

Investigating the Antecedents of Employee Attitude towards Internet Banking Adoption based on Structural Equation Modeling

*Md. Mahiuddin Sabbir
**Tasmin Jahan

Abstract: *Internet banking is recognized as the latest and key technology driven revolution in executing financial transactions in the recent past. Although several prior research projects have focused on the factors affecting attitude towards the adoption of information technology or internet banking or e-banking from customers' point of view, there was no empirical work which focused on the factors influencing the employees' attitude towards internet banking adoption. The purpose of this paper is to investigate the antecedents predicting the employees' attitude towards the adoption of internet banking. This study is basically descriptive in nature. A survey on 192 samples was conducted to collect primary data and collected data were analyzed through Structural Equation Modeling (SEM) to measure the causal relationships between constructs. Results indicate that except personal innovativeness all other predictors namely perceived usefulness, perceived ease of use, facilitating conditions and perceived risk clearly explain the employees' attitude towards internet banking adoption. Perceived usefulness was found to be the most significant and positive predictor of attitude towards internet banking adoption which was subsequently followed by facilitating conditions and perceived ease of use. As expected, perceived risk was found to be significant negative predictor. This research contributes to the banking industry in a sense that the findings will help policy makers of banking organizations to concentrate on internet banking adoption from employees' point of view which will result in arranging more training and knowledge sharing programs as well as ensuring timely support services for minimizing risks.*

Key Words: Internet Banking, Employee Attitude, Structural Equation Model, Perceived Risk, Technology Acceptance Model.

1. Introduction

In absence of efficient financial market, banking organizations are the significant players for ensuring smooth flow of funds from savers to borrowers (Siddik et al., 2016). Worldwide revolution in Information and Communication Technology sector has brought about a radical change in banking sector. E-commerce, e-business or e-banking are no more newly, innovative ideas that businesses are trying to adapt. Right now, these are just the ways business should follow for doing

* Assistant Professor, Department of Marketing, University of Barishal, Bangladesh.
** Lecturer, Department of Marketing, University of Barishal, Bangladesh.

business (Salehi & Alipour, 2014). Thus, Internet banking services are no longer a “need to have” rather than a “nice to have” services and progressively becoming an “impossible to survive without” for all banks.

Pikkarainen, Pikkarainen, Karjaluoto & Pahnila (2004) stated that internet banking refers to the system that allow an access for the customer to the banking services through an internet portal set up by the physical bank. In accessing true Internet banking, any transaction or inquiry is processed online regardless of location of branch at any time. Internet banking, unlike conventional information systems, enables customers to conduct financial activities virtually by using emerging information technologies such as internet and WWW (Suh & Han, 2002). Banking through using internet is leading the world into a new spectrum of banking by allowing customers conducting their day-to-day business and banking related activities at their comfort (Kesharwani & Bisht, 2012). Moreover, Internet banking services enjoy a relative advantage over brick-and-mortar banks in terms of “timeliness and accuracy of information flow” that help to lessen the information latency in an intense decision-making environment (Kesharwani & Bisht, 2012).

Besides, from bank’s perspective several factors such as competitive cost, timeliness, customer service, and demographic considerations are stimulating banks to explore the modern technology and reconcile their electronic commerce and Internet banking strategies. But the challenge faced by banks in Bangladesh in providing internet banking services is to make sure that the savings from internet banking technology are more than the costs and risks associated with conducting business in cyberspace. This situation can be conquered if the parties associated with internet banking play their role accordingly having a positive attitude towards it. In this regard, the current study has undertaken to examine the antecedents of employee attitude towards internet banking adoption.

2. Literature Review

Years back, banking transactions were done manually which cost extensive time and energy of a large workforce (Siddik et al., 2016). But, things have changed. Bangladesh began to adapt internet technology in banking sector since 2001 (Rahman, 2007) still in the process, the country fell short in exploiting the extensive prospects offered by e-business (Ahmed & Islam, 2008). Good thing is that pioneered by foreign banks (Jahangir & Begum, 2008) in last few years several private and public banks are integrating internet technology within their traditional banking settings (Hasan, Baten, Kamil & Parveen, 2010). This adoption process will get more momentum and the benefits from it will be more exploitable if all the participants of this process hold optimistic attitude towards it.

Almost all the researches done earlier explained internet banking adoption from customers’ point of view using TAM, extended TAM or UTAUT model (Lee, 2009;

Kesharwani & Bisht, 2012; Akhlaq & Ahmed, 2013; Yiu, Grant & Edgar, 2007; Jahangir & Begum, 2008). Unfortunately, no attention has been given to analyze the extent to which the factors identified in TAM or UTAUT model affects employees' attitude towards adoption of internet banking. But to evaluate the level of adoption of internet banking services, it's not only necessary to measure customers' attitude toward internet banking but also that of employees' as well, because at times when banking transactions occur it requires active participation of both parties. Therefore, it must be worthwhile and interesting to uncover if findings from earlier studies can be confirmed in the process of investigating the antecedents of employees' attitude towards adoption of internet banking.

2.1 Perceived usefulness

In information system research, technology acceptance model (TAM) is considered to be the most widely used model to predict the individual adoption of a new technology (Venkatesh & Davis, 1996; Venkatesh & Davis, 2000; Venkatesh & Bala, 2008; Yusoff, Muhammad, Zahari, Pasah & Robert, 2009). One of the significant constructs of this model is perceived usefulness, which is the term that has been extensively recognized in the field of electronic banking. Perceived Usefulness (USF) is defined as the subjective probability that prospective users by using a specific application system or technology will boost up his or her job performance within the context of an organization (Davis, Bagozzi & Warshaw, 1989). Perceived usefulness indicates whether a given task would have been completed more easily through the use of technology (Guriting & Ndubisi, 2006; Jaruwachirathanakul & Fink, 2005; Eriksson, Kerem & Nilsson, 2005).

