

Fintech and Islamic Banks - an integrative model approach to predict the intentions

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Abstract: *The study is aimed to examine the intentions of people in Bangladesh to use and adopt FinTech services offered by Islamic Banks. The study has integrated two widely used intentional models- the technology acceptance model and the theory of Planned Behavior along with the Shariah compliance factor for Islamic banks. The data was collected from 342 respondents from various parts of Bangladesh, like Dhaka, Khulna, Chittagong, Mymensingh, Rangpur, and Rajshahi divisions. The data were analyzed using the partial least square structural equation modeling (PLS-SEM) using the SmartPLS software. The study confirms the positive influence of perceived usefulness and perceived ease of use, along with Shariah compliance, on attitudes toward FinTech services. Further attitude toward FinTech services and other factors of the Theory of Planned Behavior has a positive relationship with the intention to adopt FinTech services. The study will be important for researchers to integrate the behavioural and cognitive intentional models for examining the intentions to adopt FinTech services. The study also confirms the role of Shariah compliance factors when studying the customer behaviour of Islamic banks and institutions. The study is the first to integrate the two models, and the Shariah compliance construct to investigate the intention to adopt FinTech services in Bangladesh.*

Keywords: FinTech; Intention; Shariah; Islamic; Banks; Bangladesh

JEL codes: O14; O33; O35

I. Introduction

Literature in recent times delineated that traditional incumbents exhibited agility in changing the mode of providing banking needs to their customers cost-effectively and efficiently, which was primarily led by Financial Technology (Fintech) revolution (Gomber et al., 2018; Kotarba, 2016; Siddik et al., 2014). However, limited studies were conducted to address consumer adoption and their perception of Fintech products and services (Bureshaid et al., 2020). FinTech has thrived by upholding a profound understanding of the client. These companies have evolved by unrelentingly developing innovative customer-centric solutions with a strong distinguishing value proposition at the same time as traditional service delivery firms have lost their grip (Riemer et al., 2017). It is not uncommon to use innovative technology in the finance industry. But, Fintech has become a widely discussed topic only in the last decade because of its disruptive influence on designing applications to meet the demand of the modern era. After the Global Financial Crisis in 2008, many Fintech startups were born out to meet the financial needs of aggrieved customers who had valid reasons to mistrust the conventional banking system. Furthermore, higher smartphone penetration accompanied by better access to novel technologies induced customers to opt for alternative financing

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opportunities. Hence, the Global Financial Crisis in 2008 has long been credited as a catalyst for the rapid rise of Financial Technology (Arner et al., 2015; Cortina Lorente et al., 2018).

The "Fintech " term was unfolded as the adoption of emerging information technology in the financial service industry (Yoon et al., 2016; Gomber et al., 2018). Nakashima (2018) provided some examples of emerging technologies, such as big data, the Internet of Things, and cloud computing, shaping existing products and services. In the meantime, Arner et al. (2015) documented the origin of the deeply rooted relationship between conventional financial services and information technology and believed Fintech startups rather than traditional financial institutions should be credited for being at the forefront in spurring the growth of radical innovation to deal with the substantial change in customer-centric demand. FinTech firms have been stimulating and expanding the ambit of financial inclusion through financing underdeveloped areas in some countries like agriculture (Hudaefi, 2020). Schueffel (2016, p. 45) attempted to propose the most common definition of "Fintech" after reviewing commonalities of the definitions in 200 scholarly articles, and the definition reads approximately as follows:

"Fintech is a new financial industry that applies technology to improve financial activities."

Nevertheless, the lack of consensus on the absolute definition of Fintech persists due to the extreme pace of innovation in the Fintech industry and also because this is a cross-sector sensation (Schena et al., 2018; Milian et al., 2019).

Islamic Fintech, recently termed as i-FinTech (Chong, 2021), is a newly devised term, and researchers found no deviation from Fintech, provided that Fintech technologies were adopted following Shariah (Islamic Law) principles (Usman et al., 2021). Moreover, Alaa and Mirakhor (2017) asserted that Fintech is more connected to the spirit of Sharia as it eliminates two major risks, uneven maturity and leverage. Since 2010, the Islamic Finance Industry has grown rapidly, reflecting the evolution of the vast global Fintech Ecosystem with the aim of designing Islamic-faith-based products and services.

