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Facilitating conditions and Perceived Security as antecedents of trust among E-banking customers in Nigeria

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Abstract

The purpose of this paper is to empirically discuss facilitating conditions and perceived security as major factors that influence trust among e-banking customers in Nigeria. In doing so, final data that were collected from 266 customers were analyzed using PLS-SEM (2.0). The results of the study show that facilitating conditions and perceived security significantly and positively influenced trust among the e-banking users of four major banks in Nigeria. Theoretical and practical implications of the study are presented as a guide for both academics and practitioners

Keywords: Facilitating conditions, perceived security, trust, e-banking

Introduction

Electronic banking (e-banking) in the recent time has gained wider attention in both developed and developing countries. Such attention is based on the publicity and dissemination of information about the presumed benefits of the technology based banking service. For instance, Liebanas-Cabanillas et al (2016, pp. 141) from the perspectives of individual customers opined that the benefits of e-banking include "convenience, global access, availability, cost and time savings, transparency of information, ability to choose and compare and customization". These benefits have been confirmed by a number of other scholars (Amin, 2016; George and Kumar, 2013; Ndubisi and Sinti, 2006; Safeena et al., 2011). Of recent, a number of banking institutions have also invested heavily in the e-banking related facilities since such technology is helping them to serve their customers better and creating superb customer relationship than traditional banking system (Sharma et al., 2017).

In view of the benefits of e-banking, evidence has shown that its acceptance in developed and industrialized nations has continued to increase tremendously (Safeena et al., 2014). BigCommerce, (2017) for instance, reports that an average American and European use e-banking to transact at different platforms making the rate of usage to reach over 52% of the total population with cumulative transaction of average \$200 billion USD per annum. However, in developing countries like Nigeria, only 42% of the teeming populations of 148 million that use smartphones embrace e-banking while over 77% of the populations use other social

media for personal reasons than banking transactions (KPMG, 2017). In line with this, Nigeria's banks have failed hugely to translate the passion for social media and proliferation of the internet into increased adoption of e-banking solutions because the majority of Nigerians are still worried about the stability/security of alternative of the alternative channel (KPMG, 2017), and which have greatly affected the level of trust of e-banking users (Ayo et al., 2016; Ezeoha, 2005; Tade and Adeniyi, 2016). And as noted by Yap et al (2010), the usage rate of e-banking is far behind that of internet usage due to lack of trust among e-banking customers. In particular, news headlines about identity theft, e-mail scams, and "phishing" have continued to seriously distort the perceptions of consumer about the level of trust in the platform of e-banking (Gerrard et al., 2006). Recently, Ernst and Young, (2017) equally argued that enhancing cybersecurity, and managing the threat of financial crime is a major challenge for banks across the globe.

Further evidence has equally shown that the level of decaying or epileptic nature of facilitating conditions such as internet, electric supply, technical assistance, and ineffective regulatory frameworks among others for related IT/IS services like e-banking is another major factor affecting the level of trust for IT/IS such as e-banking (Adesina, 2010; Lu et al., 2005) thereby influencing the rate of adoption especially in developing countries like Nigeria (Adesina, 2010).

Despite the challenge being faced by e-banking in developing countries generally and Nigeria in particular, very limited studies have been conducted as majority of previous studies either emanate from developed or emerging nations (AbuShanab et al, 2010; Chong et al, 2010) while a few of other studies from developing countries are parochial in their approach (Awa et al., 2015). Aside, even though trust which is regarded as a key concept in marketing (Morgan and Hunt, 1994) has been deeply discussed in other areas such as e-commerce and mobile commerce (e.g., Amin et al., 2014; Liu et al. 2008), less attention has been paid to it in the field of e-banking marketing and adoption (Yu et al., 2015; Zhao et al., 2010). Additionally, while the trust antecedents with regards to online banking have been discussed by a number of recent researchers (e.g., Zhao et al, 2010), no consensus has been reached about its specific determinants (Kim and Peterson, 2017).