Former research suggested that perceived usefulness is a significant indicator for technology acceptance (Chau, 1996; Jiang, Hsu, Klein & Lin, 2000; Taylor & Todd, 1995). Tan and Teo (2000) noted that the perceived usefulness is an important factor in determining adaptation of innovations. Therefore, perceived usefulness has significant impact on intention to adapt a particular system (Chen & Barnes, 2007; Eriksson et al., 2005; Venkatesh, 2000; Venkatesh et al., 2003). Lu, Yao and Yu (2005) found positive and significant impact of perceived usefulness on intention to adopt wireless internet services via mobile technology. Another study (Lai & Zainal, 2015) on intention to use single platform E-Payment posited positive and significant association between perceived usefulness and customer's intention to use.

Jahangir and Begum (2008) found that perceived usefulness has significant and positive effect on customer attitude towards and customer adaptation of electronic banking. Therefore, the greater the perceived usefulness of using electronic banking services, the more likely that electronic banking will be adopted (Jaruwachirathanakul & Fink, 2005). Pikkarainen et al. (2004) applied TAM and found that perceived usefulness is one of the significant determinants of actual behavior which motivated the user of the twenty first century banking to use more

innovative as well as user friendly self-service technologies which provides them greater autonomy in performing banking transactions. In line with these findings, researchers (Yiu et al., 2007; Lee, 2009; Kesharwani & Bisht, 2012) also illustrated positive and significant influence of perceived usefulness on internet banking adoption. Therefore, the current study proposes that:

H1: Perceived usefulness has a positive and significant impact on employee attitude towards internet banking adoption.

2.2 Perceived ease of use

Perceived ease of use is the term that refers to the degree to which an innovation is perceived not to be difficult to understand, learn or operate and use of that system will be free of effort (Davis, 1989; Rogers, 1962). Former researchers argued that perceived ease of use is the extent to which a person believes that using a particular system or technology would be at no cost to that individual (Jahangir & Begum, 2008; Davis et al., 1989; Mathieson, 1991; Gefen & Straub, 2000; Gahtani, 2001). Similarly, Zeithaml, Parasuraman and Malhotra (2002) stated that the degree to which an innovation is easy to understand or use could be considered as perceived ease of use.

According to Mathieson (1991), the perceived ease of use is the consumer's perception that if banking transactions take place on the internet, it will require a minimum of effort and time. Extensive research over the past decade provides evidence of the significant effect of perceived ease of use on usage intention, either directly or indirectly (Hernandez & Mazzon, 2007; Wang, Wang, Lin, & Tang, 2003; Venkatesh & Morris, 2000). Recently, Chen and Barnes (2007) have empirically found that two technological aspects of the edge, namely perceived ease of use and perceived usefulness significantly influence customer intention to adapt a new technology or system. Lu et al. (2005) identified direct positive effect of perceived ease of use on intention to adopt wireless internet services via mobile technology. Besides, several studies (Yiu et al., 2007; Lee, 2009) on internet banking adoption pointed up perceived ease of use as a significant determinant. Hence, the authors' proposes following hypothesis:

H2: Perceived ease of use has a positive and significant impact on employee attitude towards internet banking adoption.

2.3 Facilitating conditions

Facilitating condition is one of the four constructs of Unified Theory of Acceptance and Use of Technology (UTAUT) which has served as a baseline model and has been applied to the study of a variety of technologies in both organizational and non-organizational settings (Venkatesh, Thong & Xu, 2012). Facilitating conditions refer to the extent to which an individual perceives that adequate resources and support are available to perform behavior or function (Venkatesh et al., 2012).

It is quite likely that as Facilitating Conditions involves broader infrastructure as well as support issues but it will always be an important factor to those who value it even if they have significant experience with the target technology (Venkatesh et al., 2012). In Unified Theory of Acceptance and Use of Technology (UTAUT), facilitating conditions is hypothesized to persuade technology use directly based on the concept that facilitating conditions in an organizational environment can serve as the substitute for actual behavioural control while influencing behaviour directly (Ajzen, 1991). As many aspects of facilitating conditions, such as training and support provided, will be freely available within an organization and quite invariant across users, facilitating conditions will act more like perceived behavioural control in the theory of planned behaviour (TPB) and influence both intention and behaviour (Ajzen, 1991). Specially, individual who has access to a favorable set of facilitating conditions is more likely to have a higher intention to use a technology, on the contrary, individual having lower level of facilitating conditions will have lower intention to use technology (Venkatesh et al., 2012). So, the study hypothesized that:

H3: Facilitating condition has a positive and significant impact on employee attitude towards internet banking adoption.

2.4 Personal Innovativeness

Innovativeness refers to the degree to which an individual is more or less receptive to adopting new ideas or behavior than the other members of a system or a community (Rogers, 1995). The term personal innovativeness has long been recognized in the field of innovation diffusion research and suggested that highly innovative individuals are active information seekers about innovation and intend to adapt high levels of uncertainty as well as develop more positive intentions toward acceptance (Rogers, 1983; 1995).

Earlier, Agarwal and Prasad (1998) proposed personal innovativeness as a new construct in information technology since up to that period role of personal innovativeness has not been included in any of the dominant technology acceptance models. They argued that personal innovativeness is an imperative notion for explaining the acceptance of information technology innovations and define personal innovativeness as the willingness and endeavour of an individual to take the risk and experience of any new information technology (Agarwal & Prasad, 1998). They referred this influential personal trait as Personal Innovativeness in Information Technology (PIIT) and added it to Davis' original TAM model and hypothesized that individuals with higher levels of PIIT are intended to develop more positive perceptions about the innovation in terms of advantage, ease of use, compatibility, etc. and have more positive intentions toward adoption of a new Information Technology/System (Lu et al., 2005). Though Lu et al. (2005) failed to

identify significant impact of personal innovativeness on intention to adopt wireless internet services via mobile technology, later Zhang, Zhu and Liu (2012) cited 11 studies that found significant positive association between innovativeness and behavioural intention to mobile commerce adoption. Besides, Yiu et al. (2007) posited positive association between personal innovativeness and internet banking adoption. Hence, the study hypothesized that:

H4: Personal Innovativeness has a positive and significant impact on employee attitude towards internet banking adoption.