Global Islamic Financial Assets are projected to grow to USD 3.5 trillion in 2024. Several banks offering Islamic Banking windows have sharpened their focus on Fintech to thrive in the future by revolutionizing existing products and services. To remain unscathed as a conventional Islamic Financial Institution, the need for Fintech adoption is of paramount importance (World Bank, 2020). By 2030, the Global Muslim Population is estimated to represent 26.4 percent of the world's total population. Bangladesh will likely remain the fourth-largest Muslim-populated country in 2030; by then, Bangladeshi Muslims are projected to comprise approximately 11.7 percent of the total Global Muslim Population (Grim & Karim, 2011). To tap into this monumental possibility, Islamic Finance Industry must embrace the Islamic Fintech ecosystem as a solution to reap the maximum level of benefit (World Bank, 2020). This was also noted by Rabbani et al. (2020), and the authors advocated that the recent trend in the Financial Industry has left Islamic Financial Institutions no choice other than to embrace FinTech as a way to increase efficiency, transparency, and customer satisfaction. Conventional finance has a higher number of FinTech users than Islamic finance, so to gain and maintain competitiveness, Islamic banks need to offer such services earliest (Baber, 2019). As innovative technologies are being used to provide convenience in the conventional financial sector, so should

be employed by Islamic banks for their customers to set themselves apart from traditional banks (Usman et al., 2021). Baber (2020a, 2020b) suggests that FinTech service is essential for the retention of customers in Islamic banks.

This study aims to shed some light on the current research gap between academics and practitioners to comprehend the paradigm shift in financial services led by Fintech innovation, specifically in Islamic Finance industry. In this study, we have referred to Fintech to address recently devised technological applications such as digital financial services offered by the most popular Shariah-based financial institutions in Bangladesh. We are examining the intention of people to use the Fintech services offered by Shariah-based financial institutions through the theory of planned behaviour (Cognitive model) and technology acceptance model (behavioural model). This study will be the first study that will check the intentions by integrating these two most widely-used models. We are also adding a Shariah compliance factor to check the influence on the attitude towards fintech services to make it relevant to Islamic banks. As far as the accessibility of financial services to unbanked people is concerned, this study will help policymakers in Bangladesh assess how successfully financial institutions have been able to encompass a significant proportion of the population under the umbrella of basic banking services with the aid of emerging technologies. Needless to say, the recent pandemic crisis of COVID-19 has been working as a catalyst to accelerate the rapid development of digital financial services around the globe and particularly in Bangladesh. The brunt of the COVID-19 crisis has changed the industry dynamics of financial services and guided consumers' acceptance of digital financial services. According to data provided by the Central Bank of Bangladesh, the total volume of transactions using mobile phones in September 2020 exhibited stellar growth and was recorded at Tk 491.21 billion, which grew at a 152 percent rate from 194.71 billion in September 2016. Thus, policymakers need to understand the consumer attitude and behavioural intention toward digital financial services as a pragmatic instrument that might provide some help (if employed efficiently) to recover the economy from the COVID-19 crisis².

II. Literature review

Technology acceptance model (TAM)

Davis (1986,1989) proposed Technology Acceptance Model (TAM) in his doctoral dissertation based on the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1977) to predict and explain user adoption of new technology using two constructs, namely, perceived usefulness (PU) and perceived ease of use (PEU). The model indicates that behavioural intention to use technology is determined by attitude, which is influenced by PU and PEU (Davis, 1989; Belanche et al., 2019; Joo, 2017; Baber, 2021).

Since then, the TAM model has been proven by scholars as a highly predictive (Szajna, 1996) and adaptive (Mathieson, 1991) model to study the user adoption of various technologies. Meanwhile, a meta-analysis of the TAM found that the model is robust (Ma & Liu, 2004), and it has been extensively used to explain how emerging technologies are accepted and used (Zhang et al., 2018). A significant number of studies have employed the TAM model to study the behavioural intention towards the usage and acceptance of

Fintech Applications (Susilo et al., 2019) and Fintech Service (Chuang et al., 2016; Kim et al., 2015; Folkinshteyn & Lennon, 2016) in their study. These studies pronounced TAM as an invaluable framework to look at aspects of the novel technology [i.e., bitcoin and blockchain-related technologies] acceptance and adoption process from the perspective of different stakeholders. Thus, the theoretical framework of TAM can be applied to Fintech to illustrate the concept of Fintech adoption, as mentioned in the literature (Hu et al., 2019).

Theory of Planned Behavior (TPB)

In addition to the TAM model, we have also used the Theory of Planned Behavior (TPB) to form our conceptual framework. Ajzen (1991) proposed the TPB model to address the shortcomings of TRA in understanding behaviour, especially in people who have little to no control over their actions. Therefore, a new construct called “Perceived Behavioral Control (PBC)” was incorporated into the TRA model. According to the TPB model, attitude, subjective norm and perceived behavioural control are all direct determinants of behavioural intention, which influences the performance of a given behaviour (Ajzen, 1991)

The comparative analysis between TAM and TPB (Mathieson, 1991) found that TAM was marginally stronger in explaining model variance designed to predict a user's intention to adopt a technology. Additionally, TAM was proposed as the appropriate model in a study where the attitude toward the adoption of technology is of greater importance. More recent evidence (Sanayei & Bahmani, 2012) highlighted TAM as the superior model to both the TRA and TPB to explain individuals' acceptance and usage of internet banking. The reason TAM is superior is that it uses only two constructs (PU and PEU) that can be applied to any technology adoption situation.

