








“Determining factors of intention to adopt internet banking services: A study on commercial bank users in Bangladesh”

AUTHORS	Ayeasha Akhter 
	Md. Mobarak Karim 
	
	Sabeha Jannat 
	K. M. Anwarul Islam  
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Ayeasha Akhter, Assistant Professor, Department of Marketing, Faculty of Business Studies, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Bangladesh.

Md. Mobarak Karim, Assistant Professor, World School of Business, World University of Bangladesh, Bangladesh. (Corresponding author)

Sabeha Jannat, Bachelor of Business Administration, Department of Marketing, Eden Mohila College Affiliated with University of Dhaka, Bangladesh.

K. M. Anwarul Islam, Associate Professor, Department of Business Administration, The Millennium University, Bangladesh.

Ayeasha Akhter (Bangladesh), Md. Mobarak Karim (Bangladesh), Sabeha Jannat (Bangladesh), K. M. Anwarul Islam (Bangladesh)

DETERMINING FACTORS OF INTENTION TO ADOPT INTERNET BANKING SERVICES: A STUDY ON COMMERCIAL BANK USERS IN BANGLADESH

Abstract

E-commerce and e-business are necessary components of today's internet banking due to the developing global economy. Alternatively, in this technological era, the banking sector's success is associated with creating bank users' intention to adopt internet banking services. Therefore, the aim of this study is to determine the influencing factors of intention to adopt internet banking services of commercial bank users' in the Bangladeshi context. A survey questionnaire was formulated based on past works of literature to find out the research objective. The convenience sampling method has been used in this study. For the data collection purpose, 250 bank users were asked request to participate in the research. As a fully completed survey, 180 responses were received where the response rate was 72% and the sample size was $n = 180$. For correlation analysis and hypotheses testing, SPSS version 26.0 was used. The results of the study show that Perceived Security Risk (PSR), Perceived Usefulness (PU), Perceived Ease of Use (PEU), Social Influence (SI), and Consumer Innovativeness (CI) have a statistical and significant impact on the intention to adopt internet banking services. It is concluded that the bank management committee should utilize PU, PEU, SI, and CI to amplify the level of willingness to adopt and embrace general banking services through internet platforms among bank users in their online banking transactions. For the future research study, this paper outlines several significant implications and offers some directions for the bank management committee of a commercial bank.

Keywords

perceived security, internet banking, perceived usefulness, social influence, perceived ease of use

JEL Classification

M15, M19

INTRODUCTION

The concept of internet banking has been a financial service where bank users can perform numerous online banking activities like payment of bills, online transfers, inquiries of account data, financial investments, currency exchange, easy verification of transactions, global connectivity through using the internet (Rahi et al., 2020; Wazid et al., 2019). Besides, internet banking has also been perceived as a medium of online banking that enables people to perform their desired banking activities such as making payments, transferring funds between accounts, obtaining various reports and balance-related formations that perform any time and day (Wibowo et al., 2019). Due to the developing global economy, e-business is the primary ingredient of today's internet banking, and it is the vital catalyst for the economic development of a country. This technological improvement is the key factor to developing future financial services, industry, and especially the banking sector.



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Nowadays, internet banking is the most important and influential part of the world's growing economy and banking sector. Recently, the banking sector of Bangladesh started internet banking activities, and all banks are coming forward to make it successful as a financial service sector (Mondal & Saha, 2013). Therefore, mainly the banking sector is a significant source to grow a nation's economy (Islam et al., 2020). With rapid technological innovation, internet progress has opened a new window for the financial service sector, especially banking. This progress constantly shapes the nature of business in the competitive market. Generally, ICT (Information and Communications Technology) has been a critical element to internet banking that enables the delivery of services by using technological devices like Automated Teller Machines (ATMs), mobile banking, credit cards, and electronic cards (Nazaritehrani & Mashali, 2020). Presently, the platform for enhancing the quality of banking services is the internet, which is considered one of the flourishing mediums of financial transactions for the financial industry (Oruç & Tatar, 2017). Also, information technology is regarded as the fastest financial service due to ease of functionality and flexibility and offers reliable services to customers (Jahan et al., 2020). Using this novel technology, today's digital customers get benefits like speedier payment options, utility bills, and instant money-sending facilities (Liang & Nguyen, 2018). Furthermore, the idea of internet banking offers several valuable opportunities for the banking system to cater to the current financial market by engaging and appealing to a new segment of banking customers from the current number of internet users (Appiahene et al., 2019).

