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UNDERSTANDING INTERNET BANKING USE IN BANGLADESH: THE ROLE OF INTERNET BANKING APPS, CUSTOMERS' PERCEPTIONS AND GREEN CONCERN

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ABSTRACT

Keywords:

Green Concern,
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JEL Codes:

M31, M39

The purpose of this study is to examine the effects of Internet banking apps, perceived usefulness, perceived security, perceived ease of use, and green concern on Internet banking use. A self-ordered questionnaire was developed and administered to a simple random sample of 300 respondents. Factor analysis, Pearson correlation, and Multiple regression analysis were used to analyze data. The findings of this research indicated that all factors, namely Internet banking apps, perceived usefulness, perceived security, seen the ease of use, and green concern, have a significant impact on Internet banking use. More specifically, Internet banking apps and perceived usefulness have more influence on Internet banking use. As this study introduced relatively two new factors, namely Internet banking apps and green concern in the context of Internet banking, further investigation of these two factors in different settings seems worthwhile. However, this study confirms the importance of these factors in using Internet banking in Bangladesh and also provides insights for bankers to understand the interest of consumers on Internet banking use.

BANGLADEŞ'TE İNTERNET BANKACILIĞI KULLANIMINI ANLAMAK: İNTERNET BANKACILIĞI UYGULAMALARININ ROLÜ, MÜŞTERİLERİN ALGILARI VE YEŞİL ENDİŞE

ÖZ

Anahtar Kelimeler:

Yeşil Endişe,

İnternet Bankacılığı
Uygulamaları,

Bangladeş

JEL Kodları:

M31, M39

Bu çalışmanın amacı, İnternet bankacılığı uygulamalarının, algılanan kullanışlılığın, algılanan güvenlik, algılanan kullanım kolaylığı ve yeşil kaygıların İnternet bankacılığı kullanımı üzerindeki etkilerini incelemektir. Kendi kendine sıralanan bir anket geliştirildi ve 300 katılımcıdan oluşan basit bir rastgele örneğe uygulandı. Verilerin analizinde faktör analizi, Pearson korelasyonu ve Çoklu regresyon analizi kullanılmıştır. Bu araştırmanın bulguları, İnternet bankacılığı uygulamaları, algılanan kullanışlılık, algılanan güvenlik, algılanan kullanım kolaylığı ve yeşil kaygı gibi tüm faktörlerin İnternet bankacılığı kullanımı üzerinde önemli bir etkiye sahip olduğunu göstermiştir. Daha spesifik olarak, İnternet bankacılığı uygulamaları ve algılanan yararlılığın İnternet bankacılığı kullanımı üzerinde daha fazla etkisi vardır. Bu çalışma, İnternet bankacılığı uygulamaları ve internet bankacılığı bağlamında yeşil kaygı gibi nispeten iki yeni faktör ortaya çıkardığından, bu iki faktörün farklı ortamlarda daha fazla araştırılması faydalı görünmektedir. Ancak bu çalışma, Bangladeş'te İnternet bankacılığı kullanımında bu faktörlerin önemini teyit etmekte ve ayrıca bankacılara İnternet bankacılığı kullanımında bu tüketicilerin ilgisini anlamalarını sağlamaktadır.

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1. INTRODUCTION

The flourished development of information technology has an important implication in the banking field (Yoon & Steege, 2013; Dootson, Beatson, & Drennan, 2016). Notably, Internet banking (IB) is engaging customers more in banking practice than traditional banking by ensuring security and faster working activities. According to Amin (2016), IB means interconnecting customers in banking practice through network technology. There are several types of benefits in Internet banking like time-saving, cost reduction, various banking, user friendly, and convenience for both bankers and customers. Now, banks are enjoying cost reduction benefits, whereas customers are getting access 24/7 hours a week (Xue, Hitt, & Chen, 2011). Internet banking practice is considered as eco-friendly banking practice (Yoon & Steege, 2013). Indeed, ecologically sound program relays on the eco-friendly method (Han, Hsu, & Sheu, 2010). An example of Eco-friendly banking practice could be like accepting banking statements through e-mail instead of accepting paper banking statements, which is one of the ways of protecting the environment.

At the time of 60s and 70s, green consumption idea was introduced to protect the environment and health from the pollutions. This idea was inaugurated in the American market with a new “green” brand in 1980. However, at the beginning of the twenty-first century, the term ‘green’ has got its momentum. The name “Green” states about social, ethical, and environmental dimensions (Ullah, 2013). At present, the green attitude has a meaningful impact on environmental sustainability and the implications for traditional banking practice. In this regard, Sudhalakshmi and Chinnadorai (2014) posited that green banking assists in reducing carbon outflow and internal carbon footprint.