Hypotheses Development

Perceived usefulness

In the TAM model, perceived usefulness (PU) is the first belief which is defined as the degree to which an individual's productivity would increase if he/she uses new technology (Davis, 1989). As Folkinshteyn and Lennon (2016) found, PU has a positive influence on the adoption of Fintech services, which is consistent with previous research by Ryu (2018). Akturan and Tezcan (2012) also revealed a significant connection between PU and new technology adoption in the banking sector. In this study, the term "perceived usefulness" alludes to the fact that consumers will embrace Fintech products and services if they feel that using them will influence their task performance (Irum et al., 2018; Venkatesh, 2000).

H1: Perceived usefulness has a positive relationship with attitude toward Fintech services

Perceived ease of use

Perceived ease of use (PEU), as the second belief, refers to the degree to which an individual perceives using the new technology would require minimal effort (Davis, 1989). In general terms, "perceived ease of use (PEU)" can refer to the fact that Fintech products and services would be adopted by consumers if they are user-friendly and take little effort to learn how to use (Hu et al, 2019; Sek et al, 2010). Evidence from previous studies suggests that PEU has a significant impact on consumers' adoption of Fintech products and services (Jiwasiddi et al., 2019; Riquelme & Rios, 2010).

Riquelme and Rios (2010) looked into the factors that most affect behavioural intention to use mobile banking services and discovered that PU is the most important factor, while PEU is more important for female respondents than for male respondents. Chuang et al. (2016) reported that consumers' attitudes about using Fintech products and services would be impacted by their understanding of how convenient and useful it is to use Fintech products and services. Raza et al. (2017) also confirmed that PU and PEU are the key determinants of new technology adoption. Based on arguments, the following hypothesis was formed:

H2: Perceived ease of use has a positive relationship with attitude toward Fintech services

Shariah compliance

The aim of Shariah law in the Islamic financial system is to keep the Muslim population morally upright by governing what activities are acceptable and which are not (Todorof, 2018). To explain the importance of Shariah compliance in Islamic banks, Lee and Ullah (2011) contended that Shariah compliance is an essential element for Islamic bank customers in Pakistan, customers are more likely to close their accounts with a bank if it is found to be consistently breaching Shariah laws. In an Islamic Bank, religious factors should take precedence over other factors, and all of its functions should comply with Shariah law (Khan et al., 2007; Manzoor et al., 2010). Several studies in the past, for instance, Usman et al. (2017), Dusuki and Abdullah (2007), and Mulia et al. (2020) confirmed that customers' decision to use Islamic banking products and services is influenced by their religious beliefs. As a result, Shariah compliance is deemed as an important variable to consider while researching the technologies employed by Islamic banks (e.g., e-banking and m-banking) (Usman et al., 2021; Mulia et al., 2020). Hence, the following hypothesis was suggested based on the studies:

H3: Shariah compliance has a positive relationship with attitude toward Fintech services

Attitude

The term "Attitude" towards a specific behaviour refers to the degree to which the performance of a behaviour is judged with favorableness or unfavorableness (Ajzen, 1991). The key antecedent of intention to adopt new technology is the attitude toward it, which then influences the actual use of the technology (Aboelmaged & Gebba, 2013). Researchers in the past carried out studies in a variety of domains and confirmed attitude as a significant predictor of behavioural intention in embracing new technology (Joo,

2017; Püschel et al., 2010; Safeena et al., 2013). For instance, Shaikh and Karjaluoto (2015). revealed a systematic review of 55 studies in the field of m-banking published between January 2005 and March 2014 to investigate behavioural theories employed by various researchers to predict user adoption. According to their results, users' intentions to use m-banking services in developed and developing countries are greatly influenced by their attitudes. Furthermore, Belanche et al. (2019) revealed attitude as the dominant predictor of behavioural intention to use Robo-advisors in the finance industry. Chuang et al. (2016) investigated consumers' intention to use fintech services and found that attitude has a substantial positive impact on behavioural intention. Based on the above studies, we have developed the following hypothesis:

H4: Attitude has a positive relationship with intention to use Fintech services

Subjective Norm

Subjective norm is defined by Sanayei and Bahmani (2012) to refer to an individual's perception of the social pressure to engage in or refrain from engaging in a particular behaviour, which is influenced by the individual's referent group. Consistent with (Taylor & Todd, 1995), Venkatesh and Davis (2000) tested the extended TAM model using longitudinal data and revealed a positive relationship between subjective norm and usage intention. Recent research on this topic by Belanche et al., (2019) found that the impact of social perceived pressure on consumers adopting emerging technologies [i.e., Fintech] is particularly relevant as they lack personal familiarity with the novel technologies and hence are influenced by the referent groups. Meantime, Niswah and Legowati (2019) investigated the factors that influence Muslim millennials' willingness to use Fintech to donate to charity works. According to the study's findings, the subjective norm is a strong determining factor in millennials' intention to use Fintech, probably because they get influenced by the group of people whose opinions are abetting. The result of the study is in line with (Kim et al., 2016). Several studies in a wide range of fields confirmed that subjective norms significantly influence behavioural intention to embrace new technology (Belanche et al., 2019; Joo, 2017; Safeena et al., 2013). On the contrary, Shaikh et al. (2020) believed that subjective norm does not affect user acceptance of Islamic Fintech, but based on their analysis of 205 respondents from Klang Valley, Malaysia, the authors failed to provide an adequate reason for this finding. Thus, we formed the following hypothesis:

H5: Subjective norm has a positive relationship with intention to use Fintech services

Perceived Behavioral Control

In the literature of Ajzen (1991) and Taylor and Todd (1995), Perceived behavioural control usually refers to an individual's understanding of his or her capacity and constraints to perform a specific behaviour. Adequate resources available to implement technology, as well as the appropriate skill set to use the technology, encourage users to accept it (Niswah & Legowati, 2019). It has been suggested that perceived behavioural control has a positive relationship with the intention to use new technology in several studies

conducted in a variety of domain (Joo, 2017; Safeena et al., 2013; Sanayei & Bahmani, 2012). In light of the above studies, the following hypothesis was suggested:

H6: PBC has a positive relationship with the intention to use Fintech services

III. Methodology

The data was collected from various parts of Bangladesh like Dhaka, Chittagong, Rangpur, Mymensingh, Rajshahi, Khulna, and Barisal divisions. Around 342 respondents participated in the survey. The two-stage sampling method was used to gather the data. First, divisions were selected based on convenience, and then a snowball sampling approach was used, as the survey was shared within the professional and social networks who have an Islamic bank account, who forwarded it further in their network. To make sure that only customers of Islamic banks should participate in the survey, we asked questions like "How are you related to Islamic Banking?" and "What is the reason for choosing Islamic banking over the other options?".

The majority (56.7%) of the respondents fall in the age group 26-35, 21.1% were within the 18-25 age group, 13.5% were between 36-45, and there were around 9% between 46-65 years of age. The sample is mostly dominated by male respondents (75%) as compared to 25% of female respondents. The reason may be that only 36% of females have bank accounts, and 65% of males out of the whole population have bank accounts in Bangladesh, as per the Findex report 2017 (Baber, 2019). The sample is educated as 90% of the sample has at least a Bachelor's degree which makes them more inclined towards using financial technology. The sample has a balanced income distribution group, which is good for understanding the intentions among all the income groups of customers. Around 90% of participants use mobile devices regularly and only 2% of the population uses them rarely.

Table 1. Demographic details

Demographic variable	Options	Frequency	Percentage
Gender	Female	87	25.4
	Male	255	74.6
Age	18-25 years	72	21.1
	26-35 years	194	56.7
	36-45 years	46	13.5
	46-55 years	22	6.4
	56-65 years	8	2.3
Educational Level	HSC/ "A" level or equivalent	29	8.5
	SSC/ "O" level or equivalent	2	.6
	Bachelor's Degree	136	39.8
	Master's Degree	171	50.0

	PhD or higher	3	.9
	Prefer not to say	1	.3
Income	Less than BDT 300,000	93	27.2
	BDT 300,001 - BDT 500,000	50	14.6
	BDT 500,001 - BDT 700,000	42	12.3
	BDT 700,001 - BDT 900,000	24	7.0
	BDT 900,001 - BDT 1000,000	19	5.6
	Above BDT 1000,000	40	11.7
	Prefer not to say	74	21.6
Use of Mobile Device	Rarely	7	2.0
	Sometimes	36	10.5
	Often	64	18.7
	Mostly	235	68.7

IV. Results and analysis

The data were analyzed using the partial least square structural equation modeling (PLS-SEM) using the SmartPLS software. In the initial phases of theory development, PLS-SEM is more useful in assessment and model development. It is also helpful in testing the data which lack normality and when the model is complex (Hair Jr et al., 2020). The seven constructs used in the model were adopted from past studies. The items of TPB constructs- attitude are taken from Hu et al. (2019), and subjective norm and perceived behavioural control are taken from Mutambara (2019). The items of TAM constructs- perceived usefulness and perceived ease of use are taken from Hu et al. (2019). The items of shariah compliance were taken from (Baber, 2021) and behavioural intention from Hu et al. (2019) and Baber (2020c). The factors in the proposed model are shown in Figure 1. Some previous studies have integrated these two models- TAM (Technology acceptance perspective) and TPB (social-psychological perspective) for predicting the intentions to use fintech services (Hu et al., 2019; Fianto et al., 2020), however, this first study examines the same in Islamic banks in Bangladesh.