In view of this, the objective of this paper is to discuss perceived security and facilitating conditions as the major factors influencing trust with electronic banking in Nigeria. The rest of the paper is structured as follows. The next section discusses the literature review and presents the conceptual framework. The following part unveils the methodology of the research while the last section presents discussion of findings, implication of the study and future research recommendation.

Literature review and conceptual framework

Various studies have been conducted to investigate the adoption of e-banking. However, very limited scholars have paid attention to the issue of trust in e-banking (Zhao et al, 2010). Among popular theories used to predict e-banking adoption include Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), Theory of Reasoned Action (TRA) and Universal Theory of Acceptance and Use of Technology (UTAUT) (Ajzen, 1991; Davis, 1989; Venkatesh et al, 2003). Out of these various models however, UTAUT is the most widely employed due to its parsimony, simplicity, and robustness (Abu-Shanab et al., 2010; Foon and Fah, 2011; Venkatesh et al., 2012; Tarhini et al., 2016). Despite this, scholars have continued to debate (for a review, see Venkatesh et al., 2012) about the universal applicability of the constructs of UTAUT to all contexts and contents (Tarhini et al., 2016). A review of literature has equally shown to the limited knowledge of the researchers that no study has extended or linked UTAUT with trust in e-banking in developing countries like Nigeria. This study fills the knowledge gap by incorporating perceived security with facilitating condition to explain trust in e-banking.

Trust in e-banking

In seller and buyer relationship, trust is regarded as a central point (Morgan and Hunt, 1994). Researchers have generally suggested that placing trust on another party involves a level risk (Morrison and Firmstone, 2000) since one party would believe that the relationship partner would act as anticipated (Zhao et al, 2010). In the online environment, trusting the service provider involves relying on the banking institution's website activities in particular, and/or other electronic medium in general (Kim and Peterson, 2017). The degree of

trust that an individual possesses in a particular object/transaction would differ contingent on the time the trust is assessed (Ayo et al, 2010). Moreover, if the degree of trust exceeds the threshold of perceived risk, then the individual may be willing to take some risks which involve initiating a financial transaction relationship with the e-bankers. However, in e-banking, trusting service provider is considered more important than traditional banking due to the higher degree of uncertainty associated with the online environment (Yu et al., 2015). Today, majority of customers are highly skeptical in providing their sensitive data to web since they are worried about the possible misuse and transmission of either their credit or debit cards (e.g. Akhlaq and Ahmed, 2013). Customers feel uncomfortable when asked about sensitive information such as credit card number due to distrust in the internet banking technology (Suh and Han, 2002). Lack of trust remains a barrier in the widespread adoption of e-banking both in the context of the bank and the overall online environment (Yousafzai et al., 2009) especially if the level of integrity, ability and benevolence of the service provider is doubted. While several studies have considered trust in mobile commerce (e.g., Hillman and Neustaedter, 2017), e-commerce (e.g., Wang et al., 2016), online hotel booking (e.g., Sparks et al, 2016), their findings remain inconsistent (Kim and Peterson, 2017) and which have created a quandary in their generalization. Such inconsistency calls for further investigation. Aside, the studies that considered the antecedents of e-banking trust in the context of developing countries, such as Nigeria is very limited (Barkhordari et al., 2016).

Facilitating conditions (FC)

Facilitating conditions refer to the accessibility of resources such as software, hardware, documentation, training, and other technology infrastructure that support IT/IS like e-banking (Khalifa and Shen, 2008; Venkatesh *et al.*, 2003; Yuen et al., 2015). It is a form of ability of the service provider to provide desired and supportive resources to operate e-banking effectively. As noted by Micheni et al, (2013) responsive and reliable customer support services such as explicit explanation about product characteristics, liquidity availability, and marketing of these variables are equally regarded as key facilitating conditions that can engender some level of trust towards mobile money services. In their vulnerability, the customers trust the banks to effectively manage their money while they are longing to be closer to their money and this closeness comes in the form of facilitating conditions (Micheni et al., 2013). In line with the argument of Lu et al. (2005), facilitating conditions should also include non-technical external controls with respect to favorable international legal and regulatory protection, guidance and control especially that the use of IT/IS such as e-banking is not limited to a particular region. When individuals are given more of these supporting facilities they tend to develop trust in the e-banking (Lu et al., 2005) since they will believe that their banks are committing enough resources to ensure that the e-banking is smoothly operated (Salimon et al., 2016). Lack of such facilities however would make users to be hesitant about e-banking facilities.