In Bangladesh, more than half of the population is now using the Internet (Anonymous, 2019). Besides, the green concept has been incorporated by the banking sector of Bangladesh. By taking advantage of technological innovation and converging it with green banking practices, Bangladesh Bank formulated rules and regulations for the implementation of green banking practices with regular banking activities (Bangladesh Bank, 2011). Nowadays, Green banking is not only taking initiatives of advancement but also making a positive impact on other businesses as well (Islam & Das, 2013). However, it is an issue of concern that a review of existing studies (Alam, Khatibi, Santhapparaj, & Talha, 2007; Ali, 2010; Hasan, Azizul Baten, Kamil, & Parveen, 2010; Islam & Das, 2013; Masukujjaman & Aktar, 2013; Nupur, 2010; Sagib & Zapan, 2014; Shampa & Jobaid, 2017; Siddik, Sun, Kabiraj, Shanmugan, & Yanjuan, 2016; Ullah, 2013) conducted in the context of Bangladesh

revealed no proof of discussion on Internet banking use through the lens of customer's green concern as well as usage of Internet banking apps. Hence, filling up this gap is the primary focus of this study.

2. LITERATURE REVIEW

Technological revolution accelerates today's banking activities; thus, Internet banking plays a significant role in terms of banking activities. Consumers use Internet banking for conducting banking transactions, paying bills, transferring money between accounts, online purchasing (Yoon & Steege, 2013). The use of Internet banking is the best way to meet the customers' needs and to make a good understanding between service users and service providers (Baba, 2012). Moreover, Internet banking use plays a significant role in cutting down fixed costs and operating costs (Chen, Hsiao, & Hwang, 2012).

However, Internet banking users have usually encircled with security problems as well as the benefits of paperless tasks of Internet banking. This information can act as a decisive role in making a decision (Yoon & Steege, 2013). With the advancement of technology, at present, mobile app service is also facilitating Internet banking use (Lee, Tsao, & Chang, 2015). Previously, studies that focused on the adoption of Internet banking and intention to use Internet banking investigated several influential factors of Internet banking use (Amin, 2016; Marafon, Basso, Espartel, de Barcellos, & Rech, 2018; Marakarkandy, Yajnik, & Dasgupta, 2017; Moon & Kim, 2001; Yoon & Steege, 2013). In this context, a table (Table 1) containing a summary of reviewed literature has been given below.

Table 1. A Short Summary of Reviewed Literature

Sl. No.	Authors	Title	Factors Used in the Study
1.	Yoon and Steege (2013)	Development of a quantitative model of the impact of customers' personality and perceptions on Internet banking use	Openness, perceived usefulness, perceived ease of use, perceived security concern, social influence, and Internet banking use.
2.	Marafon et al. (2018)	Perceived Risk and Intention to Use Internet Banking: The Effects of Self-Confidence and Risk Acceptance	Acceptance of risk, self-confidence, perception of risk, and intention to use Internet banking.
3.	Cruz, Neto, Muñoz-Gallego, and Laukkanen (2010)	Mobile banking rollout in emerging markets: Evidence from Brazil	Cost, Lack of relative advantage, Perceived risk, Unsuitable device, Complexity, Lack of information, Lack of observability.
4.	Leon (2018)	Service mobile apps: a millennial generation perspective	Information Quality, Self Efficacy, Perceived Usefulness, Perceived Ease of Use, Intention, and Attitude.
5.	Moon and Kim (2001)	Extending the TAM for a World-Wide-Web context	Perceived playfulness, Perceived usefulness, Perceive ease of use, attitude toward using, Behavioral intention to use, and Actual use.
6.	Ullah (2013)	Green Banking in Bangladesh- A Comparative Analysis	Environmental Adoption, Online Banking, ATM Facilities, Mobile Banking, and Green Financing.
7.	Shampa and Jobaid (2017)	Factors Influencing Customers' Expectation Towards Green Banking Practices in Bangladesh	Green Financial Products and Services, Internet Banking, Commitment to Energy Savings, Economic Factors, Compliance with Environmental and Ethical Regulation and Eco-friendly Technology
8.	Sagib and Zapan (2014)	Bangladeshi mobile banking service quality and customer satisfaction and loyalty	Reliability and Responsiveness, Assurance and Security, Convenience of Location, Efficiency, Easiness to Operate, Customer Satisfaction and Customer Retention
9.	Nupur (2010)	E-Banking and Customers' Satisfaction in Bangladesh: An Analysis	Reliability, Responsiveness, Assurance, Empathy, Tangibles and Customer Satisfaction

Source: Authors' Compilation

Though researchers investigated on rolling out of mobile devices and adoption of mobile application in banking sector (Chaouali, Souiden, & Ladhari, 2017; Cruz et al., 2010; Watson, McCarthy, & Rowley, 2013), factors like green concern and Internet banking apps for predicting Internet banking use are yet to be introduced, especially in the context of Bangladesh.