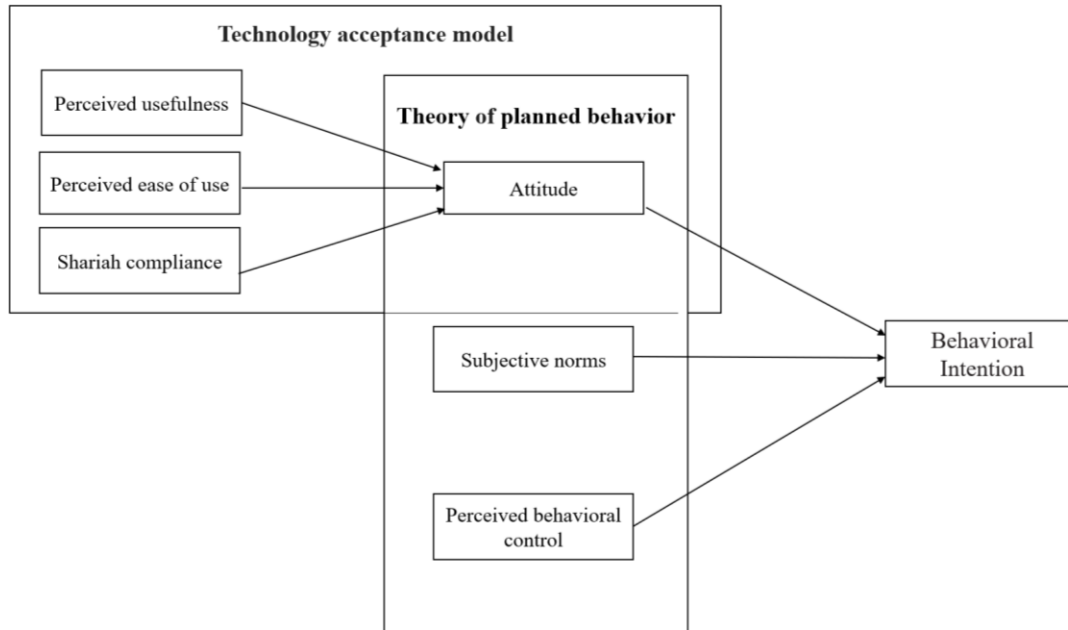


Figure 1. Research Framework

The factor loadings of all seven constructs were assessed as shown in Table I. All the factor loadings values are above the minimum acceptable value of 0.70 (Hair et al., 2019). The reliability of the items was assessed through Cronbach's alpha and composite reliability. All values range above 0.7, which is the recommended standard value, hence reliability of data was confirmed (Hair et al., 2019), as shown in Table 2. To test the convergent validity of data, AVE (average variance extracted) was measured, all the values were higher than the acceptable value of 0.50 (Hair et al., 2019). The confirmation AVE (average variance extracted) signifies that items measure their corresponding construct, which it is meant to estimate.

Table 2. Measurement of Model

Item Code	Item	Factor Loading	Alpha	CR	AVE
Perceived usefulness			0.889	0.923	0.751
PU1	Using Fintech can meet my service needs.	0.845			
PU2	Fintech services can save time.	0.905			
PU3	Fintech services can improve efficiency.	0.829			
PU4	Overall, Fintech services are useful to me.	0.886			
Perceived ease of use			0.830	0.898	0.746
PEU1	It is easy to use Fintech services.	0.883			

PEU2	I think the operation interface of Fintech is friendly and understandable.	0.859			
PEU3	It is easy to have the equipment to use Fintech services (cellphone, APP, WIFI, et al.).	0.848			
Shariah compliance			0.876	0.924	0.801
SC1	Fintech services should be compliant with Shariah regulations.	0.892			
SC2	Fintech services should be without riba (interest) and unlawful profit.	0.878			
SC3	Fintech services should be as per the Shariah laws and regulations.	0.916			
Attitude			0.874	0.922	0.798
ATT1	I believe using Fintech services will be a good idea.	0.902			
ATT2	Using Fintech services will be a pleasant experience.	0.898			
ATT3	I am interested in Fintech services.	0.881			
Subjective norms			0.884	0.928	0.812
SN1	People important to me think that it would be fine to use fintech services.	0.900			
SN2	People whose opinions are valuable to me would prefer that I use fintech services.	0.907			
SN3	People who are important to me would be in favour of using fintech services.	0.896			
Perceived behavioural control			0.899	0.925	0.713
PBC1	I will be able to use fintech services.	0.858			
PBC2	I have sufficient knowledge to use fintech services.	0.844			
PBC3	I have a sufficient extent of self-confidence to make a decision to adopt fintech services.	0.892			
PBC4	Using fintech services is entirely within my control.	0.728			
PBC5	I have the resources, knowledge and ability to use fintech services.	0.889			
Behavioural Intention			0.851	0.910	0.770
BI1	If I have used Fintech services, I am willing to continue using them.	0.898			
BI2	I would like to use Fintech services soon.	0.854			
BI3	I will recommend Fintech services to my friends.	0.881			

