

FACTORS AFFECTING THE ATTITUDE TO USE DIGITAL BANKING IN RURAL INDIA: A CASE STUDY OF ASSAM

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Abstract

Purpose – The purpose of this paper is evaluate the factors affecting the intention to use digital banking in Assam, India.

Design/methodology/approach – Multivariate data analysis techniques (Structure equation model, Cronbach's Alpha test, Confirmatory Factor Analysis) were employed for the survey data collected from 201 customers who are well versed to digital banking.

Findings – From the results of this study, it was found that perceived usefulness has a positive effect on attitude and intention to use the service. Therefore, it is necessary to enhance the sense of the usefulness of customers through media advertising and consulting so that customers fully understand the benefits brought about by using digital banking services

Practical implications – Practical guidelines are provided to bank management on how to impact positively on consumer attitude to leverage migration to digital banking among actual customers who are nonusers or very rare users.

Originality/value – There is a lack of studies evaluating factors affecting the intention of customer to use digital banking channels in rural region of Assam.

Keywords - Intention to Use, Internet Banking, Digital Banking, India

Introduction:

The banking industry in India has witnessed rapid growth and intense competition among banks in recent years. The initiatives taken by RBI in the mid-eighties and early-nineties focused on technology-based solutions for the improvement of the payment and settlement system infrastructure, coupled with the introduction of new payment products by taking advantage of the technological advancements in banks. The continued increase in the volume of cheques added pressure on the existing set-up, thus necessitating a cost-effective alternative system. The Department of Payment and Settlement Systems (DPSS) continued to work on the strategic initiatives set in the 'Payment and Settlement Systems in India: Vision 2018' document as a part of the **Green Initiative** to decrease the usage of paper in the domestic payments market. The Reserve Bank's endeavour to build a less-cash society continued with the large scale adoption of digital modes of payments in the country. In an era of rising means of electronic payment systems, the Bank focused its efforts on safety and security of digital transactions. Accordingly, the Banks worked towards building up a robust and resilient technology infrastructure which ensured smooth functioning of the critical and systemically important digital payment and settlement systems in the country. UPI was officially launched in 2016 for public use. To reduce the footfall of customers and thus reduce the operational costs for banks to a great extent digital banking has been on priority of Bank's management. This has made the application of digital banking necessary for banks in India today. With the exponential growth of Digital Banking, India became the world's

largest real-time payment market with 25.50 billion annual transactions in 2020 as per data from ACI Worldwide and GlobalData leaving behind China and United States.

From the bank management's point of view, UPI and other digital banking channels has reduced the footfall of customers and thus reduced the operational costs for banks to a great extent. Transactions like instant money transfers without the intervention of bank staff and at any given point of time have become a boon and catalyst for spread of digital banking channels among the masses. Digital banking is also an important service in increasing customer loyalty to the bank. A survey shows that nearly 20% of customers are willing to switch to another financial institution if their current bank does not provide online banking services (Guru, Shanmugam, Alam, & Perera, 2013). Therefore, research on the intention to use digital banking services is considered necessary (Lee, Cai, & O'Leary, 2006). **Kate (2016)** discussed in the study that, there would be no more isolated areas in India, because of the boon of UPI. Because of the various benefits of digital banking channels, like the interoperability, speed, safety, benefits of more than one account linking etc. UPI benefits users with the cost advantage as compared to wallet payments which come at the cost of MDR. So, the usage of UPI is more, and wallet usage has been declining. **Somanjili Mohapatra (2017)** concluded that "UPI is the best digital platform developed by NPCI until now. The interoperability becomes a boon for the growth of UPI in the digital era. Digital Banking has been increased at a fast pace because of several factors like growth in the sales volume of smartphones, decreased data cost, free and easy money transfer platform, and easy access to mobile banking facilities." In India, although there have been many studies related to the intention to use internet banking services.