Currently, Bangladesh is a developing country where internet users grow drastically due to expanding internet connections. The tendency of using the internet is rising among Bangladeshi people in case of online transitions, especially online banking activities. Also, the people of Bangladesh use a mobile phone, which is a reliable source to adopt internet banking services, which helps save a lot of time and gives enormous benefits like security, anytime withdrawing and depositing money system, transfer money from one place to another. People are now getting engaged with business activities in this technological era. Henceforth, they need quick online banking services to perform national and international transactions within a single moment. On the other hand, internet banking is also helpful to buy and sell various online products, which vary from one country to another. Recently, the banking sector has been providing updated banking services to customers through adopting internet-based technology in banking operations (Rahaman et al., 2020). Besides, bank users are becoming more interested in adopting internet banking in their banking activities. Therefore, the bank authority should determine the influential critical factors that would develop a degree of propensity to accept internet banking services to the customers in this digitalized environment. Furthermore, the emerging development of the online channel of banking sectors depends on the eased understanding of bank users. Banking institutions need to investigate the influencing factors to create intention among their banking customers.

1. LITERATURE REVIEW

Several research projects were conducted on determining factors of willingness to accept the internet banking facility in various aspects. The prior research indicated that the availability and continuity of the banking service also impacts the adoption of internet banking such as effortless communication and immediate responsiveness (Hammoud et al., 2018). Besides, technical information factors such as efficiency and reliability directly affect the level of adoption propensity of using internet banking facilities (Hussain et al., 2015; Gheni et al., 2016). Previous studies also indicate that trust and perceived quality are

critical indicators for adopting internet banking services (Riffai et al., 2012). Moreover, personal safety, online privacy risk (Lee, 2009), web design, and content convenience (Ling et al., 2016) are the key issues that accept internet banking services. Therefore, the bank management committee should understand why some users adopt IB and others do not. Conversely, prior research projects have investigated various aspects of electronic banking service from consumers' level of acceptance viewpoint in the Western nations, while rare research projects on internet banking facilities have been researched in developing nations. Concurrently, several studies on internet banking have been carried out either in European

or North American countries. Still, minimal projects have been found on internet banking facility contexts from Bangladeshi customers' viewpoint. However, minimal studies have measured the influencing factors to create a propensity to accept internet banking facilities among bank users in Bangladesh. As per the knowledge of authors, very scarce studies have been administered regarding the influencing factors of perceived usefulness (PU), perceived security risk (PSR), perceived usefulness (PU), perceived ease of use (PEOU), social influence (SI), and consumer innovativeness (CI) on the intention to adopt internet banking service. Based on the previous literature, the current project aims to fill this research gap. This study measures the impact of PSR, PU, PEOU, SI, and CI on customers to embrace and take on internet banking facilities in Bangladesh.

1.1. Perceived Security Risk (PSR)

Security risk is defined as the instability of network connection, barriers of transactions, errors transaction, and leakage of personal information in the internet banking system (Lin et al., 2020). Besides, security refers to the website security of customer's transactions, including encoding shared data, payments, credits, etc., which plays a vital part in forming online trust with internet banking transactions (Sathiyavan & Shivany, 2018). On the other hand, the perceived security risk of customers is recognized as one kind of term to use e-commerce and information technology devices that has a profound influence on customers' propensity to embrace online banking channels for daily purposes (Kim et al., 2010). Generally, risk occurs during the transaction of customers in the internet banking system (Malaquias & Hwang, 2016), which is related to product risk, delivery concern, time risk, safety fear, financial threat, etc. that affect the online transaction (Bhatnagar & Ghose, 2004; Forsythe et al., 2006). Accordingly, perceived security risk has a crucial effect on peoples' level of adoption of internet banking facilities (Folake, 2014). Prior studies also indicate that perceived security risk is the most essential determinant factor, which creates intention to adopt internet banking (Koskosas, 2011; Liao & Wong, 2008; Wang et al., 2003). Another study showcased that perceived security risk significantly affects customers' behavioral attitudes about