To further test the divergent validity of the items, Fornell-Larcker criteria were used, as shown in Table 3. Divergent validity means that each item measures a different construct from the other different items. The square root of all values of AVEs is higher than the correlation between constructs; therefore, divergent

validity is established (Fornell & Larcker, 1981). Again, HTMT (heterotrait–monotrait) ratio further supports divergent validity as all values are below the threshold maximum value of 0.85 (Henseler et al., 2015).

Table 3. Fornell-Larcker criterion

Constructs	PU	PEU	SC	ATT	SN	PBC	BI
Perceived usefulness (PU)	0.867						
Perceived ease of use (PEU)	0.770	0.864					
Shariah compliance (SC)	0.449	0.433	0.895				
Attitude (ATT)	0.810	0.710	0.502	0.893			
Subjective norms (SN)	0.643	0.567	0.344	0.709	0.901		
Perceived behavioral control (PBC)	0.692	0.672	0.441	0.820	0.713	0.845	
Behavioral Intention (BI)	0.714	0.665	0.461	0.804	0.703	0.825	0.878

All hypothesized relationships were tested using the PLS-SEM approach and all relationships in the proposed model were significant. We find the positive effect of Perceived usefulness on attitude (β : 0.603), Perceived usefulness on attitude (β : 0.179), Shariah compliance on attitude (β : 0.153), Attitude on intention (β : 0.332), Subjective norms on intention (β : 0.149), and Perceived behavioural control on intention (β : 0.446). The majority of path coefficients are statistically significant at 1% and 5% significance levels, as shown in Table 4. Therefore, we accept all our hypotheses. To check the indirect relationships, we found a positive influence of Perceived usefulness, Perceived usefulness, and Shariah compliance on intention through attitude. Therefore, attitude mediates the relationship between the three constructs and intention. The R² values of attitude and intention are 0.693 and 0.740, respectively, as shown in Figure 2. This indicates that 69% of the variance in attitude towards FinTech services is explained by the TAM constructs and Shairah compliance construct in the case of Islamic banks. Also, the 74% variance in the intention is explained by the two models- TAM and TPB integrated into this study.

Table 4. Estimated hypothesized relationships

Hypotheses	Path Relationship	β	T-value	P-Values	Remark
H1	Perceived usefulness → Attitude	0.603	10.989	0.000	Supported
H2	Perceived ease of use → Attitude	0.179	3.344	0.001	Supported
H3	Shariah compliance → Attitude	0.153	4.440	0.000	Supported
H4	Attitude → Behavioral Intention	0.332	5.983	0.000	Supported
H5	Subjective norms → Behavioral Intention	0.149	3.305	0.001	Supported
H6	Perceived behavioural control → Behavioral Intention	0.446	7.543	0.000	Supported

Table 5. Indirect Path Relationship

Path Relationship	β	T-value	P-Values
Perceived usefulness $\rightarrow$ Attitude $\rightarrow$ Behavioral Intention	0.200	4.938	0.000
Perceived ease of use $\rightarrow$ Attitude $\rightarrow$ Behavioral Intention	0.060	2.920	0.004
Shariah compliance $\rightarrow$ Attitude $\rightarrow$ Behavioral Intention	0.051	3.701	0.000