2.5 Perceived Risk

Introducing a new technology may involve benefits as well as risks to the user, and before forming intention to adopt a new technology, the individual may want to weigh up risks and benefits (Smadi, 2012). Electronic banking services will not be an exception to this general rule. Adoption to Information system or new technology has been shown to create anxiety and discomfort for consumers and employees as well (Featherman & Fuller, 2003). The perceived benefit of the technology is reduced due to a larger perception of risk of adoption (Horst, Kuttschreuter, & Gutteling, 2007). Specifically, increased risk perceptions leads to the increased feeling of psychological discomfort and anxiety that would cause the potential adopter both to undervalue perceived usefulness of the e-service and downstream adoption intentions.

Accumulation of uncertainty (probability of loss) and danger (cost of loss) that make up perceived risk have been shown to restrain product evaluation (e.g. perceived usefulness) and adoption (Dowling & Staelin, 1994). Previous studies mentioned that perceived risk was one of the most important aspects that influence the adoption of electronic banking services (Polatoglu & Ekin, 2001; Tan & Teo, 2000). Perceived risk has been found to restrain product evaluation and adoption (Dowling & Staelin, 1994) and e-services adoption (Featherman & Pavlou, 2003). Kesharwani & Bisht (2012) extended the technology acceptance model (TAM) in the context of internet banking adoption in India under security and privacy threat (Oruç & Tatar, 2016). Featherman and Pavlou (2003) found that perceived risk has a negative impact on behavioral intention of internet banking adoption.

In previous studies six dimensions of perceived risk have been identified and Performance risk is one of them (Featherman & Pavlou, 2003; Kuisma, Laukkanen & Hiltunen, 2007; Natarajan, Balasubramanian & Manickavasagam, 2010). Cunningham (1967) classified performance into three types (i) economic, (ii) temporal, (iii) effort. He also posited that all risk facets stem from performance risk and noted that performance risk refers to the extent to which there is a likelihood of the product malfunctioning and not performing as it was designed and advertised and therefore failing to deliver the desired benefits. According to Grewal, Gotlieb &

Marmorstein (1994) Performance risk means losses that incurred due to the deficiencies of electronic services. Users of electronic services are often concerned that a break down in the system servers will occur while conducting electronic services, because these situations may result in unexpected losses (Kuisma et al., 2007). Featherman & Pavlou (2003) found that e-services adoption is adversely affected primarily by performance-based risk perceptions.

On the other hand, time risk refers to the loss of time in implementing, learning how to use, adapting and troubleshooting a new electronic service or a new technology (Natarajan et al., 2010). Usually, consumers are less interested to adopt an electronic service that they believe will have high setup and maintenance costs (Featherman & Pavlou, 2003). Therefore, the study hypothesized that:

H5: Perceived risk has a negative and significant impact on employee attitude towards internet banking adoption.

Based on discussions of literature review section and stated hypotheses, following model has been proposed for current study:

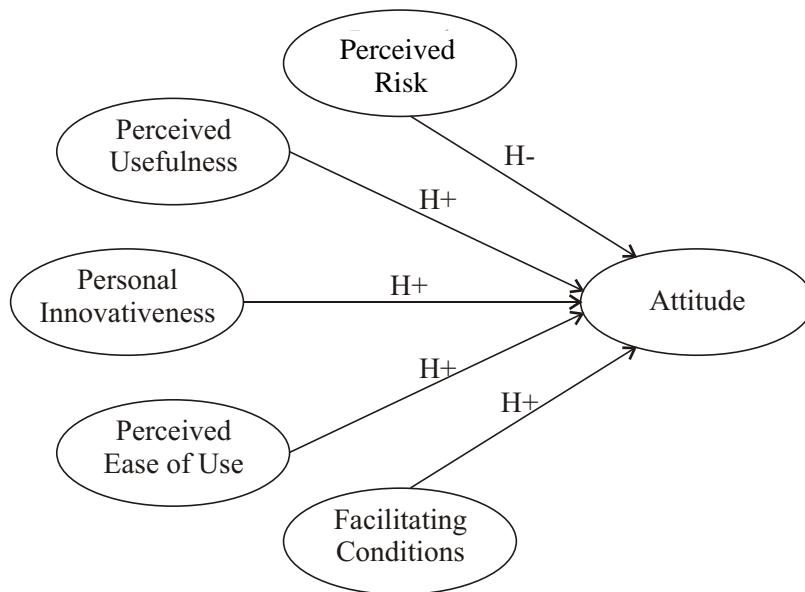


Fig. 1: Proposed model of the study
(Source: Review of previous literatures)

3. Purpose of the Study

The major purpose of the study was to investigate the antecedents predicting the employees' attitude towards the adoption of internet banking. In the process, the study seeks to achieve other specific objectives like:

- a) Evaluating whether perceived usefulness, perceived ease of use, facilitating conditions, personal innovativeness and perceived risks adequately predicts the variation in the attitude towards internet banking adoption.
- b) Suggesting some theoretical and practical implications based on the findings of the study.

4. Methodology

4.1. Research Design: The current study followed descriptive research design and as data has been gathered only once from a group of individuals, so it is a part of single cross sectional research design.

4.2. Measurement and Scaling: Likert type scale is convenient to understand as well as fit for personal, electronic and mail interviews (Malhotra & Das, 2017). In line with previous studies, a Likert type scale has been used, ranging from 1 (Strongly disagree) to 7 (Strongly agree) (Lee, 2009; Kesharwani & Bisht, 2012; Lu et al., 2005).