1.2. Perceived Usefulness (PU)

The perceived usefulness presents consumers' beliefs and accelerating tools, which create the willingness to adopt information technology (Kaur & Malik, 2019). Moreover, PU is regarded as customers' belief about using internet banking services in their banking transactions that fulfill their financial gratification, purposes, and transactions (Bashir & Madhavaiah, 2014). PU is a significant and positive variable to develop a person's attitude to take up internet banking facilities (Davis, 1993). On the other hand, perceived usefulness (PU) is considered as a degree to which a person assumes and expects that using new information technology would increase his/her working performance, which influences behavioral intention to adopt technology (Davis et al., 1989). Additionally, bank management can create higher intention among customers to use internet banking through improving and designing easy and smooth technology for operating transactions of a customer (Lee & Turban, 2001). Prior studies investigated that the PU has a powerful and solid impact on users to adopt internet banking facilities, and based on the higher level of PU, consumers would be more willing to use internet banking services (Yoon & Steege, 2013). Another previous study also recommends that the PU accelerates users' willingness and desire to embrace and accept banking services through internet platform (Kaur & Malik, 2019).

1.3. Perceived Ease of Use (PEU)

Perceived ease of use refers to the degree to which a human being assumes that physical and mental effort would be free effort due to the use of the technological device (Davis, 1989). Besides, the level of PEU and hassle-free internet banking facility increase the intention to take facility using online services (Chong et al., 2010). A customer's internet banking tendency increases due to the simple technological platform of services users (Alalwan et al., 2018). Therefore, an individual's more eagerness and willingness to adopt internet banking depends on the higher level of PEU (Vukovic et al., 2019). Past research also revealed that the perceived ease of use has a significant indirect effect on using and embracing online banking services (Lee, 2009). When individuals perceive and understand that the technologies are easy to use in

internet banking, they increase their intention to adopt online banking services (Pikkarainen et al., 2004). Another study also suggested that perceived ease of use is considered as a predictor of the internet banking system and its influence to adopt internet banking (Lee, 2009; Marakarkandy et al., 2017; Yoon & Steege, 2013). Besides, perceived ease of use is the conclusive factor and it has a positive and significant influence on adopting internet banking services (Karahanna et al., 1999).

1.4. Social Influence (SI)

Social influence (SI) is considered as the outcome of a human being's reciprocity with the elements of the social environment where he lives in (Xi Hu et al., 2019). Besides, it can be explained as the individual's discernment about the surroundings. Most people like colleagues, social groups, friends, family, and peers, who are essential to influencing them whether to use internet banking channels or not (Fong & Wong, 2015). The very idea of "normative social influence" does stimulate people to attain necessary approval and acknowledgment from other social partners. The influenced consumer cares about the influencers' preferences, opinions, expectations, and wishes that create the intention to adopt internet banking (Xi Hu et al., 2019). Similarly, subjective norms or social influence are viewed as opinions of others that are related to the tendency to use information technology in banking transactions (Sanchez-Prieto et al., 2017). According to Utami (2017), social influence is the activities of an individual, which are determined by those who are important to him, which creates social pressure to carry out a certain behavior to buy an online product. Prior studies have confirmed that the social influence or subjective norm plays a significant role in a willingness to use internet banking (Tarhini et al., 2016). Several studies have empirically shown that social influence has a positive and significant impact on the adoption of internet banking through adopting new technology (Venkatesh et al., 2003b). However, Martins et al. (2014) also ensured that SI could also be seen as a strong prognosticator of behavioral intention to adopt internet banking facilities. Also, Abbasi et al. (2011) investigated that subjective norm or social influence (SI) powerfully determines general peoples' preferences to use and apply internet banking channels in their daily financial activities.