However, few researches has been conducted on the scope of digital banking services. The pace of penetration of digital banking in Rural India is quite slow. In order to ensure that commercial banks in India can switch to the digital banking business model, it is required to study the factors affecting digital banking development in India. In the above scenario it is pertinent to conduct a study on "Factors affecting the intention to use digital banking in Rural India".

2 Literature review

Digital banking is a transformation of all traditional banking activities and services into a digital environment (Sarma, 2017). Digital banking is a highly technologically demanding including innovation in financial services for customers and commercial customers around mobile, digital, AI and payment strategies, regtech, data, blockchain, API, distribution channels and technology (Sarma, 2017). Pallab Sikdar, Amresh Kumar and Munish Makkad (2015) establishes Trust, Usage Constraint, Ease of Use, Accessibility and Intention to Use are reliable and valid factors determining internet banking adoption among customers in India. Accessibility, Usage Constraints, Intention to Use portrayed strong and significant relationship with overall customer satisfaction. A study conducted by Alnsour and Al-Hyari (2011) has observed that awareness of security leads to trust and this trust has a direct impact on the usage of digital banking. In general, digital banking is an operating model based on a technology platform to exchange information and conduct transactions between banks and customers. This process is done through digital devices which are connected to computer software in the internet environment. Customers do not have to come to physical branches of banks to make transactions and vice versa, banks also do not have to meet with customers to complete transactions (e.g., signing documents, tracking records) According to Davis (1993) and Venkatesh (2000), the intention to use technology services is the awareness of ability to use services of customers. Customers' intentions to use the service, will be influenced by several motivating factors leading to the intention (Fortes & Rita, 2016). **Somanjili Mohapatra (2017)** concluded that "UPI is the best digital platform developed by NPCI until now. The interoperability becomes a boon for the growth of UPI in the digital era. **Dr Dhani Shankar Chaubey and Piyush Kumar (2017)** "demonetization and its impact on the adoption of

digital payment: opportunities, issues and challenges". They have made a research report studying the perceptions of the users towards digital payments platforms after the demonetization. They have concluded that people became realistic about the digital trends in the country, and readiness of people for the digital platform acceptance was high, but it was degraded by the cost incurred in the digitization of monetary transactions in terms of failure risk." Research on the intention to use technology services is often anchored on technology acceptance model (TAM) and the various models developed from the TAM model (King & He, 2006). In the TAM model, the intention to use through the lens of theory of rational action and theory of planned behavior is affected by factors such as: ease of use, perceived usefulness, attitude to service (Davis, 1989). In addition, the TAM model has also been extended to include a number of new factors such as perceived risk, trust and convenience (Fortes & Rita, 2016). This study is intended to investigate the intention to use digital banking services using the following factors: (1) ease of use; (2) perceived usefulness; (3) perceived risk; (4) trust; (5) convenience; and (6) attitude towards service.

2.1 Hypothesis:

Perceived usefulness can be defined as customer's perception of the ability to improve work efficiency, such as by saving time, when accessing various services in multiple ways (Davis, 1993). When customers feel the service useful they have a positive attitude towards the service (Fortes & Rita, 2016) and directly increase their intention to use the service (Davis, 1993; Pavlou, 2003; Pavlou & Fygenon, 2006). Going further, the good attitude with service will increase the intention to use customer services (Fortes & Rita, 2016). Therefore, hypothesis is proposed as follows:

H1a: Perceived usefulness impacts positively on attitude towards the service.

H1b: Perceived usefulness has a positive influence on the intention to use the service.

Ease of use is customer's level of trust for using the service that will bring convenience and comfort (Davis, 1989, 1993). Digital banking services make it easier for customers to access and use banking services than traditional counter services. Many existing studies show that the ease of using the service affects customers' perceptions of the service's usefulness (Phan & Bui, 2019; Venkatesh, 2000; Venkatesh et al., 2003) and their attitude towards the service (Davis, 1993; Venkatesh, 2000). Therefore, hypothesis is proposed as follows:

H2a: Perceived ease of use has a positive impact on perceived usefulness.