4.3. Data Collection and Analysis: Both the primary and secondary data have been used for the study purpose. Survey approach has been followed for collecting primary data (Anderson & Sullivan, 1993; Ranaweera & Neely, 2003). Collected data were then analyzed by using AMOS 16 software. Structural equation modeling (SEM) has been used for analyzing the data because SEM can measure the causal relationships between constructs with multiple measurement items (Hair, Black, Babin & Anderson, 2010a).

4.4. Sampling: Employees of banks were the target population for the study. At least a size of 100 samples is required for performing confirmatory factor analysis (CFA) as stated by Gorsuch (1983) and Kline (1979) (MacCallum, Widaman, Zhang & Hong, 1999). Among the disbursed 320 questionnaires to target population only 192 usable responses have yielded. In this regard, a probabilistic sampling strategy has been adopted (Yiu et al., 2007). The size of the sample may look small but not unusual when survey is conducted on any South-East Asian countries (Harzing, 2000; Zhao, Flynn, & Roth, 2006). Besides, the current sample size is analogous to other studies (Akhlaq & Ahmed, 2013; Munoz-Leiva, Climent-Climent & Liébana-Cabanillas, 2017).

4.5. Instrument and Measures: Questionnaire, frequently used types of instrument was used for data collection (Hair, Bush & Ortinau, 2003). Questionnaire had two parts. First part was used to collect basic information regarding respondents' characteristics like age, gender, education, occupational designation and usage experience of internet banking (Lee, 2009). The second part contained the items regarding the constructs namely perceived usefulness, perceived ease of use, facilitating conditions, personal innovativeness, perceived risk and attitude towards adoption. Table I shows number of items used to measure each construct along with their sources.

Table 1 : Constructs, number of measure items and items' sources.

Constructs	Items	Sources
Perceived Usefulness (PU)	4	Cheng, Lam & Yeung (2006)
Perceived Ease of Use (PEU)	3	Cheng et al. (2006)
Facilitating Conditions (FC)	4	Venkatesh et al. (2012)
Personal Innovativeness (PI)	3	Agarwal & Prasad (1998)
Perceived Risk (PR)	4	Featherman & Pavlou (2003)
Attitude (ATT)	4	Cheng et al. (2006)

(Source: Authors' Compilation)

5. Analysis and Results:

Table 2 : Demographic profile of the respondents.

	Items	Frequency	Valid Percentage
Age	25-29	65	33.9
	30-34	53	27.6
	35-39	40	20.8
	40-44	32	16.7
	45+	2	1.0
	Total	192	100.0
Occupational Designation	Manager	28	14.6
	Executive Officer	48	25.0
	Officer	85	44.3
	Others	31	16.1
	Total	192	100.0
Education Level	SSC	3	1.6
	HSC	14	7.3
	Graduate	88	45.8
	Post Graduate	84	43.8
	Above Post Graduate	3	1.6
	Total	192	100.0
Gender	Male	148	77.1
	Female	44	22.9
	Total	192	100.0
Years Using Internet Banking	<1 year	44	22.9
	1-3 years	72	37.5
	3-5 years	51	26.6
	>5 years	25	13.0
	Total	192	100.0

(Source: Authors' Calculations)

Two-step procedure has been followed for analyzing the data as suggested by Anderson & Gerbing (1988) namely measurement model and structural model.

5.1 Measurement model

Measurement model assessed construct reliability, convergent validity, and discriminant validity. The analysis started with 22 items of 6 constructs. After estimating measurement model, 1 item (PU2) of perceived usefulness and 1 item (ATT1) of attitude were dropped due to having poor factor loadings ($<.70$). Though Hair, Black, Babin, Anderson & Tatham (2010b) posited acceptable threshold for standardized factor loadings is .50, still cutoff criterion of .70 were used because a factor loading value of .70 or more facilitate achieving convergent validity (Malhotra & Das, 2017).

As of Table 3, all the constructs have composite reliability (CR) and Cronbach's alpha () greater than 0.7, satisfying the criteria for constructs' reliability (Straub, 1989).

Besides, factor loadings () range from .728 to .990, composite reliability ranges from .823 to .984 and average variance explained ranges from .609 to .937 (Table 3). All of these values are well above the cut-off value for meeting the conditions of convergent validity of measurement scales as suggested by Fornell & Larcker (1981) and Hair et al. (2010b).

Discriminant validity was assessed using Fornell and Larcker (1981) criteria. According to them, the square root of the average variance extracted by constructs should be greater than the correlation coefficients between those constructs for adequate discriminant validity. Table 4 is the correlation matrix of constructs, where non-diagonal elements represent correlation among constructs and diagonal elements represent square root of average variance extracted by that construct. Therefore, Table 4 indicates that all six factors are different from each other as well as all diagonal elements exceed inter-construct correlation coefficients satisfying Fornell Larcker (1981) criteria for discriminant validity.

Table 3 : Construct reliability and convergent validity.

Construct/Indicator	Item	Factor loading	Composite reliability (CR)	Average variance extracted (AVE)	Cronbach's alpha
Perceived Usefulness	PU1	.906	.913	.780	.906
	PU3	.734			
	PU4	.990			
Perceived Ease of Use	PEU1	.809	.838	.633	.837
	PEU2	.846			
	PEU3	.728			
Facilitating Conditions	FC1	.949	.984	.937	.984
	FC2	.945			
	FC3	.988			
	FC4	.990			
Personal Innovativeness	PI1	.757	.867	.686	.865
	PI2	.852			
	PI3	.872			
Attitude	ATT2	.743	.823	.609	.818
	ATT3	.855			
	ATT4	.737			
Perceived Risk	PR1	.918	.951	.829	.950
	PR2	.900			
	PR3	.922			
	PR4	.902			

(*All factor loadings () are significant at $p < 0.001$)

(Source: Authors' Calculations)

Table 4 : Square root of AVE (in bold on diagonal) and constructs correlation coefficients.

