Volume: 5, Issue:9
Page: 156-164
2021

International Journal of
Science and Business
Journal homepage: ijsab.com/ijsb

IJSAB International

Factors Affecting Adoption of Fintech in Bangladesh

Rashedul Hasan

Abstract

This study objective is to understand the factors affecting the users for accepting the FinTech service and identify the key elements of consumer behavioural intension & consumer awareness. This research is based on the Technological Acceptance Model (TAM) where some other variable such as Perceived Risk, Brand and Trust, Government Support, and User Innovativeness in addition with Perceived Usefulness and Perceived ease of use are used to explain the attitude toward using and behavioral intention of Fintech product and services. Data were collected from 160 respondents for empirical investigation. Structured Equation Model (SEM) has been used to analyze data to test hypothesis and relationship with variable. The result shows that Brand Image and Trust and Perceived Risk (PR) and have major roles on the behavioral intention to use fintech service. The study contributes to the literature of the adoption of fintech in a comprehensive may. The result of the research can be used by the manager of fintech industry specially to offer new product and services.

Keywords: FinTech, FinTech Adoption,TAM, TAM2, SEM.

IJSB
Accepted 09 September 2021
Published 13 September2021
DOI: 10.5281/zenodo.5502367

About Author (s)

Rashedul Hasan, East West University, Bangladesh. Email: rashedulhasan@ewubd.edu

1. Introduction

The term Financial technology also refer as fintech, is consists of creative business ideas and use technology to resolve the error with comfortable daily financial facility. By using FinTech many service sectors like insurance, bank, trading, and risk management increase their productivity. To achieve the market opportunities they continuously challenge the consumer behavior towards the accepting the new change of technology. The regular products of this fintech's are Mobile financial service (e.g. bkash, rocket), ATM, Internet banking, Credit/Debit card, e-wallet (e.g. Payza, iPay), Cryptocurrency (e.g. bitcoin, litecoin, ethereum), E-Ticketing Service (Bangladesh Railway, Shohoz).

To achieve better potential market, FinTech needs to adopt more intensify technique to adjust with more bright ideas. FinTech can change installments handling exercises inside the economy of Bangladesh. Today, a lot of installments are made through money or through the casual informal economic transaction. Encouraging installments through specific money-related establishments will help bring a substantial portion of the casual economy into the formal economy. Expanding installments through the formal economy will improve straightforwardness inside the monetary. There are a good number of research has been done in different countries to analyze the factors that affect the adoption of fintech. However, there are a very few research has done in Bangladesh to find the factors the adoption. The objective of this study is to identify the factors affecting fintech adoption in Bangladesh. Therefore, following research questions can be formulated. These are What are the factors that influence the attitude toward using fintech in Bangladesh and what are the factors that influence the behavioral intension of using fintech in Bangladesh.

2. Literature Review

Theory of Reasoned Action (TRA) was developed by Ajzen and Fishben (1980) to study reasons that affect a person behavior when embracing technologies. Technology Acceptance Model (TAM) has been usually used for understanding the adoption of IS and related field (Ojha, Sahu, & Gupta, 2009). TAM was proposed by Davis (1989), who characterized perceived ease of use and perceived usefulness and as the fundamental factors that influence technology acceptance behavior.

The TAM, TRA, TPB, TAM2, TAM3, UTAUT, and UTAUT2 have been used for many years to explain the adoption of technology by various researchers (Lai, 2017). Lai (2017) stated that after reviewing multiple of papers and all technology acceptance model TAM2, TAM3, UTAUT and UTAUT2 were not favorable to the study of novelty technology of single platform E-payment systems. Moreover, Several recent research have used the extended TAM as a reference model to understand how users accept fintech services. Hhu, Ding, Li, Chen, and Yang (2019) use Extended TAM in in their research titled "Adoption Intentions of Fintech Services for Bank Users: An Empirical Examnination" to explore how consumers adopt fintech services, they presented an improved TAM that includes characteristics such as users' innovativeness, government support, brand image, and perceived risk as predictors of trust. They conducted a survey with 387 responses and used the Structured Equation Model to analyze the data. Users' trust was discovered played dominant role in Fintech adoption, however perceived usefulness and perceived ease of use had no effect. Jin, Lim, & Aye(2018) conducted research in Malaysia to understand the factor affecting the consumers awarness and acceptance towards FinTech product. They used extended TAM model as therir reference model and added consutructs such as reltaive advantage, perceived risk, perceived cost, perceived interactivity along with perceived usefulness and perceived easefulness. They concluded that extended version of TAM provide a more predictable about the Fintech awarness and acceptance in Malaysian

consumers. TAM was also utilized by Stewart & Jurjens (2018) to understand intension to adopt FinTech in Germany, and five more components were added, including value added, customer trust, data security, user design interface, and FinTech promotion.