1.5. Consumer Innovativeness (CI)

Innovativeness is defined as the skill and imagination of a person where how fast an individual accepts innovative new ideas, methods, or new things (Zhang et al., 2020). On the other hand, consumer innovativeness is defined as the antecedent of change of consumers' attitudes or characteristics toward creating new thinking or innovation, which helps to change the attitude toward accepting new technology (Hwang et al., 2019). Therefore, consumer innovativeness is considered as the tendency to buy new and different branded products or use new technological devices in transition rather than previous consumer patterns (Im et al., 2007). Henceforth, Venkatraman and Price (1990) mentioned various forms of innovativeness such as sensory and cognitive innovativeness, where cognitive innovativeness has been connected with new things that revive and vitalize the mind, and the concept of sensory innovativeness might be seen as a novel experience, which necessarily stimulates the feelings. A prior study also investigated that consumer innovativeness is regarded as a key indicator to enhance the level of e-banking adoption and to reduce the threat concerning aspects of using technology devices in banking channels that impact the adoption of internet banking services (Aldas-Manzano, 2011). A study also confirmed that sensory innovativeness strongly and powerfully affects the relationship between new products innovativeness and consumer innovativeness (Karande et al., 2011).

2. AIM, HYPOTHESES AND RESEARCH MODEL

This study aims to examine the impact of PSR, PU, PEU, SI, and CI on customers' intention to adopt internet banking services. Few research projects have been conducted to examine the bank users' intention to adopt internet banking channels, particularly within the financial industry in Bangladesh. Based on past studies, the following assumptions are formulated:

- H1: *PSR significantly impacts the intention to adopt internet banking channels (IAIBS).*
- H2: *PU significantly impacts the intention to adopt internet banking channels (IAIBS).*

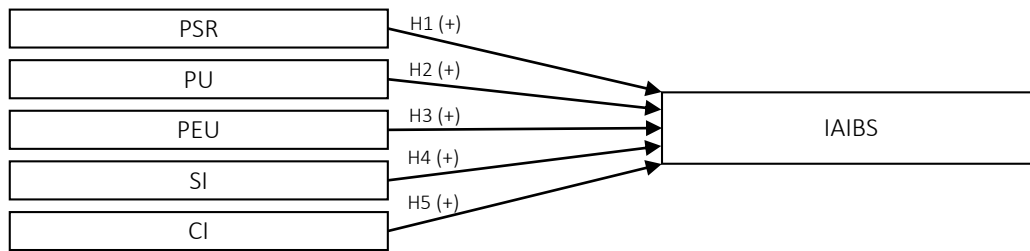


Figure 1. Research model of the study

H3: PEU significantly impacts the intention to adopt internet banking channels (IAIBS).

H4: SI significantly impacts the intention to adopt internet banking channels (IAIBS).

H5: CI significantly impacts the intention to adopt internet banking channels (IAIBS).

The research model has been proposed based on the previous literature review and hypotheses development (see Figure 1).

3. METHODOLOGY

A convenience sampling method was used in this study owing to the number of bank users in Bangladesh being unknown, and the targeted population was Bangladeshi bank users with one or more than one bank account. This study can be perceived as a quantitative study and exploratory in nature, and a primary data set was utilized. From the previous studies, an online survey questionnaire was adapted for the study purpose. The questionnaire was sent to the targeted bank users in Bangladesh through E-mail by using a Google form along with a cover letter. The users' E-mail Ids were collected from commercial banks in Bangladesh. The clarification was given in the survey questionnaire of a "perceived security risk" (PSR), "perceived usefulness" (PU), "perceived ease of use" (PEOU), "social influence" (SI), and "consumer innovativeness" (CI) for a better understanding of the respondents. A total of 210 responses were finally responded; of these, thirty (30) replies had to be discarded due to invalid or incomplete data entries. Thus, a sample comprising of a total of 180 respondents was used for analysis. Therefore, the sample size of this study is $n = 180$. There were two parts to the survey questionnaire. One part consists of demographic informa-