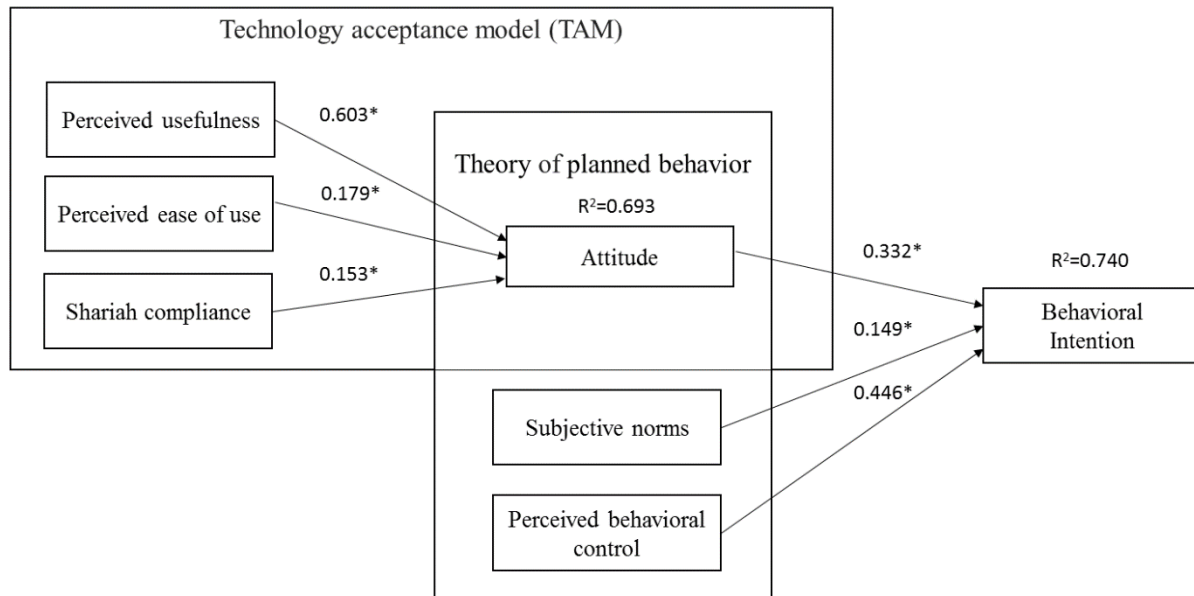


Figure 2 Path Estimations

Although some researchers advocate the use of the PLS-SEM approach for model fit, however, we should be cautious while applying measures to test the Goodness-of-fit (Hair et al., 2019). So to confirm the fitness of the model, we used Amos 22 to test it. Various indices e.g. Chi-square, Goodness-of-fit index (GFI), Adjusted Goodness-of-fit index (AGFI), Comparative Fit Index (CFI), Root mean square residuals (RMSR), Root mean square error of approximation (RMSEA), TLI (Tucker Lewis Index), Normed Fit Index (NFI), and Parsimony normed fit index (PNFI) were estimated. All the indices signify the goodness-of-fit to the data for the proposed structural model as shown in Table 6.

Table 6. Goodness-of-fit estimation

Fit index	χ^2/df	GFI	AGFI	CFI	RMSR	RMSEA	TLI	NFI	PNFI
Recommended value (Hair et al., 2010)	<3	>0.85	>0.80	>0.90	<0.10	<0.08	>0.90	>0.90	>0.60
Structural model	2.745	.872	.834	.937	0.052	.072	.926	.906	.761

V. Discussion

The purpose of this study, which used TAM and TPB models, is to understand better the effects of conventional antecedents (such as perceived usefulness, perceived ease of use, attitude, subjective norm, and perceived behavioural control) combined with an external construct (i.e., Shariah compliance) in predicting customers' acceptance of Fintech services. The research results show that all the hypotheses are supported.

Perceived usefulness and perceived ease of use have a significant positive influence in interpreting attitudes towards the use of Fintech services, and they also have a significant indirect effect on behavioural intention to adopt through attitude. Several researchers in the past reported that perceived usefulness has a greater impact on attitudes toward the acceptance of new technology when compared with perceived ease of use (Aboelmaged & Gebba, 2013; Hu et al., 2019; Raza et al., 2017). However, the result of this research provides interesting insight into the significance of perceived ease of use at the early adoption stage, which was highlighted by (Ashraf et al., 2014; Belanche et al., 2019).

At present, in Bangladesh, customers are encouraged to interact with their respective banks using Fintech solutions as banks have reduced operating hours following movement restrictions to prevent the spread of coronavirus. Most banks showcased their agility and efficiency in promoting their user-friendly Fintech solutions, emphasizing the numerous benefits of adopting them. Throughout the recent pandemic, several banks carried out campaigns with positive messages and tutorials to familiarize their digital solutions, suggesting an increased number of informed users. Customers also preferred digital banking platforms to branch-based banking to avoid being infected with the coronavirus (Uddin, 2021). Thus, this behavioural shift among customers may explain why these two factors are strongly predictive.

Previous studies (Lu et al., 2005; Vijayasarathy, 2004) allowed researchers to incorporate an additional variable to increase the predictive power of TAM. In the meantime, (Usman et al., 2021) revealed the importance of incorporating Shariah compliance as an external variable when studying Islamic Financial Institutions. This study shows that Shariah compliance has a significant impact on customers' attitudes toward Fintech adoption. Islamic banks in Bangladesh have been able to achieve stellar growth over the previous three decades despite fierce competition from conventional counterparts primarily because of

increased demand for Shariah-compliant products and services driven by the Muslim majority population's religious sentiment. Therefore, Shariah-compliant Fintech services can provide a competitive edge to Islamic Banks as they are still struggling to deliver the same infrastructural support as their traditional counterparts. Needless to say, Islamic banks should focus on making their Fintech services Shariah-compliant to reassure their distinctiveness from their competition.