However, since its introduction technology acceptance model (TAM) (Davis, Bagozzi, & Warshaw, 1989) has been adopted in its original form or extended form in different aspects of information technology adoption apart from Internet banking (Cheng, Lam, & Yeung, 2006; Lee, 2009; Liao & Cheung, 2008; Yoon & Steege, 2013). Therefore, the current study adopted perceived usefulness and perceived ease of use factors from the technology acceptance model (TAM). Besides, over the last six years, 3,659 cyber-crime cases have been filled (Sarwar, 2019), as well as more recently, three local private banks have become the victims of significant cyber-attacks in Bangladesh (Rahman, 2019). These incidents raise security concerns in using Internet banking services. Thus, in addition to the green concern and Internet banking apps, perceived security is added to the classical TAM as predictors of Internet banking use.

2.1. Internet Banking Apps and Internet Banking Use

Internet connection, at present, assists in getting access to personal and business information efficiently, and innovations of mobile technology accelerate it (Cruz et al., 2010). Nowadays, advanced mobile devices (e.g., cell phones, PDAs, Android smartphone) and mobile applications are playing a meaningful role in mobile marketing as unfolded by Watson et al. (2013). Consumers are very much comfortable with the use of mobile apps for their daily tasks. International Data Corporation reported that mobile devices users around the world installed about 156 billion mobile apps on their devices, and this figure is expected to cross 210 billion in 2020 (Leon, 2018). This massive surge in usage of mobile apps is primarily affected by the company's more reliance on apps to provide services to customers at their convenient location and time. In recent years, banking activities through banking applications on cell phones has increased a lot (Sampaio, Ladeira, & Santini, 2017). At present, in Bangladesh, top five Internet banking apps are city touch offered by City Bank, EBL SKYBANKING provided by Eastern Bank, MTB Smart Banking offered by Mutual Trust Bank, SC Mobile Banking provided by Standard Chartered Bank and BRAC BANK Mobile provided by BRAC Bank (Hossain, 2019). Since mobile devices are now a popular gateway to access information and get services, a mobile app for performing regular banking

activities can offer benefits for both bankers and customers. Sampaio et al. (2017) unfolded that security, ease-of-use, and convenience are the benefits of mobile banking apps that influence customer satisfaction. Juniper Research (2017) posits that globally around 2 billion mobile users will use their mobile app for banking transactions by the end of 2021 compared to 1.2 billion in 2016. These users will use their mobile apps to access their bank accounts as well as make regular transactions (Sampaio et al., 2017). Chaouali et al. (2017) examined that intention to adopt mobile banking is positively and significantly predisposed by attitude toward mobile banking adoption. Based on these reviews, authors hypothesized that Internet banking apps has a relationship with Internet banking use, and therefore following hypothesis has been proposed:

H₁: Internet banking apps positively influences Internet banking use.

2.2. Perceived Usefulness and Internet Banking Use

Davis (1989) unfolded that perceived usefulness is a degree to which a person believes that using a particular system would enhance his or her job performance. Perceived value is extensively used for predicting new technology adoption (Chin & Todd, 1995; Moon & Kim, 2001; Venkatesh & Morris, 2000). Besides, past studies revealed that perceived usefulness significantly contributes to the attitude toward Internet banking adoption (Marakarkandy et al., 2017; Sabbir & Jahan, 2018). Moon and Kim (2001) pointed out that individual attitude toward using technology depends on perceived usefulness. They also found that behavioural intention to use technology is primarily related to the position and perceived value. In this regard, Yoon and Steege (2013) posited that perceived usefulness has significant interaction with Internet banking use. Based on these arguments, the following hypothesis has been developed:

H₂: Perceived value positively influences Internet banking use.

2.3. Perceived Security and Internet Banking Use

Since an increased number of products and services are offered through the Internet, security issues are becoming a great concern nowadays. Perception of the perceived security of consumers has been recognized as a term related to the use of information technology devices and e-commerce, and it has a profound influence on the behaviour of consumers (Kim, Mirusmonov, & Lee, 2010; Lee, 2009). Perceived security is defined as a potential loss caused by fraud or a hacker compromising the security of an online bank user (Lee, 2009). Perceived safety has a substantial impact on consumer trust at the time of Internet purchasing,

as discovered by Cheung and Lee (2006). Yoon and Steege (2013) found that perceived security has an interaction with perceived usefulness and perceived ease of use.

Moreover, it was observed that perceived usefulness would be lower when seen security concern of consumer in the case of Internet banking use is higher. Besides, Folake (2014) opined that trust and security have a significant influence on consumer adoption of Internet banking. Yoon and Steege (2013) also found that perceived security concern negatively affects the use of Internet banking. Furthermore, Lee (2009) mentioned that security risk deters consumer adoption of online banking.