tion of respondents like age in years, sexual identity, nuptial position, income (BDT), educational attributes, and internet banking usage measured in years, and the second portion includes study variables like a perceived security risk, perceived usefulness, perceived ease of use, social influence and consumer innovativeness that describe Likert based questionnaire. To justify the reliability analysis of the variables, the "Cronbach Alpha (α) value" of 0.70 or more than 0.70 was viewed as a tolerable value, and based on the previously tested concept, the questionnaire was taken for the study purpose. Perceived security risk (PSR) was measured by five items adopted from Yousafzai et al. (2009) and Mohammad et al. (2016). The score of PSR was found reliable as ($\alpha = 0.927$). The perceived usefulness (PU) was adopted from Changchit et al. (2019) and Pikkarainen et al. (2004), and it was examined by six (6) items with the reliability score of $\alpha = 0.856$. Five items of "perceived ease of use" (PEOU) were adopted from Bhattacharjee et al. (2015), and Pikkarainen et al. (2004), and the reliability score was found as α is 0.765. Social influence (SI) was adopted from Rahman et al. (2021) and Venkatesh and Morris (2000), and five (5) items measured it. The "Cronbach Alpha (α) value" of this variable was found reliable ($\alpha = 0.752$). Consumer innovativeness (CI) was adopted from Citrin et al. (2000) and Hirunyawipada et al. (2006). Five (5) items measure this variable of CI, and it was deemed as fair ($\alpha = 0.754$). Finally, the intention to adopt internet banking services (IAIBS) was developed by Rahman et al. (2021) and Bhattacharjee et al. (2015), and five items also measured it. For this study purpose, there are 31 items contained to measure the instruments, and each item was measured with a five-point Likert scale, which mentioned "1" for "strongly disagree" and "5" for "strongly agree". For data analysis and hypotheses testing, SPSS software was used in this study, and a 5% significance level was viewed as an indicator to justify the assumptions.

4. RESULTS

4.1. Demographic findings

The targeted respondents were the internet bank users of private banks in Bangladesh, those who had one or more than one bank account and the sample size was $n = 180$. The fully completed survey forms were 180 out of 250 online survey questionnaires, hence the final sample size was estimated as 180. Table 1 represents the respondents' demographic information, where male bank users were 53%, and female bank users were 47% among the total respondents. From the table, it can be said that 17% of the respondents' age was below 30 years, while 38% of the respondents' age was between 30-40 years, and 23% of respondents' age was found in 40-50 years. Among total respondents, 39 bank users were found above 50 years of age (22%) (see Table 1). The majority of the bank users' ages were mid-age level. In terms

of marital status, out of 180 respondents, 45% were single and 55% were married. By examining the income (BDT) level of bank users, 19% of the respondent's income was below 20,000 Taka, while the payment of 27% was between 20,000-30,000 Taka and 22% was 30,000-40,000 Taka. 23% of the respondent's income was 40,000-50,000 Taka. Only 28 respondents' income was found above Taka 50,000 (16%). Based on educational attainments, out of 180 respondents, 21% was undergraduate degree holders, while 48% were graduate holders. Besides, 24% of the respondents have completed their postgraduate degrees. Only 14 respondents (7%) were completed their doctorate degrees. It is also noticeable that 74 bank users' internet bank usage experience was 41%, and 47 were 1 to 6 months (26%), while 29% of the respondent's internet bank usage experience was in 6 to 12 months. Only 7 respondents (4%) have more than 1 year of experience using internet banking (Table 1).

Table 1. Demographic information

Description	Frequency	Percentage (%)
Age		
Below 30 years	30	16.7
30 to 40 years	69	38.3
40 to 50 years	42	23.3
above 50 years	39	21.7
Gender		
Men	96	53.3
Women	84	46.7
Marital Status		
Single	81	45.0
Married	99	55.0
Income (BDT)		
Below 20,000 Taka	34	18.9
20000 to 30,000 Taka	37	20.6
30000 to 40,000 Taka	39	21.7
40000 to 50,000 Taka	42	23.3
More than 50,000 Taka	28	15.6
Education		
Undergraduate	37	20.6
Graduate	86	47.8
Post Graduate	43	23.9
Doctorate	14	7.0
Internet banking usage experience		
Less than 1 month	74	41.1
1 to 6 months	47	26.1
6 to 12 months	52	28.9
More than 1 year	7	3.9

Note: ** $n = 180$.