H2b: Perceived ease of use has a positive on attitude towards the service.

Risks are perceptions of the damages that customers may incur when using the service. The risk of losing personal information or transactions creates a barrier to electronic services (Fortes & Rita, 2016; Glover & Benbasat, 2010; Nguyen, Nguyen, Dang, & Nguyen, 2016). Therefore, reducing the perceived risk will increase the positive attitude of customers to the service. Hypothesis is given as follows:

H3: Perceived risk has a negative impact on attitude towards the service

Trust of customers is another factor showing that customers feel secure when using the service without having to care about risks or other issues (Gefen, Karahanna, & Straub, 2003; Nguyen, Nguyen, & Vo, 2019). Page and Luding (2003) think that a high level of trust is an important motivation for using digital banking services (Page & Luding, 2003). Stewart (2003) also suggests that at a sufficient amount of trust, customers find a website or an application more useful.

Therefore, Hypothesis is stated as follows:

H4a: Trust has a positive impact on perceived risk.

H4b: Trust has a positive impact on attitude towards the service.

Convenience provides access to services easily with the efficiency equal to or better than other services. Convenience can be demonstrated by saving transaction time and reducing technical errors (Chen, Sun, & Xu, 2016; Seiders, Voss, Godfrey, & Grewal, 2007). There are studies that show how convenient it is to find or access services. Increasing convenience will help increase customers' intention to use the service by minimizing time and reducing errors during transactions (Chang & Polonsky, 2012). Therefore, Hypothesis is stated as follows:

H5: Convenience has a positive impact on the intention to use the service.

Attitude of customer towards the service affects the customer's decision to use the service. For digital banking services, customers who have a positive view of the service are more likely to accept it. Various studies have shown that positive customer views or attitudes influence the intend to use (Kulviwat et al., 2007; Nguyen et al., 2016; Nguyen et al., 2019; Sousa & Farhangmehr, 2018; Venkatesh et al., 2003).

Therefore this study hypothesizes:

H6: Attitude towards the service has a positive on intention to use the service.

Research Model:

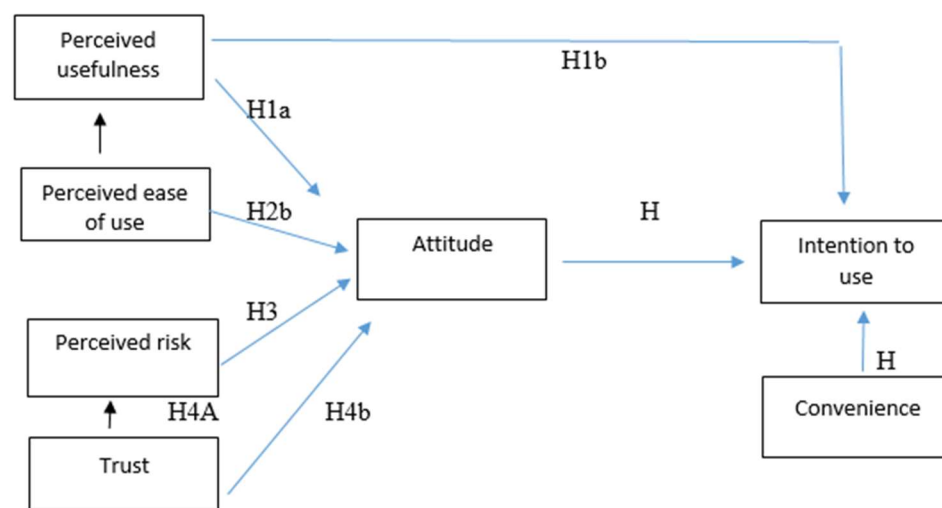


Figure 1: Research model

3 Research Method

3.1 Research Design

The constructs used in this study were adopted from previous studies and measured by multiple items 5- point Likert- type scales. The questionnaire (Table 1) used to measure the factors in the proposed model was incorporated from previous studies (Chang & Polonsky, 2012; Davis, 1993; Fortes & Rita, 2016). The time during which the survey was conducted was from February 2024 till July 2024.