3. Theoretical Framework and Hypothesis

3.1 Perceived Usefulness

TAM shows that perceived usefulness is a factor generally utilized during the data framework selection and is characterized as how much a purchaser utilizing this new innovation would improve the work effectiveness of that buyer(F. Davis, 1986). Perceived usefulness mention that Fintech can be useful if users things it has positive effect. An expansive number of observational investigations on the reception of information technology in the previous decade have appeared seen that perceived usefulness can positively affect clients' expectations. Chang et al. considered Chinese financial foundations as research objects, and the outcomes demonstrate that the most vital favorable position of Fintech lies in the inside and out mining of client information and the development of a client knowledge map(Chang, Wong, Lee, & Jeong, 2016). Carlin et al. dissected the determinants of recent college grads' selection of Fintech, and the outcomes demonstrate that future and financial learning accomplishment have essential effects on the behavioral expectations of Fintech appropriation(Carlin, Olafsson, & Pagel, 2017). In this manner, in light of the past examinations, the accompanying hypothesis was created:

Hypothesis 1 (H1): Users' perceived usefulness (PU) has a significant impact on attitude toward using (ATU) to use Fintech services.

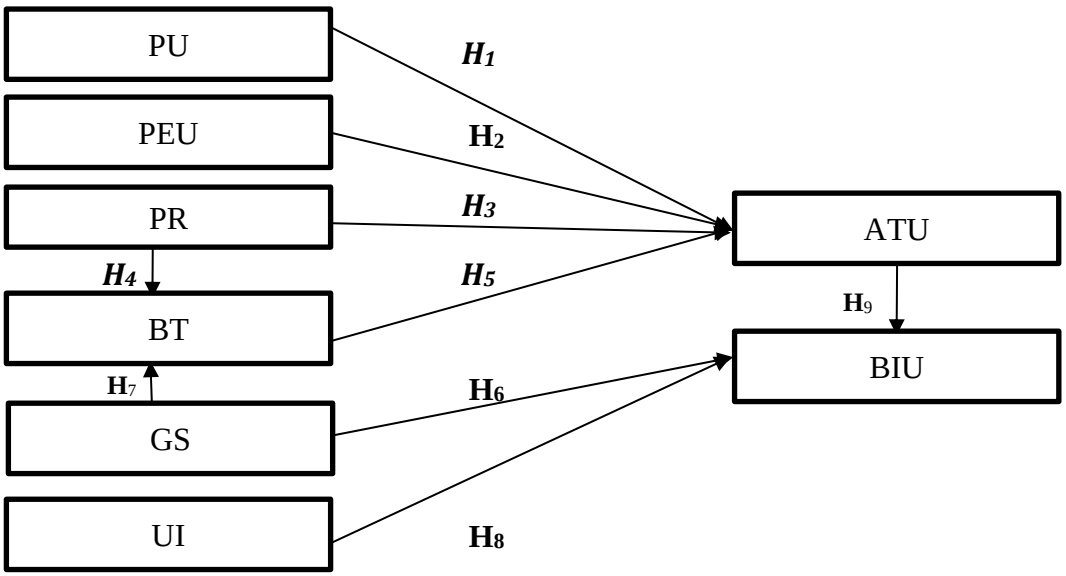

Figure 1: Research Model

3.2 Perceived Ease of Use

Perceived ease of use is another critical factor in the TAM, which is characterized as the level of exertion engaged with utilizing this new innovation. Perceived ease of use indicate how much comfortable the user with new innovation. Fintech administrations give better administrations and client encounters for bank consumer, which can well compensate for the bank's business shortcoming to meet the customized needs of clients, and Fintech's usability is the center component that decides its reception by clients(Abbad, 2013). In the exploration field of banking, numerous researchers have exhibited a critical relationship between's a perceived ease and new innovation selection attitude(Szopiński, 2016). Riquelme et al. thought

about that perceived usefulness essentially influences clients' dispositions and readiness to embrace Fintech when clients utilize complex data frameworks to direct money related exchanges through convenient cell phones. On the off chance that user's believe that Fintech services are helpful, cordial, and simple to work, at that point clients are progressively disposed to receive them(Riquelme & Rios, 2010).