Perceived Security

Importance of security has been generally acknowledged either in offline or online transaction (Yap et al. 2010; Yousafzai et al., 2009). In e-banking transaction, more preference is given to security because of the risk that is involved with the use of technology. Perceived security in e-commerce is regarded as a threat which brings about the 'circumstance, condition, or event with the potential to cause economic hardship to data or network resources in the form of destruction, disclosure, modification of data, fraud, and abuse' (Salimon et al., 2017; Yousafzai et al., 2009). The apprehension about insufficient security is one of the reasons that have been ascertained as a serious impediment in the growth and development of e-commerce, including e-banking adoption (Ezeoha, 2005; Mansour et al., 2016). In this study, perceived security is defined as any event that can make e-banking users to lose their money or other information thereby not trusting the banker (Salimon et al., 2017). Therefore, security may be regarded as the most significant factor influencing customer trust in the use of electronic payment system (Barkhordari et al., 2017) such as e-banking. Chellapa and Pavlou (2002) opined that trust will be influenced positively when customers perception of security is increased.

Hypothesis development

Several studies have linked facilitating conditions to intention (Wu et al., 2014; Venkatesh et al., 2003), user satisfaction (Venkatesh et al., 2011), adoption and behavior (Oliveira et al, 2015; Tarhini et al., 2016), in different fields of IT/IS marketing. Very limited study however linked facilitating condition with IT/IS related service trust such as mobile wireless (e.g. Lu et al., 2005). Based on this, the following hypothesis is formulated.

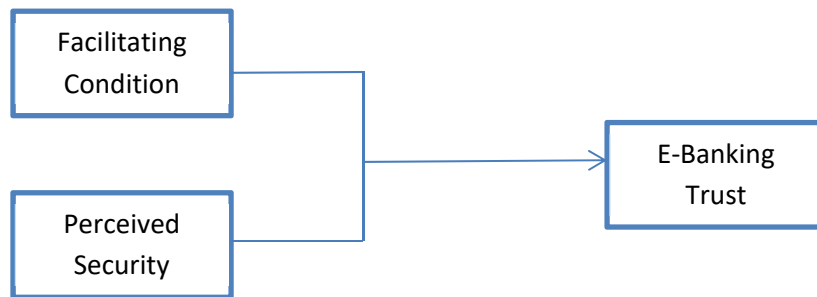
H1: Facilitating condition positively influences trust in e-banking

A number of studies have found positive and significant relationship between perceived security and trust in different fields (e.g. Adesina and Ayo, 2010; Al-Sharafi et al., 2016; Barkhordari et al., 2017; Yusafzai et al., 2009). Based on this, the following hypothesis is formulated.

H2: Perceived Security positively influences trust in e-banking

Based on the discussions and formulation of the hypotheses above, the conceptual frame of this study is presented below

Figure 1: Conceptual framework



Research Methodology

The researchers collected data from 266 users of e-banking in four different commercial banks in Nigeria using mall intercept. All the customers are based in Lagos, Nigeria. In all, 20 measurement items were adapted from previous studies (Alalwan et al., 2015; Lu et al 2005). Items of e-banking trust and facilitating conditions were adapted from Alalwan et al., (2015) and Lu et al (2005) respectively while perceived security were taken from Yousafzai et al (2009). All of these items were measured using the seven-point Likert scale ranging from “strongly disagree (1)” to “strongly agree (7)” (Dwivedi et al., 2006). The questionnaire also included six closed-ended questions to represent the respondents’ demographic characteristics