Perceived ease of use	You can easily find documentation on how to use digital banking.	Fortes & Rita (2016); Davis (1993)
	The application process is very clear and easy to understand.	
	You can quickly use of digital banking	
	In general, you find that using digital banking is very easy.	
Perceived usefulness	Using digital banking helps you save money	Fortes & Rita (2016); Davis (1993)
	The use of digital banking saves you time.	
	Using digital banking gives you access to a wide range of services.	
	In general, you find it useful to use digital banking.	
Perceived risk	Providing bank account information (credit card, debit card ...) is dangerous	Fortes & Rita (2016); Davis (1993)
	You find that using a bank is a risky activity	
	Providing your personal information on the internet is risky.	
	Signing up for online services is risky	
	You find using digital banking more risky than going to traditional banks.	
Trust	Website, app of bank are trust	Fortes & Rita (2016)
	The bank complies with what it has announced about digital banking	
	Digital banks do exactly what they commit to their services	
	Digital bank always tries to bring the best benefits to customers.	
Perceived risk	Providing bank account information (credit card, debit card ...) is dangerous	Fortes & Rita (2016);
	You find that using a bank is a risky activity	
	Providing your personal information on the internet is risky.	
	You find using digital banking more risky than going to traditional banks.	
Attitude towards the service	You enjoy using digital banking.	Fortes & Rita (2016); Davis (1993)
	You find the use of digital banking a smart choice.	
	You see the use of digital banking is a good idea.	

	You find the use of digital banking an interesting idea	
Convenience	You see that the digital banking system can be accessed anytime. anywhere as long as there is internet connection	Chang & Polonsky (2012)
	Digital banking system helps you be proactive in arranging your time	
	The current digital banking system is easily accessible.	
	The digital banking system helps you easily compare service prices between different providers.	
Intention to use	You will use digital banking services if needed.	Rita (2016); Davis (1993)
	You think that the use of digital banking should be encouraged by all people	
	You will recommend the use of digital banking to your friends.	

3.2. Sample and Data

The research instrument employed to obtain the information was a survey based on a questionnaire with close-ended questions. These respondents resembled the target sample to be surveyed. The research sample was collected from identified customers using digital banking services in Assam, India. Convenient sampling methods was then applied to collect data. The official survey results obtained from 201 responses. This sample size was demonstrated to reach reliability according to most sampling rules (Tabachnick&Fidell, 2006). The demographic description of respondents showed that the percentage of women participating in the survey was higher than that of men (111 women made up 55.3% while the number of men was 90 comprising 44.7%). Regarding education, a majority of respondents held college degree (153 people, at 76.1%). In contrast, there were only 39 graduates and 7 respondents of high school level, comprising about 19.4% and 3.5% of the sample, respectively.

Table 2: Descriptive results

		Number of people	Percentage(%)
Gender	Male	90	44.7
	Female	111	55.3
Education	High School	10	4.97
	College	153	76.1
	Graduate	38	18.9
Income	Less than 5 lacs	75	37.31
	5 to 10 lacs	61	30.34
	Greater than 10Lacs	65	32.33
Frequency of use	Daily	75	37.3
	Weekly	87	43.28
	Monthly	39	19.40
Occupation	Student	57	28.35
	Service	54	26.86

	Entrepreneur	51	25.37
	Housewife/ Retired	12	5.97
	Others	24	11.94
	Total	201	

With reference to income, the largest income group included people with annual income less than 5 lakh, accounting for the largest proportion with 75 respondents comprising 37.3% of sample size; followed by the group of over 10 lakh per year comprising of 65 respondents at 32.3%. The smallest was the income group between 5 lakhs to 10 lakh per year with 61 people at 30.3%. The frequency of use of individuals was mainly from 2 to 5 hours / day (88 people at 43.8%), followed by less than 2 hours per day (74 people at 36.8%); the percentage of users spending over 5 hours a day accounted for 19.4%. Main occupations of respondents were govt service, business and students (each accounting for more than 25%); the housewives / retirement group only made up 6% (Table 2).