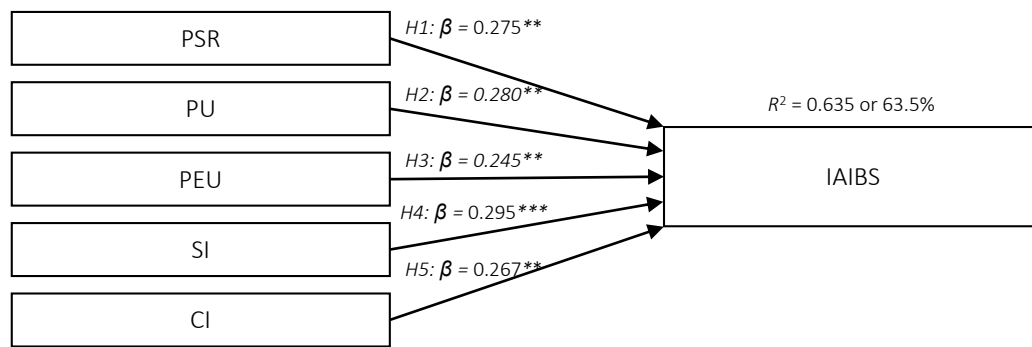


Figure 2. Regression analysis results

Table 2. Regression analysis

Independent variables	β value	t-value	Sig.	Tolerance	VIF
Perceived Security Risk (PSR)	0.275	3.547	0.041**	0.342	2.345
Perceived Usefulness (PU)	0.280	3.468	0.003**	0.534	3.235
Perceived Ease of Use (PEOU)	0.245	3.152	0.007**	0.457	2.431
Social Influence (SI)	0.295	3.546	0.000***	0.634	2.657
Consumer Innovativeness (CI)	0.267	3.743	0.001**	0.565	3.410

Note: $R^2 = 0.635$ or 63.5%. Durbin Watson value = 1.689. DV (dependent variable): IAIBS. ** $p < 0.05$; *** $p < 0.01$ ($n = 180$).

4.2. Hypotheses testing and regression analysis

This study's Durbin-Watson test value is 1.689, which is regarded as an acceptable value, and the fair value scale is 1.5 to 2.5 found in the research (Durbin & Watson, 1950) (Table 2).

From Table 2, the values of VIF (variance inflation factor) were fallen in the range of 1.00-5.00, and the tolerance values were dropped within the permissible domain of 0.1 to 1.0 (Kutner et al., 2004); that does imply that there are no multicollinearity issues in the given research model for this study purpose.

The analysis of the regression coefficient result is shown in Figure 2 and Table 2, where the R^2 value of 0.635 explains 63 percent variance, that explicates that five independent variables: PSR, PU, PEU, SI, and CI, have explained about 63 percent variance in determining users' propensity to embrace internet banking channels in the study context. All assumptions are supported at the five percent significance level. Table 2 also indicates that PSR, PU, PEOU, SI, and CI have a positive and significant impact on the intention to adopt internet banking services by bank users.

5. DISCUSSION AND IMPLICATIONS

This study measures the impact of "perceived security risk" (PSR), "perceived usefulness" (PU), "perceived ease of use" (PEOU), "social influence" (SI), and "consumer innovativeness" (CI) on bank users' intention to adopt internet bank services of commercial banks in Bangladesh.

The first hypothesis reports that "perceived security risk" (PSR) has a solid and powerful effect on peoples' willingness to take on internet banking channels, and the $H1$ assumption has been justified ($\beta = 0.275$, $p < 0.05$). This study concluded that perceived security risk statistically affects people's willingness to take on internet banking services. This result correlates with the past research findings. Perceived security risk affects bank users' behavioral intention to take on internet banking services (Chang & Kirk, 1999). The second assumption is that $H2$: "perceived usefulness" (PU) would have a statistical effect on the propensity to take on internet banking channels, is also validated ($\beta = 0.280$, $p < 0.05$). The outcome of the project is consistent with the previous studies. Perceived usefulness develops the tendency to willingly adopt internet banking services (Kaur & Malik,

2019). The third assumption (*H3*) is that perceived ease of use (PEU) would have a strong impact on people's tendency to take on internet banking facilities of bank users, and this assumption (*H3*) was also justified ($\beta = 0.245$, $p < 0.05$). The result is consistent with previous studies. Perceived ease of use is regarded as a critical indicator of taking on the internet banking system, and it influences the people's level of acceptance of internet banking channels (Lee, 2009; Marakarkandy et al., 2017; Yoon & Steege, 2013). The fourth assumption (*H4*) of this study expected that social influence (SI) strongly affects the intention to take on internet banking channels. The assumption is also confirmed

($\beta = 0.295$, $p < 0.05$). The result is also relevant to the previous studies. Social influence (SI) plays a vital role in developing peoples' tendency to use internet banking facilities (Martins et al., 2014). The fifth and final assumption (*H5*) of this study is that consumer innovativeness (CI) would have a powerful impact on the intention to accept internet banking services, and *H5* is also supported ($\beta = 0.267$, $p < 0.05$). The result is reliable with the prior studies. Consumer innovativeness is regarded as a key factor in reducing risk perception of using technology devices in financial services, which directly affects the adoption of internet banking channels among bank customers (Aldas-Manzano, 2009).