Littler and Melanthiou (2006) found that most of the consumers believe that there is a possibility of identity theft while using online banking services. When an unknown person gets access to profile a user, the financial information of the user may be at risk, which may cause considerable economic loss (Yoon & Steege, 2013). According to past studies (Grabner-Kräuter & Faullant, 2008; Howcroft, Hamilton, & Hewer, 2002; Kim et al., 2010; Lee, 2009; Rotchanakitumnuai & Speece, 2003; Treiblmaier, Pinterits, & Floh, 2004), security issues have been demonstrated as vital inhibitors to the use of online services. Based on these arguments, the following hypothesis has been developed:

H₃: Perceived security negatively influences Internet banking use.

2.4. Perceived Ease of Use and Internet Banking Use

Perceived ease of use is the degree to which a person believes that using a particular system would be free of effort (Davis, 1989). Previously, several studies used the perceived ease of use as a predictor of Internet banking use (Lee, 2009; Marakarkandy et al., 2017; Yoon & Steege, 2013). Karahanna, Straub, and Chervany (1999) discovered that there is a positive relationship between perceived ease of use and intention to use technologies. Yoon and Steege (2013) posited that Internet banking use is significantly determined by perceived ease of use and perceived usefulness. Perceived ease of use has also been found positively influential in Internet banking use (Marakarkandy et al., 2017) and intention to use new technologies (Moon & Kim, 2001). Based on this review, the following hypothesis has been developed:

H₄: Perceived ease of use positively influences Internet banking use.

2.5. Green Concern and Internet Banking Use

Concern for environment termed as environmentalism, and it has become a key discussion topic due to damage resulting from the excessive use of various disposable

products and environmentally unfriendly production processes (Easterling, Kenworthy, & Nemzoff, 1996). Therefore, people have become aware of the environmental crisis, and they consider various ecological and social issues when purchasing (Han, Hsu, & Lee, 2009). Nowadays, consumers identify the quality of products based on the environmental friendliness of the products (Creyer & Ross, 1997) and like to appraise how a company concern for the welfare of the consumer as well as society (Kang & James, 2007). Today, more people are willing to 'go green' to protect the environment, and this movement has extended worldwide because of increased awareness of living more healthily (Soyez, 2012; Suki, 2013; Thøgersen, de Barcellos, Perin, & Zhou, 2015). In this regard, Aman, Harun, and Hussein (2012) revealed that environmental concern and attitude have an impact on the green purchase intention of consumers. Previous studies showed that consumers' attitudes toward green behaviour have significant effects on their environmental knowledge and green product purchase intention (Aman et al., 2012; Barber, Taylor, & Strick, 2009; Flamm, 2009; Yadav & Pathak, 2016).

Previous studies also found that companies' green efforts play a significant role in increasing customer satisfaction, loyalty, trust, and attitude (Aman et al., 2012; Maignan & Ralston, 2002; Sen, Bhattacharya, & Korschun, 2006). Addressing this concern, now banks are also looking for ways to save the environment as well as resources and encouraging their customers to adopt the 'go green' concept at the time of using banking services. Therefore, the green concern of consumers has a meaningful impact not only on environmental sustainability but also on traditional banking practice. Yoon and Steege (2013) posited that accepting online statements instead of paper bank statements is one of the ways to protect the environment. In their study, Yoon and Steege (2013) posited an individual's green concern as a dimension of social influence that might positively affect the use of Internet banking; however, they did not find any significant relationship between green matter and Internet banking use. Therefore, in the current study setting authors' hypothesized that individual's concern for the environment will have a positive impact on Internet banking use and proposed the following hypothesis:

H₅: Green concern positively influences Internet banking use.

2.6. Conceptual Framework

The conceptual framework for this study is as follow:-

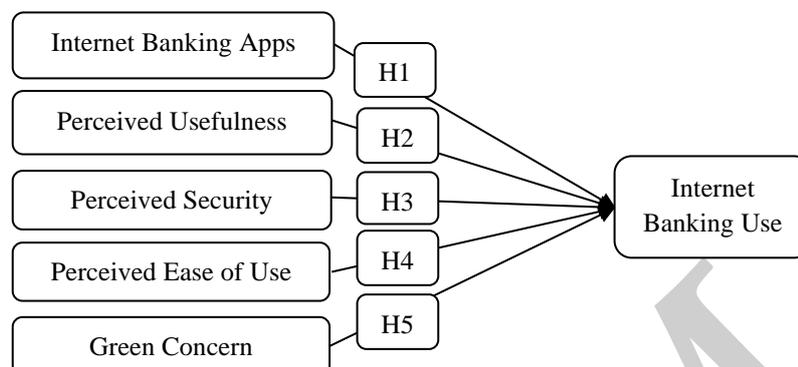


Figure 1. Proposed Model

3. PURPOSE OF THE STUDY

The specific objectives of this study are –

- i. To explore the impact of Internet banking apps, perceived usefulness, perceived ease of use, perceived security, and green concern on Internet banking use.
- ii. To provide a robust understanding of the strength of relationships among Internet banking apps, perceived usefulness, perceived ease of use, perceived security, green concern, and Internet banking use.
- iii. To provide some practical suggestions for policymakers regarding Internet banking use.