3.3. Data Analysis

Multivariate analysis methods were employed to analyse the data. The scale reliability of the constructs in the research model was assessed through Cronbach's alpha co-efficient, the value of which was required to be greater than 0.6 (Hair, Black, Babin, Anderson, & Tatham, 2006) and the item-total correlation greater than 0.3 (Nunnally & Bernstein, 1994). To assess the appropriateness of the research scales: confirmatory factor analysis (CFA) was employed to convergence validity and discriminant validity. Structural equation modelling (SEM) was applied (SEM) to find out impacts of the factors on the intention to use digital banking services at the 5% significance level. CFA, critical and SEM analyses were reliable when the Chi - square / df conditions were less than 3; the value of CFI, TLI, IFI were all greater than 0.9; RMSEA's coefficient was less than 0.05 (Hair et al., 2006; Hooper, Coughlan, & Mullen, 2008). A construct with all factor loadings of items greater than 0.5 was considered to have convergent validity and the one having the squared root of the variance greater than the correlation with other constructs was deemed to reach discriminant validity (Hair et al., 2006)

4. Results

4.1. Evaluating Reliability

The deciding factor to deem a reliable construct were Cronbach's alpha greater than 0.6 and the item-total correlation greater than 0.3 was considered. The items with an item-total correlation coefficient less than 0.3 were excluded from the scale and considered as unreliable. This item would thus not be included in subsequent analyses (see Table 3).

Table 3

Code	N	Cronbach's Alpha	The item-Total correlation	Item removed
PEU	4	.823	.544	-
PU	4	.736	.506	PU1
TRU	3	.736	.506	-
RISK	4	.785	.539	-
ATT	4	.849	.628	-
CON	3	.899	.735	-
INT	4	.821	.485	-

PEU: perceived ease of use; PU: perceived usefulness; TRU: trust; RIS: perceived risk; ATT: attitude; CON: convenience; INT: intention to use service.

The results of scale reliability showed that perceived usefulness (PU) could be reliably measured through the three items: PU2, PU3 and PU4. PU1 was excluded as its item-total correlation coefficient (0.238) was less than 0.3. The remaining constructs all were all deemed reliable using the original items (Cronbach's alpha greater than 0.6 and the item-total correlation coefficients greater than 0.3). Therefore, the items in these constructs would be included in analysis in the next steps.

4.2 Analysis Results

Table 4: General reliability and Average Variance Extracted

Factor			Composite reliability	Ave
Perceived ease of use				
PEU4	←-----	PEU	0.827132	0.739694
PEU2	←-----	PEU		
PEU1	←-----	PEU		
PEU3	←-----	PEU		
Perceived usefulness				
PU4	←-	PU	0.739332	0.697951
PU3	←--	PU		
PU2	←-	PU		
Trust				
TRU4	←-----	TRU	0.753698	0.660123
TRU3	←-----	TRU		
TRU2	←-----	TRU		
TRU1	←-----	TRU		
Perceived Risk				
RIS5	←-----	RIS	0.840765	0.718064
RIS4	←-----	RIS		
RIS3	←-----	RIS		
RIS2	←-----	RIS		
RIS1	←-----	RIS		
Attitude towards service				
ATT4	←---	ATT	0.900119	0.83265
ATT3	←---	ATT		
ATT2	←---	ATT		
ATT1	←---	ATT		
Convenience				
CON4	←-----	CON	0.827882	0.742534
CON3	←-----	CON		
CON2	←-----	CON		
CON1	←-----	CON		
Intention to Use				
INT3	←-----	INT	0.798746	0.755159
INT2	←-----	INT		
INT1	←-----	INT		

The results of confirmatory factor analysis indicated that: Chi-square / df = 1.69, less than 3; CFI =