	Mean	SD	Perceived Risk	Attitude	Personal Innovativeness	Facilitating Conditions	Perceived Ease of Use	Perceived Usefulness
Perceived Risk	4.716	1.537	.910					
Attitude	5.639	1.192	-.240	780				
Personal Innovativeness	5.042	1.424	-.202	.455	.828			
Facilitating Conditions	5.540	1.292	.416	.290	.202	.968		
Perceived Ease of Use	5.247	1.203	-.022	.331	.375	.031	.796	
Perceived Usefulness	5.898	1.060	-.123	.592	.460	.287	.306	.883

*SD= Standard Deviation.

(Source: Authors' Calculations)

The overall goodness of fit of measurement model was evaluated through different model fit indices represented in Table 5.

Table 5 : Goodness-of-fit indicators in the measurement model.

Model fit indices	Results	Recommended value
χ^2/df	2.075 ($\chi^2=321.7$, df=155)	3.0 (Hair et al., 2010a)
GFI	.870	0.9 (Hair et al., 2010a)
AGFI	.824	0.8 (Hair et al., 2010a)
CFI	.956	0.9 (Hair et al., 2010a)
RFI	.900	0.9 (Bagozzi, Yi & Phillips, 1991)
NFI	.918	0.9 (Malhotra and Das, 2017)
TLI	.946	0.9 (Malhotra and Das, 2017)
RMSEA	.075	0.08 (Hair, Black, Babin & Anderson, 2014)
SRMR	.042	0.08 (Hair et al., 2014)

(Source: Authors' Calculations)

Notes: GFI, goodness-of-fit index; AGFI, adjusted goodness-of-fit index; CFI, comparative fit index; RFI, relative fit index; NFI, normed fit index; TLI, Tucker-Lewis index; RMSEA, root mean square error of approximation; SRMR, standardized root mean residual.

All the model fit indices except GFI are within the acceptable range suggesting satisfactory model fit of measurement model. GFI value was close to the recommended value. Besides, Malhotra & Das (2017) and Hair et al. (2014) claimed that both GFI and AGFI are sensitive to sample size. Therefore, they warned that usage of these indices as model fit indices has declined due to recent evolution of alternative fit indices.

5.2 Structural model

Having satisfactory measurement model the study further analyzed structural model as part of confirmatory factory analysis (CFA). As with value of goodness of fit indices presented in Table 6, the proposed model was found to fit the data.

Table 6 : Goodness-of-fit indicators in the structural model.

Model fit indices	Results	Recommended value
χ^2/df	2.075 ($\chi^2=321.7$, df=155)	3.0 (Hair et al., 2010a)
GFI	.870	0.9 (Hair et al., 2010a)
AGFI	.824	0.8 (Hair et al., 2010a)
CFI	.956	0.9 (Hair et al., 2010a)
RFI	.900	0.9 (Bagozzi et al.,)
NFI	.918	0.9 (Malhotra & Das, 2017)
TLI	.946	0.9 (Malhotra & Das, 2017)
RMSEA	.075	0.08 (Hair et al., 2014)
SRMR	.042	0.08 (Hair et al., 2014)

(Source: Authors' Calculations)

Notes: GFI, goodness-of-fit index; AGFI, adjusted goodness-of-fit index; CFI, comparative fit index; RFI, relative fit index; NFI, normed fit index; TLI, Tucker-Lewis index; RMSEA, root mean square error of approximation; SRMR, standardized root mean residual.

Findings of the structural models found H₁, H₂, H₃ and H₅ to be significant whereas, H₄ was found to be insignificant. Fig 2 represents the structural model and path coefficients.

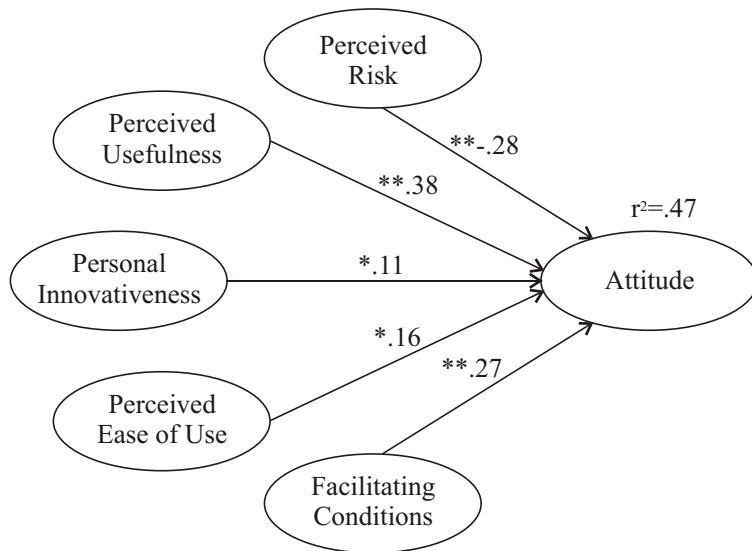


Figure 2 : Results of structural modeling analysis
(Source: Authors' Calculations)

Fig 2 shows that the predictors in the model explain a 47% ($r^2=.47$) of variation in attitude. Perceived usefulness was found as significant and positive predictor of attitude towards internet banking adoption with highest coefficient ($\beta=.38, p<.001$) which was subsequently followed by facilitating conditions ($\beta=.27, p<.001$) and perceived ease of use ($\beta=.16, p<.05$). The path coefficient from personal innovativeness to attitude was found insignificant ($\beta=.11, p>.05$) therefore not supporting the H₄. Whereas, as hypothesized perceived risk was found as the significant and negative predictor ($\beta=-.28, p<.001$) of attitude.