4. RESEARCH METHODOLOGY

4.1. Research Design

Since the study explores the impact of perceived usefulness, perceived ease of use, perceived security, Internet banking apps, and green concern on Internet Banking Use, descriptive research design has seemed appropriate for this study. Data has been gathered from a group of respondents only once, so it is a segment of single cross-sectional research design.

4.2. Measurement and Scaling

For scaling and measurement, a Likert type scale has been used, ranging from 1 to 7 (1=Strongly disagree, 2=Disagree, 3=Somewhat disagree, 4=Neutral, 5=Somewhat agree, 6=Agree, 7=Strongly Agree) (Han et al., 2010; Yoon & Steege, 2013).

4.3. Population and Sampling

Users of Internet banking are the target population for this study. Sampling units of this study consist of seven private commercial banks and two state-owned commercial banks located in the Dhaka metropolitan area. Dhaka metro area was selected as a sampling area because, with people from almost every region (Dhaka, 2019), this city is the financial and commercial capital of Bangladesh. As for the sampling frame, customer databases of selected banks were used. Besides, Tabachnick and Fidell (2013) and VanVoorhis and Morgan (2007) suggested that it is good to have at least 300 samples for factor analysis. Therefore, a sample size of 300 respondents was used for this study. As for the sampling technique, simple random sampling was used in the study (Boohene, Agyapong, & Gonu, 2013).

4.4. Data Collection and Analysis

For this study, both the primary and secondary sources of data were used. In line with past studies (Marafon et al., 2018; Yoon & Steege, 2013), the survey technique was employed to collect primary data. Secondary data were collected from published books, journals, research papers, and thesis papers. The collected data were analyzed using factor analysis, Pearson correlation, and multiple regression analysis using the statistical analysis tool SPSS.

4.5. Instruments and Measures

Items must be stated about which judgments are to be made, ascertaining the subject-matter validity (Kerlinger & Lee, 2000). In this study, subjects were adapted from prior studies to ensure content validity (see *Table 2*). Adopted items were modified in some cases considering the current study's context. A survey was conducted using a structured questionnaire. A total of 22 subjects were included under six constructs of the proposed model.

Table 2. Number of Items and Its Sources

Constructs	No. of Items	Sources
Internet Banking Apps (IBA)	03	Lee et al. (2015)
Perceived Usefulness (PU)	04	Yoon and Steege (2013)
Perceived Ease of Use (PEU)	03	Yoon and Steege (2013)
Perceived Security (PS)	04	Yoon and Steege (2013)
Green concern (GC)	04	Wu, Wu, and Chang (2016)
Internet Banking Use (IBU)	04	Moon and Kim (2001)

5. ANALYSIS AND FINDINGS

5.1. Respondents' Demographics

The synopsis on the distribution of the sample was tabulated in Table 3. The total number of respondents was 300. The gender distribution of the respondents was 60.00% males and 40.00% females, and they were aged between 15 to over 39 years old. As seen in

Table 3, most of the respondents were aged twenty-one to twenty-six (36.30%). The majority of the respondents were graduates (37.70%), and postgraduates were (33.30%). There are 65.30% of the respondents who were students, and job holders constitute 33.30% of the total respondents, and the rest of them were businessmen (1.00%) and housewives (0.30%). 59.70% of the respondents earning monthly income was between BDT (Bangladeshi Taka) 5,000-15,000, and only 7.30% of the respondents' monthly income was above BDT 40,000.

Table 3. Profile of the Respondents

		Frequency	Percentage
Gender	Male	180	60.00
	Female	120	40.00
	Total	300	100
Age	15-20	90	30.00
	21-26	109	36.30
	27-38	78	26.00
	Over 39	23	7.70
	Total	300	100
Education	Higher Secondary	87	29.00
	Graduate	113	37.70
	Post Graduate	100	33.30
	Total	300	100
Occupation	Businessman	3	1.00
	Job Holder	100	33.30
	Student	196	65.30
	Housewife	1	0.30
	Total	300	100
Income (Monthly)	5,000-15,000 (BDT)	179	59.70
	16,000-2,5000 (BDT)	21	7.00
	26,000-40,000 (BDT)	78	26.00
	Above 40,000 (BDT)	22	7.30
	Total	300	100

5.2. Exploratory Factor Analysis

Exploratory factor analysis was conducted to illustrate the reliability and validity of the measured items.