CONCLUSION AND FUTURE RESEARCH

Information communication technology is the primary source of today's internet banking system, which is a growing field in the bank industry. This study attempts to understand the bank user's intention to adopt internet banking services in the Bangladeshi context using constructs like perceived security risk, usefulness, ease of use, social influence, and consumer innovativeness. The banking sector is the essential service sector of an economy, which is an excellent part of advancing economic growth. Financial sectors employ modern technologies to reduce competitiveness and cost and increase efficiency to remain competitive. But the indispensable resources of banking institutions are their customers or users. Therefore, the major fact of the banking sector is to create the intention among bank users to apply banking facilities on the internet platforms in the competitive market in the digitalized age. Moreover, it can be explained that the perceived security risk (PSR), perceived usefulness (PU), perceived ease of use (PEOU), social influence (SI), and consumer innovativeness (CI) have a positive and significant effect on the intention to adopt internet banking services of bank users in Bangladesh. As a result of technological development, online banking activities are growing rapidly in Bangladesh, so there has been a research urgency to investigate influencing factors to adopt internet banking services of bank users in Bangladesh. Moreover, the statistical values of PSR, PU, PEOU, SI, and CI have a positive relationship with the intention of bank users to adopt internet banking services. The study finds that all five independent variables: perceived security risk(PSR), perceived usefulness (PU), perceived ease of use (PEOU), social influence(SI), and consumer innovativeness(CI), have been evidenced to be a significant predictor of the intention of bank users to adopt internet banking services. On the other hand, the study also found that PSR, PU, PEOU, SI, and CI have explained a 63 percent variance in the adoption of internet banking services. A number of crucial future research directions have been offered for future researchers in this study. Firstly, in this, there are some limitations due to quantitative research, so future researchers might use qualitative research to get more findings that will expand the body of literature review. Secondly, another probable limitation of this study is the small sample size as compared to other similar studies, so future research might take a large sample size for more explanatory findings. The study examined the influence of PSR, PU, PEOU, SI, and CI on the intention to adopt internet banking services. Therefore, to enhance the tendency to accept online banking services by customers, bank authorities should consider different policies and strategies. So banks should provide a clear demonstration of using internet banking facilities through implementing practical policies and procedures. Also, the banks should consider other variables like gender, brand trust, internet speed, and perceived enjoyment, which help create a tendency to adopt internet banking services among customers and overcome the limits of inference of the current findings. To measure the level of acceptance of internet banking

services, future studies should consider the public bank with private banking institutions to gather the relevant data from their present bank clients. Therefore, banking institutions should call meetings in a formal or informal way with the existing bank customers or prospective customers to explain the positive effect of using internet banking.

AUTHOR CONTRIBUTIONS

Conceptualization: Md. Mobarak Karim.

Data curation: Md. Mobarak Karim, K. M. Anwarul Islam.

Formal analysis: Ayeasha Akhter, Sabeha Jannat, K. M. Anwarul Islam.

Funding acquisition: Ayeasha Akhter, Sabeha Jannat, K. M. Anwarul Islam.

Investigation: Md. Mobarak Karim, Sabeha Jannat, K. M. Anwarul Islam.

Methodology: Ayeasha Akhter, Md. Mobarak Karim.

Project administration: Ayeasha Akhter, Sabeha Jannat, K. M. Anwarul Islam.

Resources: Ayeasha Akhter, K. M. Anwarul Islam.

Software: Ayeasha Akhter, Md. Mobarak Karim, K. M. Anwarul Islam.

Supervision: Md. Mobarak Karim, K. M. Anwarul Islam.

Validation: Md. Mobarak Karim, K. M. Anwarul Islam.

Visualization: Md. Mobarak Karim, Sabeha Jannat, K. M. Anwarul Islam.

Writing – original draft: Ayeasha Akhter, Md. Mobarak Karim.

Writing – reviewing & editing: Md. Mobarak Karim, K. M. Anwarul Islam.

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