6. Discussions

The study set out to investigate the factors predicting attitude towards internet banking adoption from employee perspective. As for that objective, the findings of the study suggest that the predictors clearly explain the employees' attitude towards internet banking adoption. This is in line with previous findings that investigated internet banking adoption from customer's point of view.

The result showed perceived usefulness has significant and positive ($\beta=.38, p<.001$) impact on attitude which is consistent with earlier studies (Yiu et al., 2007; Lee, 2009; Kesharwani & Bisht, 2012). The same is also true for facilitating conditions ($\beta=.27, p<.001$) which is partially in line with Baptista and Oliveira (2015) and perceived ease of use ($\beta=.16, p<.05$) which conforms the findings of Yiu et al. (2007).

Contrary to hypothesis, the empirical data failed to find significant effect of personal innovativeness on attitude ($p=.199$). Earlier Lu et al. (2005) also found insignificant influence of personal innovativeness on intention to adopt wireless internet services. Possible explanation for this result might be that in some cases people make decision to adopt internet technology based on its reasonableness rather than sheer curiosity (Lu et al., 2005). Besides, most of cases employees of banks have to maintain their banking activities through internet technology because it's just the way it is. Therefore, they don't feel any essence to think about their innovativeness in most cases.

As for the impact of perceived risk it was found that perceived risk negatively influence attitude towards adoption of internet banking ($\beta =-.28$, $p<.001$) which corresponds to earlier studies (Kesharwani & Bisht, 2012; Featherman, & Pavlou, 2003).

7. Theoretical and Practical Implications

Most of the earlier researches on internet banking focused on customer's point of view. But an important player of internet banking services is the employee of respective banks. If they are convinced of its usefulness and timely provided with required facilitating conditions then attitude towards internet banking adoption will be more affirmative. In this regard, the findings of this study will come in handy as it clearly investigated the antecedents of employee attitude towards internet banking adoption.

Theoretically, current study contributed to existing literatures on adoption of internet banking by incorporating constructs from traditional Technology Acceptance Model (TAM) (Davis et al., 1989) and Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) along with personal innovativeness and perceived risk to investigate a model on a different set of sample.

Now-a-days there is no scope of running away from technological adoption but the adoption process gets easy if the implementer got every resistant point covered. To do so, identifying the antecedents of adoption process is crucial and that was the main concern of current study. So practically, the findings will help policy makers of banking organizations to think about internet banking adoption from employees' point of view which will result in arranging more training and knowledge sharing programs as well as timely support services for minimizing risks.

8. Limitations and future research directions

Generalizing the results of current study should be done cautiously as the study used a small sample with cross-sectional design. A future research should include a large sample following different sampling technique. Moreover, instead of using cross-sectional design a longitudinal study in future research will facilitate data collection in different time periods and contrast among them thus providing more insights.

Adjusting the model to include moderating role of employees' demographic characteristics like age, gender and experience with the technology (Venkatesh et al., 2012) can be of a good examination.

Moreover cultural issues, government legislations along with the advancement in information technology sector vary from country to country. That's why inclusion of those as predictors/moderators in the model in future research will enrich the research findings.

9. Conclusion

The Internet banking is now regarded as more of a norm rather than an exception in many developed countries because it is the cheapest way of providing banking services. Cost efficiency, geographical reach, easy-to-use application, streamlined functionality, access to accurate information, speed and flexibility- all of these factors are creating positive attitude towards the adoption of internet banking services by customers and employees as well. On the contrary, several factors such as perceived risk, lack of efficient use of IT network, low-level of computer literacy etc act as barriers to the intention to adopt internet banking. Therefore, a sound IT infrastructure, facilitating conditions like IT training to improve employees' efficiency and IT security and governance will enhance the positive experiences of internet banking services and set pace for next generation internet banking in Bangladesh.

References

Agarwal, R., & Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information Systems Research*, 9 (2), 204215.

Ahmed, F., & Islam, M. T. (2008). E-banking: performance, problems and potentials in Bangladesh, *Business Review*, 6(1), 2028.

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.

Akhlaq, A. & Ahmed, E. (2013). The effect of motivation on trust in the acceptance of internet banking in a low income country, *International Journal of Bank Marketing*, 31 (2), 115-125.

Anderson, E.W. & Sullivan, M.W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing Science*, 12 (2), 125-43.

Anderson, J. C., & Gerbing, D.W. (1988). Structural equation modeling in practice: a review and recommended two step approach. *Psychological Bulletin*, 49, 411-423.

Bagozzi, R. P., Yi, Y., & Phillips, L. W. (1991). Assessing construct validity in organizational research. *Administrative Science Quarterly*, 36(3), 421-430.

Baptista, G., & Oliveira, T. (2015). Understanding mobile banking: The unified theory of acceptance and use of technology combined with cultural moderators, *Computers in Human Behavior*, 50, 418-430.

Chau, P.Y.K. (1996). An empirical assessment of a modified technology acceptance model. *Journal of Management Information Systems*, 13 (2), 185-204.

Chen, Y. H., & Barnes, S. (2007). Initial trust and online buyer behaviour. *Industrial Management & Data Systems*, 107(1), 21-36.

Cheng, T. C. E., Lam, D.Y.C., & Yeung, A.C.L. (2006). Adoption of internet banking: an empirical study in Hong Kong. *Decision Support Systems*, 42(3), 1558-1572.

Cunningham, S. (1967). The major dimensions of perceived risk. In: D. Cox (Ed.), *Risk Taking and Information Handling in Consumer Behavior* (82-111). Harvard University Press, Cambridge, MA.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-339.

Davis, F. D., Bagozzi, R. P. & Warshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management Science*, 35(8), 982-1003.

Dowling, G., & Staelin, R. (1994). A model of perceived risk and intended risk-handling activity. *Journal of Consumer Research*, 21, 119-134.