Table 4. KMO and Bartlett's Test for EFA

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.825
Bartlett's Test of Sphericity	Approx. Chi-Square	6618.853
	Df	231
	Sig.	.000

Values of the KMO (Kaiser-Meyer-Olkin) index and Bartlett's Test of Sphericity (see Table 4) specify the appropriateness of factor analysis for collected data (Kaiser, 1974).

Table 5. Result of Exploratory Factor Analysis

Construct/Indicator	Item	Factor loading	Eigenvalue	Percentage of explained variance	Cronbach's alpha α
Green concern	GC1	.904	6.368	28.944	.979
	GC2	.894			
	GC3	.916			
Perceived Security	PS1	.895	5.487	24.940	.958
	PS2	.887			
	PS3	.883			
	PS4	.903			
Perceived Usefulness	PU1	.852	2.073	9.422	.884
	PU2	.772			
	PU3	.814			
	PU4	.831			
Internet Banking Use	IBU1	.714	1.631	7.415	.875
	IBU2	.869			
	IBU3	.748			
	IBU4	.843			
Internet Banking Apps	IBA1	.817	1.429	6.496	.874
	IBA2	.860			
	IBA3	.847			
Perceived Ease of Use	PEU1	.780	1.141	5.186	.854
	PEU2	.791			
	PEU3	.795			

*Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.*

Table 5 illustrates the factor loadings of measured items. Following the suggestion of Hair, Black, Babin, and Anderson (2014), a cut-off score of .70 was used for factor loadings as this score indicates a distinct factor structure. The analysis estimated six factors that were named according to the loaded items on that particular factor. The estimated six factors cumulatively explained 82 per cent of the variance. Besides, Cronbach's alpha ranges from .854 to .979 (Table 5), which are well above the accepted rule of thumb (Nunnally, 1978).

5.3. Pearson Correlation

The outputs from factor analysis were used as input of the Pearson correlation. Table 6 shows a significant correlation among factors. Among the relationships, perceived usefulness ($r = .488$), has the highest correlation with Internet banking use. This is subsequently followed by Internet banking apps ($r = .459$), perceived ease of use ($r = .303$), green concern ($r = .226$) and perceived security ($r = -.120$). Except for perceived security, all other relationships are positive. Whereas, the relationship between Internet banking use with perceived security is predictably negative.

Table 6. Correlation among Factors

	Perceived Usefulness	Perceived Ease of Use	Green Concern	Perceived Security	Internet Banking Apps	Internet Banking Use
Perceived Usefulness	1					
Perceived Ease of Use	.278**	1				
Green concern	.223**	.042	1			
Perceived Security	-.075	.014	.561**	1		
Internet Banking Apps	.397**	.309**	.134*	-.147*	1	
Internet Banking Use	.488**	.303**	.226**	-.120*	.459**	1

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

5.4. Regression Analysis

Table 7 shows the results of multiple regression analysis for testing the hypotheses of the research. Here, simple multiple regression analysis was accomplished by using five independent variables (Internet banking apps, Perceived usefulness, Perceived security, Perceived ease of use, and Green concern), and Internet banking use was introduced as a dependent variable. The standardized coefficient showed the impact of independent variables on Internet banking use. The analysis revealed that 37% ($R^2=0.370$) of the variance of Internet banking use was explained by the independent variables. As of table 7, it is noticeable that perceived usefulness ($\beta=0.286$, $p < 0.05$) and Internet banking apps ($\beta= 0.241$, $p < 0.05$) had the highest effect on Internet banking use which are subsequently followed by green concern ($\beta= 0.235$, $p < 0.05$), and perceived ease of use ($\beta= 0.141$, $p < 0.05$). On the other hand, perceived security ($\beta= -0.197$, $p < 0.05$) was found to have a significant but negative impact on the dependent variable.

Table 7. Summary of Regression Analysis

	Unstandardized Coefficients		Standardized Coefficients**
	B	Std. Error	Beta
(Constant)	1.919	.376	
PU	.305	.057	.286
PEU	.126	.044	.141
GC	.176	.045	.235
PS	-.132	.040	-.197
IBA	.194	.043	.241

a. **Coefficients are significant at the 0.05 level.

b. Dependent variable: IBU.

c. Independent variables: PU, PEU, GC, PS, IBA.

d. ANOVA: $F = 34.513$, $sig = .000$

e. Model summary: $R = .608$, $R^2 = .370$, $Adjusted R^2 = .359$

Therefore, the regression equation for independent variables affecting Internet banking use could be stated as follows:

$$IBU = 0.286PU + 0.241IBA + 0.235GC + 0.141PEU - 0.197PS$$

As $F = 34.513$ and $p < .05$, the entire regression equation is statistically significant at the 5% level of significance. This means that the above regression equation was estimated to foresee the level of Internet banking use accurately.