Hypothesis 2 (H2): *Users' perceived ease of use (PEU) has a significant impact on their attitude toward to use Fintech services.*

3.3 Perceived Risk

Perceived risk is a type of absence of trust, and most researchers trust that apparent hazard is the principle factor that contrarily influences appropriation of innovation. Perceived risk alludes to the monetary and security chance that clients see when they pick Fintech services. Monetary hazard alludes to the property harm brought about by customers' worries about item yield rate or different lack of regard, and security chance alludes to the hazard that individual information, exchange information, and other protection data are uncovered when purchasers pick web money related items Khedmatgozar et al. trusted that the level of risk perception is the most imperative factor influencing the selection of e-services(Khedmatgozar & Shahnazi, 2018). Fintech benefits more often than not include advancements, for example, enormous information, the Internet of Things, and distributed computing, along these lines there are some potential dangers for potential risks for users in receiving the service(Zhou, Lu, & Wang, 2010). What's more, when banks give money related administrations to clients through mechanical methods, bank clients ordinarily need to give their private data to finish the far reaching assessment of administrations, which will diminish clients' trust in administrations of bank(de Oliveira Malaquias & Hwang, 2018). Kim et al. discovered that perceived risk would influence users' trust(Kyu & Prabhakar, 2000). In this way, the accompanying hypothesis was created:

Hypothesis 3 (H3): *Perceived risk (PR) has a significant impact on their attitude to use Fintech services.*

Hypothesis 4 (H4): *Perceived risk (PR) has a significant impact on Brand and Trust.*

3.4 Brand Image and Trust: Trust is an idea related to the self-confidence, hope, reliability, dependence, integrity, and capacity of an entity. The main problem for a user is a basis of trust in something. For example, it is the trust in using FinTech (Wu, Liu, & Huang , 2017)**.** The necessary steps to increase users' confidence are the company establishes users' connections by communicating well (Meyliana, 2019)**.**

Hypothesis 5(H5): *Brand and trust (BT) have a significant impact on Attitude toward using.*

3.5 Government Support

One of the largest cooperation of Fintech adoption is Government support. By help of government Fintech can easily gain their trust issues and reputation, government has the power of enhance product it can and reliability towards the consumers, and communication network construction, can be a place a better for Fintech to grow and create possible customers. Kiwanuka et al. claim that government support has a constructive impact on technological adoption. By using applicable TAM model, Marakarkandy et al. presents some crucial points about how government create impact for online banking appropriation and about their trust issues(Marakarkandy, Yajnik, & Dasgupta, 2017). By analyzing above theory, we can stand a following hypothesis:

Hypothesis 6 (H6): *Government support (GS) has a significant impact on their behavioral intention (BIU) to use Fintech services.*

Hypothesis 7(H7): *Government support (GS) has a significant impact on brand and trust.*

3.6 User Innovativeness

User innovativeness is explained as how any individual accept new creation by own. The tendency of any person to attempt latest products, latest technologies or services is related to user innovativeness. Accepting risk and carry uncertainty is not bother when person is highly innovative of experience new creation. They are more open-minded to technological innovation rather than perceive risks. The study of the adoption behavior of mobile payment users, Kim et al. express key element in study of the adoption behavior of mobile payment users that almost all people don't have sufficient skillful knowledge for use of a mobile services, every individual innovation take a major role in the intention of use(Kim, Mirusmonov, & Lee, 2010). Thus, the following hypotheses were developed:

Hypothesis 8 (H8): *User innovativeness (UI) has a significant impact on their behavioral intention (BIU) to use Fintech services.*

3.7 Attitude toward using

Attitude indicate understanding of any subjective matter of users & susceptibility of connecting something of any individual, and the power of someone's dream to execute an express behavior known as a behavior intention. By research TAM present that positive attitude helps any individual to accept new technology easily(Gupta & Arora, 2017; Ng & Kwok, 2017). The older version of TAM provides an information about the favorable relationship between intension of accepting new things & attitudes toward a certain technology and their adoption intentions, and by banks it is also proved through deep study. So, we present this hypothesis:

Hypothesis 9 (H9): *Users' Attitude toward using (ATT) has a significant impact on their behavioral intention (BIU) to use Fintech services.*

3.8 Behavioral Intention to Use

Previous research has shown that an individual's mindset has a considerable positive impact on their behavioral intentions (Venkatesh & Davis, 2000). Potential users' behavioral intentions are determined by subjective norms, while existing users' behavioral intentions are determined by their conduct and attitude. A customer's "attitude toward using" and "willingness to use" Fintech Services should have a strong positive correlation. When customers perceive favorable feedback, they will believe that utilizing Fintech services is a great experience and will be more eager to use them. Furthermore, when customers believe that using Fintech Service is a convenient and useful tool, they will promote it to others, affecting and increasing the attitude of other consumers about using Fintech Service. As a result, attitude has a beneficial impact on behavioral intention to use.

4. Methodology

In this study, author tried to identify the factors which influences the Adoption of FinTech technologies among young generations in Bangladesh. Therefore, it is appropriate to conduct the survey among the university students in Bangladesh. The survey subjects were randomly selected from different university of Bangladesh such as University of Dhaka, East West University and North South University. The questionnaire was prepared through google form and was sent on different university groups to collect the data. There were 39 items divided into 9 sections. First section was the basic information and the rest nine section was the survey of factors affecting fintech services. It was measured by a five-point linear scale, where 1 being strongly disagree and 5 being strongly agree. A total of 200 responses were collected in this study

5. Results:

In this paper, IBM SPSS Statistics 25 and AMOS were used to analyze the data The demographic characteristics of the respondents and Fintech services or products use, and fintech service use of the 200 samples were analyzed first as a part of descriptive statistics that are shown in Table 2. In the below table we can see that out respondents were total of 200 people. Among them 137 were male and rest 63 were female. So, the majority portion was male, which is 68.5%. Then come the demographic section which is age and we divided into four groups. Most of the respondents were from age 21-24 (85%). Then comes the education and most of the respondents were enrolled in undergraduate and the percentage are 88%. Next one is one the most relevant for our research topic which is types of fintech uses.

Table 1: Demographic Data

Demographic variable and category		**Frequency**	**Percentage**
Gender	Male	137	68.5%
	Female	63	31.5%
Age	17-20	4	2%
	21-24	170	85%
	25-28	22	11%
	Above 29	4	2%
Education	Undergraduate	176	88%
	Postgraduate	20	10%
	Others	4	2%

Source: Survey Data

5.1 Reliability and Validation Test results: As the acceptance reliability of the instruments, Fornell & D.F. (1981) recommended a value of CR (Composite Reliability) above.70, AVE (Average Variable Extraction) above.5, and Cronbach's above.7. As shown on the below table most of the construct passed reference value. Convergent validity is needed that loading factor mean above 0.7. The average loading factor mean of the most constructs are above 0.7, hence, the convergent validity for the most of constructs are accepted.

Table 2: Reliability and validation test results

Constructs	Cronbach's α	AVE	CR	Loading Factor Mean
Perceived Usefulness	.72	0.46	0.72	0.68
Perceived Ease of Use	.63	0.46	0.63	0.68
Perceived Risk	.80	0.60	0.82	0.77
Brand and Trust	.82	0.58	0.81	0.76
Government Support	.78	0.55	0.79	0.74
User Innovativeness	.71	0.55	0.71	0.74
Attitude toward using	.69	0.52	0.69	0.72
Behavioral Intention to Use	.80	0.57	0.80	0.75

Source: SPSS Output.

5.2 Confirmatory Factor Analysis of Discriminant Validity

The discriminant validity was assessed by the square root of the AVE and cross loading matrix. The square root of the AVE of a construct should be greater than its correlation with otherconstructs for satisfactory discriminant validity**.** The diagonal elements must be larger than the entries in corresponding columns and rows to satisfy discriminant validity. The results shown in Table 4 reveals that most of constructs in this study confirm the discrim-inant validity of the data.