The finding of this study related to the subjective norm is in congruence with the study (Belanche et al., 2019), which implies that customers may seek information from their referent groups to embrace new technology; hence the subjective norm positively influences behavioural intention. In Bangladesh, the COVID-19 pandemic worked as a catalyst to create hype about digital financial services. People were encouraged to explore digital financial services due to favourable policy support from regulators and the Government's spot-on decision regarding disbursing financial aid through a leading mobile financial service provider ("Prime Minister Inaugurates Cash Aid for 3.6 Million COVID-19 -Affected Families," 2021). Consequently, consumers were more confident in the system and encouraged others to use digital financial services.

The results of this study show that perceived usefulness, perceived ease of use and shariah compliance also affect behavioural intention mediated by attitude. Our study supports the view that attitude can be used as a mediating variable to assess the behavioural intention of consumers to embrace products and services offered by Islamic banks (Kaakeh et al., 2019; Zhang et al., 2018).

Perceived behavioural control significantly affects behavioural intention when users feel they lack the resources and skillsets required to use the technology. Thus, the finding of the study supports the fact that the recent development of Fintech services in Bangladesh is in the early adoption stage (Ashraf et al., 2014), and it also indicates that surveyed respondents had less confidence in adopting Fintech services (Mazambani & Mutambara, 2019).

VI. Conclusion and recommendation

With the evolution of technology, access to financial services has become so convenient and easy. As more services are delivered through FinTech services, its adoption and acceptance by the customers were the focus of this study.

According to data obtained from Bangladesh Bank, there are 13 banks involved in mobile banking services. Introducing new resources and cutting-edge technology, the country's mobile banking service providers witnessed astounding 13.4 percent growth in the number of registered customers over a year, bringing the total number of registered customers to 114 million (approx.) at the end of January 2022.³

Due to the Covid-19 pandemic shutdown, which made branch banking a formidable challenge, it has been observed that people now find digital banking to be more convenient than branch-based transactions. Banks

have poured a bundle of new services into their mobile apps, including the payment of various bills, the disbursement of government benefits, remittance transactions, and donations.

It is conspicuous that fintech adoption in Bangladesh is on the rise. To understand why people in Bangladesh are so enthusiastic about Fintech, the paper examined the traditional antecedents, such as perceived usefulness, perceived ease-of-use, attitude, subjective norm, and perceived behavioral control, along with Shariah compliance as an external construct. The authors believe that this employed research model can be used by Fintech professionals to better understand their target customers and execute prudent marketplace practices.

This study explores to understand to what extent Fintech services should comply with Shariah objectives in a Muslim-majority country like Bangladesh. One of the leading mobile financial service providers in Bangladesh has recently received a lot of attention thanks to the availability of Shariah-compliant financial services.⁴ Due to customer demand for Shariah-compliant products after the pandemic, Malaysia has also seen remarkable growth in the Islamic Fintech industry.⁵ As stated by (Mulia et al., 2020), customers are more likely to return to Islamic banks if they believe they are conforming to Shariah principles since they feel more connected to the institutions and don't need to seek out other banks' services. Besides, (Usman et al., 2021) reach the conclusion that Islamic banks might temporarily rely on spreading awareness of Shariah compliance Fintech solutions to broaden their target market due to the fierce competition that exists between them and conventional banks. This is particularly relevant given that Islamic banks have not yet caught up in terms of offering the same Fintech infrastructure as their rivals. Therefore, the results of this study suggest that more financial institutions will develop Shariah-compliant Fintech services to incorporate significant Shariah-biased people who are not covered by traditional counterparts.

Bangladesh is expected to graduate from the least developed country status in 2026; as a result, it is crucial for an emerging nation like Bangladesh to ensure the financial and economic progress of individuals who are less fortunate and do not have access to traditional banking services. In light of this, more financial institutions should step forward to collaborate with mobile financial service providers to introduce digital saving schemes. Through this partnership, all registered users, especially students and underprivileged groups, will be encouraged to develop good saving habits (Ouma et al., 2017). Furthermore, (Ozili, 2018) corroborates that the inclusion of low-income people will also assist financial institutions in surviving macroeconomic shocks and preserving the regional economy.

This study gathered responses from 342 respondents to explore the adoption of Fintech by well-known Shariah-based financial institutions in Bangladesh. In reality, the adoption of Fintech by respondents from other countries that are more focused on conventional financial institutions may result in inconsistent findings from this study. As a result, the study contends that greater sample size and the inclusion of many emerging nations will enable the study's results to be generalized. Furthermore, future research can include additional factors to strengthen behavioral intention predictors, such as perceived trust, perceived risk, perceived cost efficiency, and policy support.

Declaration of conflicting interests

The Author(s) declare(s) that there is no conflict of interest.

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