0.922; TLI = 0.922; IFI = 0.923 greater than 0.9; RMSEA = 0.059 less than 0.08. This suggested that the data was compatible with the proposed model. The factor loadings of items were all greater than 0.5 (Table 4), so it was possible to see the convergent validity. The results of general reliability analysis and average extracted variance (AVE) showed that the factors are the scales with load factor greater than 0.5, reaching the convergence validity. For each construct, the composite reliability was above 0.7 and AVE was greater than 50%. This indicated that the scales used for the constructs achieved the necessary reliability (see Table 4). Table 5 showed that square root of AVE of each construct was greater than its correlation with one another showing the scales satisfied discriminant validity.

Table 5: Discriminant validity

	PEU	PU	TRU	RIS	ATT	CON	INT
PEU	0.860						
PU	0.607	0.835					
TRU	0.541	0.529	0.812				
RIS	0.018	-0.003	0.238	0.847			
ATT	4.33	0.563	0.144	-0.190	0.912		
CON	0.647	0.737	0.561	0.113	0.544	0.861	
INT	0.550	0.642	0.484	-0.011	0.526	0.530	0.868

4.3. Structural Equation Modeling

The analysis results using SEM showed that the model was suitable for the survey data (Chi-square / df = 1.84 less than 3, CFI = 0.915; TLI = 0.90, IFI = 0.916 greater than 0.9, RMSEA = 0.065 less than 0.08). As the constructs were found reliable and valid; structural analysis was conducted to find out the factors affecting the intention to use digital banking services. As the significance level of 5% was selected, p-values would be compared with 0.05 to see which factors have significant impacts on the dependent variable. The combined results were presented in Figure 2.

Structural analysis results showed that ease of use had a positive effect on perceived usefulness, which in turn had a positive effect on the attitude towards the service. It was also found that trust had a positive impact on perceived risk and perceived risk as expected negatively affected attitude towards the service. Trust, however, had no direct effect on the attitude towards the service. Furthermore, perceived usefulness and attitude was found to positively affect intention to use, while the impact of convenience was found not significant. In other words, the results accepted hypotheses H1a, H1b, H2a, H3, H4a, H6 and rejected hypotheses H2b, H4b, H5 (Table 6).

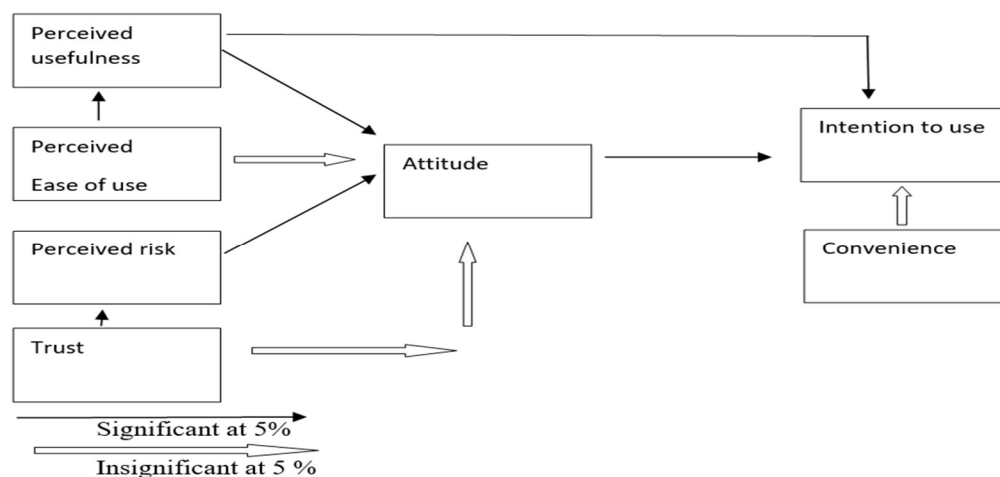


Figure 2: Structural Equation Model**Table 6: Relation between variables**

Relationship between the variables			Standardized coefficient	S.E	P-value
TRU	→	RIS	0.25	0.11	0.0006
PEU	→	PU	0.65	0.069	0.000
PU	→	ATT	0.60	0.098	0.000
RIS	→	ATT	-0.20	0.058	0.003
ATT	→	INT	0.17	0.087	0.059
PU	→	INT	0.59	0.12	0.000