Eriksson, K., Kerem, K., & Nilsson, D. (2005). Customer acceptance of internet banking in Estonia. *International Journal of Bank Marketing*, 23 (2), 200-216.

Featherman, M. S., & Pavlou, P. A., (2003). Predicting e-services adoption: a perceived risk facets perspective. *International Journal of Human-Computer Studies*. 59 (2003), 451-474.

Featherman, M., & Fuller, M. (2003). Applying TAM to E-Services Adoption: The Moderating Role of Perceived Risk. Proceedings of the 36th Hawaii International Conference on System Sciences (HICSS-36). Big Island, HI, USA.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-47.

Gahtani, S.A. (2001). The applicability of TAM outside North America: an empirical test in the United Kingdom. *Information Resources Management Journal*, 2, 37-46.

Gefen, D., & Straub, D. (2000). The relative importance of perceived ease of use in IS adoption: a study of e-commerce adoption, *Journal of the Association for Information Systems*, 1(8), 1-28.

Gorsuch, R.L. (1983). Factor Analysis (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Grewal, D., Gotlieb, J., & Marmorstein, H. (1994). The moderating effects of message framing and source credibility on the price-perceived risk relationship. *Journal of Consumer Research* 21, 145-153.

Guritng, P., & Ndubisi, N. O. (2006). Borneo online banking: evaluating customer perceptions and behavioural intention. *Management Research News*, 29(1/2), 6-15.

Hair, J. F., Bush, R. P., & Ortinau, D. J. (2003). *Marketing research within a changing information environment* (2nd ed.). New York: McGrawHill.

Hair, J.F. Jr, Black, W.C., Babin, B.J. & Anderson, R.E. (2010a). *Multivariate Data Analysis* (7th ed.). Upper Saddle River, NJ: Prentice Hall.

Hair, J.F., Black, W.C., Babin, B. & Anderson, R.E. (2014). *Multivariate Data Analysis* (7th ed.). Edinburgh Gate Harlow: Pearson education ltd.

Hair, J.F., Black, W.C., Babin, B., Anderson, R.E. & Tatham, R.L. (2010b). *Multivariate Data Analysis*. Upper Saddle River, NJ: Prentice Hall.

Harzing, A.W. (2000). Cross-national industrial mail surveys: why do response rates differ between countries?. *Industrial Marketing Management*, 29(3), 243-254.

Hasan, A. S., Baten, M. A., Kamil, A. A., & Parveen, S. (2010). Adoption of e-banking in Bangladesh: an exploratory study. *African Journal of Business Management*, 4(13), 2718-2727.

Hernandez, J. M. C., & Mazzon, J. A. (2007). Adoption of internet banking: proposition and implementation of an integrated methodology approach. *International Journal of Bank Marketing*, 25 (2), 72-88.

Horst, M., Kutschreuter, M., & Gutteling, J. M. (2007). Perceived usefulness, personal experiences, risk perception and trust as determinants of adoption of e-government services in The Netherlands. *Computers in human behavior*, 23(4), 1838-1852.

Jahangir, N., & Begum, N. (2008). The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking. *African Journal of Business Management*, 2(1), 032-040.

Jaruwachirathanakul, B., & Fink, D. (2005). Internet banking adoption strategies for a developing country: the case of Thailand. *Internet Research*, 15(3), 295-311.

Jiang, J.J., Hsu, M.K., Klein, G., & Lin, B., (2000). E-commerce user behavior model: an empirical study. *Human Systems Management*, 19(4), 265-276.

Kesharwani, A., & Bisht, S. S. (2012). The impact of trust and perceived risk on internet banking adoption in India: An extension of technology acceptance model. *International Journal of Bank Marketing*, 30(4), 303-322.

Kline, P. (1979). *Psychometrics and Psychology*. London: Academic Press.

Kuusma, T., Laukkanen, T., & Hiltunen, M. (2007). Mapping the reasons for resistance to Internet banking: A means-end approach. *International Journal of Information Management*, 27(2), 75-85.

Lai, P. C., & Zainal, A. A. (2015). Perceived Risk As An Extension To TAM Model: Consumers' Intention To Use A Single Platform E-Payment. *Australian Journal of Basic and Applied Sciences*, 9(2), 323-331.

Lee, M. C. (2009). Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electronic Commerce Research and Applications*, 8(3), 130-141.

Lu, J., Yao, J., & Yu, C. (2005). Personal Innovativeness, Social Influences and Adoption of Wireless Internet Services via Mobile Technology. *The Journal of Strategic Information Systems*, 14(2005), 245-268.

MacCallum, R.C., Widaman, K.F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods*, 4(1), 84-99.

Malhotra, N. K. & Das, S. (2017). *Marketing Research: An Applied Orientation* (7th ed.). Pearson India Education Services Ltd. India.

Mathieson, K. (1991). Predicting user intentions: comparing the technology acceptance model with the theory of planned behaviour. *Information Systems Research*, 2(3), 173-191.

Munoz-Leiva, F., Climent-Climent, S., & Liébana-Cabanillas, F., (2017). Determinants of intention to use the mobile banking apps: An extension of the classic TAM model, *Spanish Journal of Marketing*, 21, 25-38.

Natarajan, T., Balasubramanian, S., & Manickavasagam, S. (2010). Customers choice amongst self service technology (SST). Channels in retail banking: a study using analytical hierarchy process (AHP). *Journal of Internet Banking and Commerce*, 15(2).

Oruç, O. E. & Tatar, C. (2016). An investigation of factors that affect internet banking usage based on structural equation modelling. *Computers in Human Behavior*. 66(2017), 232-235.

Pikkarainen, T., Pikkarainen, K., Karjaluo, H., & Pahnila, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. *Internet Research*, 14(3), 224-235.

Polatoglu, V. N., & Ekin, S. (2001). An empirical investigation of the Turkish consumers' acceptance of internet banking services. *International Journal of Bank Marketing*, 19(4), 156-165.

