive sampling is applied as the detail list of SMEs were not available. Hair et al. (2010) discussed that at least 100 samples should be taken for multivariable analysis, more specifically for factor analysis. This study used 188 samples, and the managers and owners of SMEs received questionnaires which is well above the suggested sample size of Hair et al. (2010). The collected data was recorded in an Excel file later exported to Smart PLS 4.1.1.1 to analyse the collected data using PLS-SEM.

## Analysis

### *Assessment of Measurement Model*

It starts with a validity assessment of indicator reliability which is 0.708 or above as per Hair et al., (2019). All the outer loading values are above 0.708 except FC2 (0.640), PCP2 (0.660), POR3 (0.694), PRA2 (0.690) and PS3 (0.691). Considering the effect, these outer loadings were not removed as it did not impact much. In social science searches, researchers often find that their measurement models have weaker indicator loadings (< 0.708) (Hair et al., 2021), mainly when using recently designed scales (Hulland, 1999). It is suggested that indicators with loadings between 0.40 and 0.708 be deleted only if doing so increases the threshold value for internal consistency reliability or convergent validity. Internal consistency reliability is another tool of measurement model that needs to be validated (Hair et al., 2019). Table-1 shows constructs reliability and validity:

**Table 1: Construct Reliability and Validity**

| | Cronbach's alpha | Composite reliability (rho_a) | Composite reliability (rho_c) | Average variance extracted (AVE) |
|---|---|---|---|---|
| **BI** | 0.863 | 0.866 | 0.916 | 0.785 |
| **FC** | 0.709 | 0.719 | 0.820 | 0.535 |

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| **PCP** | 0.669 | 0.702 | 0.817 | 0.601 |
| **POR** | 0.739 | 0.743 | 0.837 | 0.563 |
| **PRA** | 0.672 | 0.784 | 0.795 | 0.566 |
| **PS** | 0.700 | 0.720 | 0.814 | 0.524 |

Source: Smart PLS 4.1.1.1

The Cronbach's Alpha for each construct is above 0.660 (0.669-0.863). According to Hair et al. (2019), at least 0.60 should be the minimal reliability. According to Raharjanti et al. (2022), a value of 0.60 to 0.80 is considered acceptable. Moreover, all the construct's composite reliability is more than 0.70 (0.702-0.866). After the composite reliability assessment, each construct's convergent validity was assessed where the AVE of all the constructs were a minimum of 0.50 (Hair et al., 2019). After that, discriminant validity assessment is measured using the HTMT ratio. Henseler et al. (2015) suggest that structural models with conceptually very comparable constructs have a threshold value of 0.90 or 0.85 in HTMT ratios. All the constructs HTMT values found less than 0.85 which ensured no issue of discriminant validity. The HTMT vales shown in the following Table-2:

***Assessment of Structural Model***

The p-value of the path coefficient denotes a hypothesis's acceptance or rejection. For a hypothesis to be accepted, its p-value needs to be less than 0.05. From the direct effect H1, H3, H4 and H6 were accepted and H2 was not accepted. From the mediation affect H6 and H9 is accepted while H7 and H8 were not accepted.

**Table 2: Path Coefficient Values of Direct (H1, H2, H3, H4, H5) and Mediation Affects (H6, H7, H8, H9)**

| | | Original sample | T statistics | P values | |
|---|---|---|---|---|---|
| **H1** | **POR -> BI** | 0.269 | 3.179 | 0.001 | Accepted |
| **H2** | **FC -> BI** | 0.027 | 0.307 | 0.759 | Not Accepted |
| **H3** | **PRA -> BI** | 0.208 | 2.547 | 0.011 | Accepted |
| **H4** | **PS -> BI** | 0.170 | 2.307 | 0.021 | Accepted |
| **H5** | **PCP -> BI** | 0.256 | 3.651 | 0.000 | Accepted |
| **H6** | **POR -> PRA -> BI** | 0.090 | 2.449 | 0.014 | Accepted |
| **H7** | **POR -> PS -> BI** | -0.020 | 1.192 | 0.233 | Not Accepted |
| **H8** | **PCP -> PS -> BI** | 0.002 | 0.125 | 0.901 | Not Accepted |
| **H9** | **FC -> PS -> BI** | 0.120 | 2.279 | 0.023 | Accepted |

Source: Smart PLS 4.1.1.1

The assessment of collinearity is assured by VIF. The suggested value for VIF is around 3 or less (Hair et al., 2019). The analysis found all the VIF values are less than 3 thus no issue of multicollinearity is found. After checking the collinearity, verifying the $R^2$ value is required.

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Hair et al. (2019) state that $R^2$ values of 0.75, 0.50, and 0.25 can be considered substantial, moderate, and weak. The $R^2$ of this research model is 51.2% which is moderate. So, the model can explain 51.2% variance of intention to adopt. Moreover, the explanatory power of perceived relative advantage is 18.8%, and the explanatory power of perceived security is 41.5%, which indicates that the perceived security of SMEs in Bangladesh of fintech adoption intention can explain 41.5% of the variability in perceived security.

### *PLS$_{predict}$*

As per Shmueli et al. (2016), PLS prediction can estimate predictive power outside of the sample, it has the potential to provide explanatory power within the sample. The indicators of the three endogenous constructs (BI, PRA, and PS) display $Q^2>0$, indicating that each of the three constructs' structural model's prediction accuracy is reached. The model's predictive significance ranges from modest to medium, with a minimum $Q^2$ value of 0.007 and a maximum of 0.364. Also, the comparison of RMSE and MAE values between PLS-SEM and the linear benchmark model reveals mixed but competitive predictive performance, suggesting medium predictive power.