Table 8. Results of hypothesis testing

Hypothesis	Hypothesized Relationship	Coefficients	t value	p-value	Decision
H2	PU→IBU	.286	5.381	.000	Supported
H1	IBA→IBU	.241	4.543	.000	Supported
H5	GC→IBU	.235	3.904	.000	Supported
H4	PEU→IBU	.141	2.840	.005	Supported
H3	PS→IBU	-.197	-3.327	.001	Supported

The results of the hypothesis of Table 8 generated from multiple regression analysis, ascertained that perceived usefulness ($p < 0.05$), Internet banking apps ($p < 0.05$), green concern ($p < 0.05$) and perceived ease of use ($p < 0.05$) had a significant and positive impact on Internet

banking use. Moreover, perceived security ($p < 0.05$) was found as the significant and negative predictor ($p < 0.05$) of Internet banking use. Therefore, all the hypotheses of the study were supported.

6. DISCUSSIONS

This study investigated the impact of Internet banking apps, perceived usefulness, perceived security, perceived ease of use, and green concern on Internet banking use. The empirical results showed the significance level of each factor that had an impact on Internet banking use. With the second-highest coefficient ($\beta = 0.241$), Internet banking apps had a significant effect on Internet banking use. This indicates that people want an easy way of doing banking transaction that is doing deals without being present in the bank. This finding is supported by Juniper Research (2017) as it found that people have increased the usage of mobile apps for performing their regular banking transactions.

Another significant predictor of Internet banking use is the perceived usefulness ($\beta = 0.286$). This result measures a positive impact of perceived value on Internet banking use, which is consistent with earlier studies (Kesharwani & Bisht, 2012; Lee, 2009; Yiu, Grant, & Edgar, 2007). According to Yoon and Steege (2013), perceived usefulness has a positive influence on Internet banking use. This implies that people are more likely to have a smooth and useful way of doing their regular banking activities with the Internet banking services.

Perceived security is also a significant factor for Internet banking use. In some past studies, it was inferred that perceived safety has a significant negative impact on the adoption of Internet banking and Internet banking use (Lee, 2009; Yoon & Steege, 2013). According to this study, it is apparent that perceived security ($\beta = -0.197$) has a negative and significant impact on Internet banking use that corresponds to the earlier studies (Lee, 2009; Yoon & Steege, 2013). So, bankers must carefully monitor security issues before offering Internet banking services. With the coefficient value ($\beta = 0.141$), perceived ease of use has a significant and positive relationship with Internet banking use. This finding is supported by Yoon and Steege (2013), who found that perceived ease of use had a positive influence on Internet banking use. At present, people are seeking the easiest way to make transactions with banks, so bankers should make the banking field as flexible as possible for the customers.

The green concern is another critical factor of Internet banking use since the result showed that it had a significant and positive relationship with Internet banking use. It means, at present in Bangladesh, people are educated, and they are more concerned about climate

change. They have knowledge of green initiatives that leads them to involve themselves in green activities spontaneously. It also implicates that people are happy and excited to use Internet banking services because they think this is a smart decision to use Internet banking services to promote 'green'. So the finding of this paper suggests that consumers' green concern should be an essential factor for Internet banking use as Internet banking implicates paperless banking practice that supports green.

7. IMPLICATIONS

7.1. Theoretical Contribution

From a theoretical perspective to the best of author's knowledge, this is the first study that has introduced Internet banking apps as a contributing factor to Internet banking use. Though mobile banking has been a much-talking issue over the last few years, recent researches illustrated that usage of Internet banking apps for availing banking services is on an ascending stage.

Another contribution of the current study to the existing literature is the specification of green concern as a predictor of Internet banking use. As stated by Ko, Mancha, Beebe, and Yoon (2012), green concern as a contributor to Internet banking use has not been adequately specified yet. Though Yoon and Steege (2013) tested this factor as a contributor to Internet banking use, the result did not reveal a significant impact. Moreover, in the context of Bangladesh, no previous authors have considered this factor as a predictor of Internet banking use. However, this study revealed a positive impact of green concern on Internet banking use, which has paved the way for future researchers to incorporate this factor for explaining technology acceptance in different settings.

7.2. Practical Implications

In Bangladesh, the number of mobile phone users has crossed 154 million, which is close to its total population (Anonymous, 2018). According to that report, more than 84.6 million people access the Internet through mobile phones. So it is a massive opportunity for bank marketers as they can easily be connected with customers by using Internet banking apps.

Moreover, people are looking for a more effortless and convenient way to do their daily tasks. So practitioners who offer Internet banking services should make it easier to learn, navigate, and use. Besides, the recent adoption of the 'go green' concept in different sectors has led the customers to believe that now it is high time to be more responsible in their

doings. As this study reveals the positive effect of green concern on Internet banking use, practitioners should emphasize this factor in their promotional activities. On the other hand, as customers may have to share some sensitive and financial information over Internet banking services, bankers need to build trust, ensure safety and provide services like Secured Electronic Transaction (SET) protocol in Internet banking services. In other words, ensuring the best security is mandatory for building a strong relationship and capturing value from current users and bringing more traffic to Internet banking services.