Rahman, M. M. (2007). *Innovative technology and bank profitability: the Bangladesh experience*. Working Paper No. 0803. Bangladesh Bank.

Ranaweera, C., & Neely, A. (2003). Some moderating effects on the service quality-customer retention link. *International Journal of Operations & Production Management*, 23 (2), 230-248.

Rogers, E. M. (1983). *Diffusion of Innovations* (4th ed.). New York, NY: The Free Press.

Rogers, E. M. (1962). *Diffusion of Innovations* (1st ed.). New York, NY: Free Press.

Rogers, E. M. (1995). *Diffusion of Innovations* (4th ed.). New York, NY: The Free Press.

Salehi, M. & Alipour, M. (2014). E-banking in emerging economy: empirical evidence of Iran. *International Journal of Economics and Finance*, 2(1), 201-209.

Siddik, N. A. et al. (2016). Impacts of E-banking on Performance of Banks in a Developing Economy: Empirical Evidence from Bangladesh. *Journal of Business Economics and Management*, 17(6), 1066-1080.

Smadi, M. A. O. (2012). Factors Affecting Adoption of Electronic Banking: An Analysis of the Perspectives of Banks' Customers. *International Journal of Business and Social Science*, 3 (17), 294-309.

Straub, D. (1989). Validating instruments in MIS research. *MIS Quarterly*, 13(2), 147-169.

Suh, B. & Han, I. (2002). Effect of trust on customer acceptance of internet banking. *Electronic Commerce Research and Applications*, 1 (3-4), 247-63.

Tan, M., & Teo, T. S. H. (2000). Factors influencing the adoption of internet banking. *Journal of the Association for Information Systems*, 1, 142.

Taylor, S., & Todd, P.A., (1995). Understanding information technology usage: a test of competing models. *Information Systems Research*, 6(2), 144-174.

Venkatesh, V. & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, 39(2), 273-315.

Venkatesh, V. (2000). Determinants of perceived ease of use: integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research*, 4(4), 342-365.

Venkatesh, V., & Davis, F. D. (1996). A model of the antecedents of perceived ease of use: development and test. *Decision Sciences*, 27(3), 451-481.

Venkatesh, V., & Davis, F.D. (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science*, 46 (2), 186-204.

Venkatesh, V., & Morris, M.G. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. *MIS Quarterly* 24(1), 115-140.

Venkatesh, V., Morris, M. G., Hall, M., Davis, G. B., Davis, F. D., & Walton, S. M. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478.

Venkatesh, V., Thong, J.Y. L., & Xu, X., (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36 (1), 157-178.

Wang, Y., Wang, Y., Lin, H., & Tang, T. (2003). Determinants of user acceptance of internet banking: an empirical study. *International Journal of Service Industry Management*, 14(5), 501-519.

Yiu, C. S., Grant, K., & Edgar, D. (2007). Factors affecting the adoption of Internet Banking in Hong Kong--implications for the banking sector. *International Journal of Information Management*, 27(5), 336-351.

Yusoff, Y.M., Muhammad, Z., Zahari, M.S.M., Pasah, E.S. & Robert, E. (2009). Individual differences, perceived ease of use and perceived usefulness in the e-library usage. *Computer and Information Science*, 2(1), 76-83.

Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2002). Service quality delivery through Web sites: a critical review of extant knowledge. *Journal of the Academy of Marketing Science*, 30(4), 362-375.

Zhang, L., Zhu, J., & Liu, Q. (2012). A meta-analysis of mobile commerce adoption and the moderating effect of culture. *Computers in Human Behavior*, 28, 1902-1911.

Zhao, X., Flynn, B. B., & Roth, A. V. (2006). Decision sciences research in China: a critical review and research agenda foundations and overview. *Decision Sciences*, 37(4), 451-496.

Appendix 01 : Questionnaire

Age: [a] 25-29 [b] 30-34 [c] 35-39 [d] 40-50 [e] 50+

Gender: [a] Female [b] Male

Education level: [a] SSC [b] HSC [c] Graduate [d] Post Graduate [e] Above Post Graduate

Designation: [a] Manager [b] Executive officer [c] Officer [d] Others

Years using internet banking: [a] Less than 1 year [b] 1-3 years [c] 3-5 years [d] More than 5 years

1. Perceived usefulness

PU1 I think that using the online banking would enable me to accomplish the banking tasks more quickly.

PU2 I think that using the online banking would make it easier for me to carry out banking tasks.

PU3 I think the online banking is useful.

PU4 Overall, I think that using the online banking is advantageous.

2. Perceived ease of use

PEU1 I think that learning to use online banking would be easy.

PEU2 I think that interaction with online banking does not require a lot of mental effort.

PEU3 I think that it is easy to use online banking to accomplish my banking tasks.

3. Facilitating conditions

FC1 I have the resources necessary to use Online banking activities.

FC2 I have the knowledge necessary to use Online banking activities.

FC3 Online banking is compatible with other technologies I use.

FC4 I can get help from others when I have difficulties using Online banking activities.

4. Personal Innovativeness

PI1 I like to experiment with new information technologies.

PI2 When I hear about a new information technology, I look forward to examining it.

PI3 Among my colleagues, I am usually the first to try out a new innovation in technology.

5. Perceived Risk

PR1 Online banking servers may not perform well because of slow download speeds, the servers' being down or because the web site is undergoing maintenance.

PR2 Online banking servers may not perform well and process payments incorrectly.

PR3 Using online banking service would lead to a loss of convenience of me because I would have to waste a lot of time fixing payments errors.

PR4 It would take me lots of time to learn how to use online banking services.

6. Attitude

ATT1 I think that using online banking is a good idea.

ATT2 I think that using online banking for financial transactions would be a wise idea.

ATT3 I think that using online banking is pleasant.

ATT4 In my opinion, it is desirable to use online banking.