Table 3: Correlation of Variable and Square Roots of AVE

	PU	PEU	PR	BT	GS	UI	ATU	BIU
PU	**0.460**							
PEU	0.507	**0.460**						
PR	0.002	0.002	**0.600**					
BT	0.437	0.566	0.004	**0.580**				
GS	0.075	0.106	0.203	0.203	**0.550**			
UI	0.103	0.198	0.299	0.299	0.274	**0.550**		
ATU	0.561	0.676	0.508	0.508	0.166	0.198	**0.520**	
BIU	0.640	0.699	0.545	0.545	0.177	0.303	0.752	**0.570**

Source: AMOS Output

5.4 Structural Model Fits Analysis:

Table 4: Structural Model Fits Analysis

Fit Measure	χ^2 /df	AGFI	NFI	CFI	TLI	RMSEA
Value	1.528	.835	0.867	0.948	0.932	0.052
Recommended value	<3	>0.8	>0.9	>0.9	>0.9	<.08

Source: AMOS Output

The result of the evaluation of structured model fits are as following χ^2 df =1.528, AGFI=.835, NFI=.867, CFI=.948, TLI=.932 and RMSEA=.052. The overall fit measures show a good fit of the model.

5.5 Structured Model:

Table 5: Structured Model hypothesis test

Hypothesis	**Path**			**Std Estimate**	**S.E**	**C.R**	**P**	**Comments**
H1	PU	→	ATU	0.574	0.08	5.284	***	Supported
H2	PEU	→	ATU	0.61	0.1	4.995	***	Supported
H3	PR	→	ATU	-0.228	0.031	-3.065	0.002	Supported
H4	PR	→	BT	0.027	0.053	0.338	0.698	Not Supported
H5	BT	→	ATU	0.502	0.057	4.893	***	Supported
H6	GS	→	BIU	-0.02	0.102	-0.184	0.854	Not Supported
H7	GS	→	BT	1	0.258	6.197	***	Supported
H8	UI	→	BIU	0.247	0.05	2.159	0.031	Supported
H9	ATU	→	BIU	0.856	0.159	5.649	***	Supported

Source: AMOS Output

The structural model was developed to identify the relationship among constructs. The study tested the relationship between independent and depended variable by path coefficient and p value. The results of the structural model are shown tables. The result shows relations between PU and ATU(Std estimate 0.574 and p-value <0.001), PEU and ATU(Std. estimate 0.61 and p-value <0.001), PR and ATU(Std estimate -0.228 and p-value <0.002), BT and ATU(Std estimate 0.502 and p-value <0.001),GS and BT(Std estimate 1 and p-value <0.001), UI and BIU(Std estimate -0.247 and p-value <0.031), and ATU and BIU(Std estimate .856 and p-value <0.001) were supported. On the other hand relationship between PR and BT(Std estimate 0.027 and p-value <0.698) and GS and BIU(Std estimate -0.02 and p-value <0.854) were not supported.

6. Conclusion

We can see that Brand and Trust and Perceived Risk are the most important variables that affect the adoption of fintech in Bangladesh. Out of the nine hypothesis seven are supported by the model. From this research we can say that fintech organization should focus on the trust issues as most of the users are concern about it. On the other hand, perceived risk also critical

for the adoption. Many users focus on the different types of risk associated with fintech during use of this service. According to finding of this research, Government support is not an important factor. All other factor such as perceived usefulness, perceived ease of use, and users innovativeness also have some impact on the fintech adoption. Private companies as well as government can use the finding of this research. Managers of private companies can focus on the Brand and trust issue seriously for developing new product as well as for existing product. On the other hand, government can focus on the risk issues of the fintech. Customers are concerned about the risk associated with the fintech service.

Like all other research, this research has also some limitations. This research has used 200 sample sizes. More sample can be used to better testing of the hypothesis. TAM has been used as a primary model for conducting this research. This research uses some additional factors in addition with basic variable in the TAM. Some other variables such as social influence and security can be used in this research. There are some other very popular models such as UTAUT and UTAUT2 for conducting adoption of technology. UTAUT and UTAUT2 can be used reference model for conducting future research.

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Cite this article:

Hasan, R. (2021). Factors Affecting Adoption of Fintech in Bangladesh. *International Journal of Science and Business, 5*(9), 156-164. doi: https://doi.org/10.5281/zenodo.5502367

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