Discussion:

This paper brings in insights about factors affecting intention to use digital banking channels. The results showed that attitude towards the service and perceived usefulness had positive effects on intention to use the service, which is in accordance with the theory of reasoned action model (TRA) (Fishbein&Ajzen, 1975), theory of planned behavior (TPB) (Ajzen, 1985). Specifically, perceived usefulness reported a stronger impact than attitude towards the service on customer's intention to use. This implies that banks can take advantage of technological advances to enhance the usefulness of their services, focusing on promoting the development of their digital banking services. Customers increasingly appreciate the advantages of digital services, such as time saving nature and diversity of services compared to performing transactions at counter. In addition, the result that perceived risk had an indirect effect on intention to use through attitude towards the service supports the proposed hypothesis and is also found in the study of Fortes and Rita (2016). A high level of perceived risks often results to a negative attitude towards the service, which means that poor perceptions of the information or transaction security when using digital banking services will make customers have a bad attitude to the service. Fortes and Rita (2016) also suggest customers always react negatively to issues that bring risks or damages to themselves. In contrast, trust did not directly affect the attitude to the service but had an indirect effect through perceived risk. The negative impact of trust on perceived risk indicates when customers trust the service they feel more secure and their perceived level of risk is reduced. Research by Fortes and Rita (2016) also shows the similar result. When bank is able to induce confidence in customers' towards digital banking services, they no longer feel insecure when using the service, and vice versa if the customer's confidence is reduced due to the information or perceived insecurity or poor service quality, they will tend to increase the level of precautions and think about risks when using the service. Results showed convenience reported insignificant impact on intention to use digital banking services. This result can be explained by the Kano theory positing that in case of utility services using high technology like digital banking, convenience is considered a must. Customers, therefore, no longer consider the convenience as a criterion when making their decisions to use the service. At the same time, the trust of customers does not directly affect the attitude to the service, meaning that when customers have confidence in digital banking, they will not appreciate or have a good attitude towards the service. They tend to first seek belief that the service poses no risks or harms to themselves and then have their attitude changed accordingly.

6. conclusion:

The study shows the necessity of digital transformation of traditional banking activities today. With the rapid development of technology in the financial industry, especially Fintech businesses, it is imperative that banks develop electronic banking services to facilitate easier management and operation. At the

same time, the use of digital banking services enables customers to use more value-added services with flexibility, reducing the technical errors that can be encountered when doing other traditional transactions. With an extensive review of previous studies, the authors have constructed a research model to investigate the factors affecting the intention to use digital banking services in Vietnam. Drawing on the research results, several recommendations are provided to help improve the intention to use digital banking services in Vietnam.

Perceived usefulness has a positive effect on attitude and intention to use the service. Therefore, it is necessary to enhance the sense of the usefulness of customers through media advertising and consulting so that customers fully understand the benefits brought about by using digital banking services. Perceived risk has a negative impact on attitude towards the service. Therefore, banks need to build information security layers to insure customers, but at the same time the services need ease of use to bring in more customers into ambit of digital banking.

Part of the strength of a study lies in the acknowledgement of its limitations. As with any study, the findings reported here may be difficult to generalize beyond our specific sample. For instance, our results could differ if bank clients who have never used internet to perform financial operations or who stopped using this channel due to lack of satisfaction, would have also been interviewed. As previous research (Sarel and Marmorstein, 2003; Shih and Fang, 2004) demonstrated, further research is needed to understand group differences for the factors influencing digital banking services adoption between pre-behaviour and post-behaviour users.

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