### *Robustness Tests*

The quadratic effects (QE) results show no significant non-linear relationship ($p>0.05$). Additionally, endogeneity was assessed by Gaussian copula to check for insignificance. The assessment of Gaussian copula was done for all types of possible relationships. This study tested two types of relationships based on the research model: single and multiple relationships. It has been found that all the Gaussian copulas were insignificant for both relationships. Hence, endogeneity was not found.

## Discussion

According to the Findexable (2022) only three of the eight SAARC nations (India, Bangladesh, and Pakistan) were able to maintain their place in the global fintech ranking. India came in at number 23, Bangladesh at 78, and Pakistan at 77 out of 83. Furthermore, Bangladeshi merchants have been discovered to have one of the lowest acceptance rates of Fintech out of many Asian countries (World Bank, 2022). However, the number of mobile financial services users is 178.61 million, which is increasing gradually in Bangladesh and has also had an impact on SMEs' intention to adopt Fintech (Hassan et al., 2022). The initial focus was to identify the mediating effect of perceived relative advantage and perceived security on the factors of fintech adoption intention. The outcome indicates that facilitating conditions do not positively influence the SME's intention to adopt Fintech. This result is in line with previous research (Lv et al., 2024; Wut & Lee, 2022). This result is a different outcome than findings by Hassan et al., (2022). One of the reasons for the negative response is that SMEs in Bangladesh need to have sufficient knowledge and skills to facilitate Fintech. Perceived security is also found to have a positive impact on have also intention to adopt Fintech. Previous studies have also been found (Palanisamy & Shi, 2023). The findings indicate that if the security is high or there is a lack of security, it slows the motivation level of technology adoption (Centeno, 2002). SMEs in Bangladesh think that Fintech could provide sufficient security, which would create the intention to adopt technology in their businesses. Moreover, perceived security is a mediator between facilitating conditions and the intention to adopt Fintech. This study found positive

influences of SMEs perceived competitive pressure on fintech adoption intention. Previous studies also found a positive correlation between perceived competitive pressure and intention to adopt Fintech (Lin, 2014). SMEs in Bangladesh think that if their competitors adopt Fintech, it will pressure them. SMEs would feel more pressure to adopt Fintech while their competitors adopt Fintech. The findings also revealed that perceived organizational readiness positively influences the fintech adoption intention. Some previous studies also found a similar outcome by Hiran & Henten (2020) and Urumsah et al. (2022). The intention to adopt Fintech increases when an organization has sufficient preparation to adopt the technology. According to Clohessy and Acton (2019), perceived organizational readiness reflects the perception of organizational preparation on human resources, finances and infrastructure. A positive influence was found by perceived relative advantage on the intention to adopt Fintech. Other studies also found similar results (Mukherjee et al., 2023; Huang & Yu, 2022). The outcome of relative advantage also indicates that implementation of Fintech would be appreciated while financial and non-financial benefits are found. SMEs would take more preparation for technology adoption while they find it is worthy for their organization. Besides, perceived relative advantage is a mediator between perceived organizational readiness and behavioural intention.

## Conclusion

The use of Fintech is increasing in Bangladesh. Businesses have started realizing the significance of Fintech. Diversified use of Fintech is spreading all over the world, including Bangladesh. According to Liu et al. (2024), Fintech has various uses in businesses. For example, sending money, receiving payments, borrowing money, pay using mobile banking, peer-to-peer lending, and crowdsourcing. Moreover, Fintech makes financial services more comfortable and cost effective (Mamun et al., 2025). The primary goal of this study was to determine which fintech-related factors influence consumers' behavioural intentions to adopt Fintech. The analysis of this study found that perceived organizational readiness, perceived competitive pressure, perceived relative advantage, and perceived security have a significant part in creating intention to adopt Fintech. The management of SMEs thinks that it is important to be internally prepared for technology adoption, especially if the technology provides relative advantages and helps sustain extreme competitive pressure. Above all, users believe that security is the most important aspect in influencing their intention to use Fintech. In SMEs, most transactions are small-scale but very frequent. If security is ensured, the willingness to adopt fintech will increase. In this study, facilitating conditions were not found to influence the intention of fintech adoption. These findings contradict most of the previous studies. The respondent SMEs of this study already have sufficient facilities to adopt Fintech. Moreover, according to the post hoc study, the association between facilitating conditions and intention to adopt Fintech is mediated by perceived security. If the security of Fintech can be ensured, SMEs will be more interested in enhancing their support facilities to adopt Fintech. Perceived relative advantage also mediates perceived organizational readiness and intention to adopt Fintech. Organizations find more interest in adopting a technology that is perceived as advantageous in terms of cost and benefits.

The research's data collection includes SMEs from Bangladesh's major city of Dhaka. Although Dhaka is a major metropolis in Bangladesh, not all locations of the country is covered by this study. This study contributes to the technology adoption literature by extending the TOE framework through the integration of perception based mediating mechanisms. While previous TOE based Fintech studies assess direct relationships between contextual factors and adoption intention, this study proves that organizational readiness and competitive pressure have direct

effect on influencing SME Fintech adoption. Moreover, perceived relative advantage operates as a consistent mediating mechanism, while perceived security shows selective effects. This outcome suggests that not all perceptions consistently function in SME decision making processes. This outcome further contributes to management research by clarifying the roles of advantage in the management of digital financial adoption. Moreover, results suggest that SME managers should focus on strengthening organizational readiness and internal capabilities before Fintech adoption. On the contrary, Fintech services providers focus should be on emphasizing performance benefits rather than focusing solely on security assurance, as perceived relative advantage plays a more consistent role in shaping adoption decision. Finally, SME regulators should accelerate their supportive system that reduce uncertainty and improve tangible benefits of Fintech users.

| | |
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