The findings of this study may lead the practitioners to devise a strong awareness program to motivate Internet banking users. This program should highlight the fact that using Internet banking through Internet banking apps is easy, benefits the customers by saving time, energy, and cost as well as it is safe and secure. Most importantly, Internet banking use is one of the ways by which an individual can contribute to saving the environment.

8. LIMITATIONS AND SCOPE OF FURTHER RESEARCH

Some limitations of this study might be considered. Firstly, this study introduced two factors, namely Internet banking apps and green concerns, which are relatively new to the Internet banking perspective. That is why the further investigation of these two factors in different settings seems worthwhile. Secondly, future studies can address e-customer satisfaction and e-customer loyalty using this model. Also, practitioners should be careful when generalizing the findings of this study as the results could suffer from different cultural issues and technological know-how that usually vary from one region to another region. Besides, the sample size could be increased. In the context of Bangladesh, the model proposed in this study can also be applied to predict the purchase intention through online for various types of fashion goods such as clothing, bags, and shoes. For generalizations of our findings, further research needs to be conducted considering other cultures, rural areas, different socioeconomic groups, and groups with different religious beliefs.

9. CONCLUSIONS

Internet banking is a growing field in the banking sector. Conducting banking activities electronically using the bank's website can provide convenience and also help lower transaction fees, compared to using traditional banking. This study proposed a research model that investigates variables influencing Internet banking use and empirically endorsed it. It indicates that Internet banking apps and perceived usefulness have the highest significant and positive impact on Internet banking use. Consequently, this study also revealed that green

concern and perceived ease of use have a significant and positive impact on Internet banking use, whereas, perceived security has a substantial and negative impact on Internet banking use. In Bangladesh, banks should consider the influence of these factors before starting Internet banking and make the system easier to adopt for their customers. Moreover, the findings of this study will help in developing strategies for particular segments and help to grasp all possible opportunities from this growing sector.

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APPENDIX A: QUESTIONNAIRE

Part-1: Demographics of Respondents:

Age: (a) 15-20 (b) 21-26 (c) 33-38 (d) 39+

Gender: (a) Male (b) Female

Education: (a) Below Secondary (b) Secondary (c) Higher Secondary (d) Graduate (e) Post Graduate

Occupation: (a) Businessman (b) Job Holder (c) Student (d) Housewife (e) Others

Monthly Income: (a) 5,000-15,000 (b) 16,000-25,000 (c) 26,000- 40,000 (d) 40,000+

Part-2:

(a) Internet Banking Apps

IBA1 I am happy to download and use Internet banking apps.

IBA2 Using Internet banking apps are valuable; they let me affirm banking activities.

IBA3 Overall, my attitude toward Internet banking apps is favourable.

(b) Perceived Usefulness

PU1 Internet banking enables me to accomplish my tasks more quickly.

PU2 Internet banking is useful.

PU3 Internet banking is a convenient way to manage my finances.

PU4 Internet banking eliminates geographic limitations and increases flexibility in mobility.

(c) Perceived Ease of Use

PEU1 It is easy to use Internet banking to accomplish my banking tasks.

PEU2 Learning to operate Internet banking would be easy for me.

PEU3 It is easy for me to remember how to perform tasks with Internet banking.

(d) Perceived Security

PS1 I would not feel safe in making transactions over the Internet banking.

PS2 I would not feel entirely safe providing personal privacy information over Internet banking.

PS3 I do not perceive the information relating to user and Internet banking transactions as secure.

PS4 I am worried about using Internet banking because other people may be able to access my account.

(e) Green Concern

GC1 Using Internet Banking would be a smart decision to promote 'green'.

GC2 I have a positive impression of using Internet Banking to promote 'green'.

GC3 I would feel excited to purchase Internet Banking services to promote 'green'.

GC4 I would be happy to use Internet Banking to promote 'green'.

(f) Internet Banking Use

IBU1 I am using Internet Banking more often than others.

(1) Strongly Disagree (2) Disagree (3) Somewhat Disagree (4) Neutral (5) Somewhat Agree (6) Agree (7) Strongly Agree

IBU2 How many times do you use Internet Banking for a week?

(1) Not at all (2) Less than once a week (3) About once a week (4) 2 or 3 times a week (5) Several times a week (6) About once a day (7) Several times each day

IBU3 How many hours do you use Internet Banking every week?

(1) <1 h (2) 1 - 5 h (3) 5 - 10 h (4) 10 - 15 h (5) 15 - 20 h (6) 20 - 25 h (7) >25 h

IBU4 How frequently do you use Internet Banking?

Infrequent

(1) Extremely (2) Quite (3) Slightly (4) Neither (5) Slightly (6) Quite (7) Extremely

Frequent