Table 1
 Demographic information

	Frequency	%
Gender		
Male	165	62.03
Female	101	37.96
Age		
Age 20 and below 30	104	39.09
Age between 30 and 34	85	31.95
Age between 35 and 39	34	12.78
Age between 40 and 44	24	9.04
Age between 45 and 50	19	7.14
Employment Status		
Private Employment	102	38.35

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Government Employees	123	46.24
Others	41	15.41
Marital Status		
Married	119	44.74
Single	140	52.63
Divorced	7	2..63

Table 2
 Factor Loading Significance

E-banking Trust	Loadings
E-banking Trust	AVE= 0.5973;CR=0.8548;CRB=0.7724
ET2	0.6768
ET4	0.7313
ET5	0.8243
ET6	0.8466
Facilitating Conditions	AVE= 0.5565;CR=0.8334;CRB=0.7339
FC5	0.6764
FC2	0.7792
FC3	0.7432
FC4	0.7802
Perceived Security	AVE= 0.5732;CR=0.8701;CRB=0.8141
PS1	0.7420
PS6	0.8083
PS2	0.7091
PS3	0.7449
PS4	0.7774

Table 2
 Discriminant Validity

	1	2	3
1 ET	0.772852		
2 FC	0.6251	0.745989	
3 PS	0.5422	0.5322	0.7571

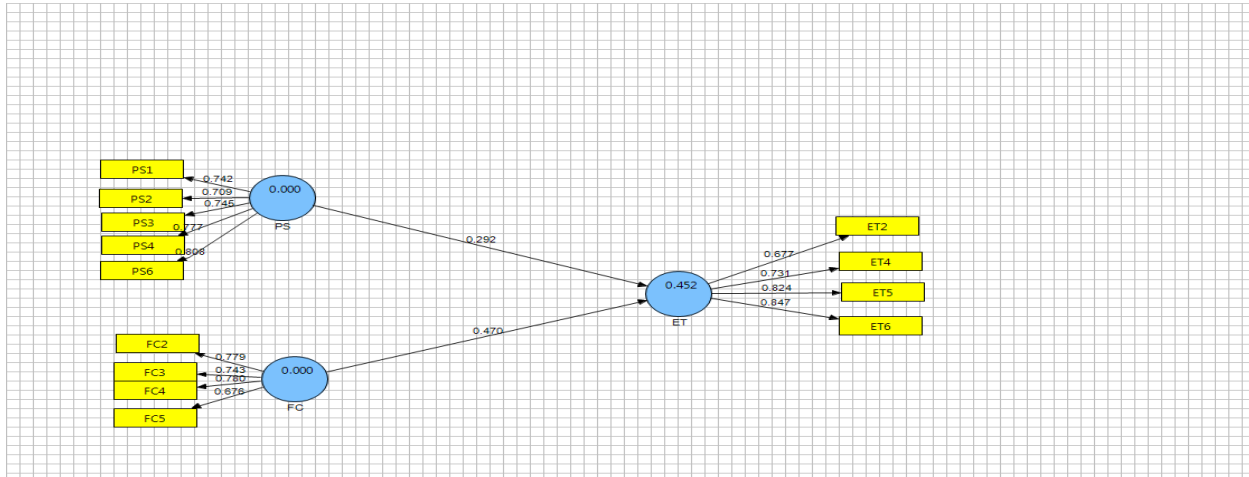


Figure 2: Measurement Model

Findings

Structural model results

Having validated the measurement model, all the hypotheses were subjected to empirical test by ascertaining their level of significance in the model based on PLS path modeling. The results of the analysis are shown in Figure 2 and Table 3.

Facilitating condition H1 ($b=0.4695$; $tv= 9.56$; $pv< 0.000$) and Perceived security H2 ($b=0.292$; $tv= 6.21$; $pv< 0.000$) have positive and significant relationship with trust in e-banking thereby making all the hypotheses to be supported. This result is depicted in figure 3 and Table 2.

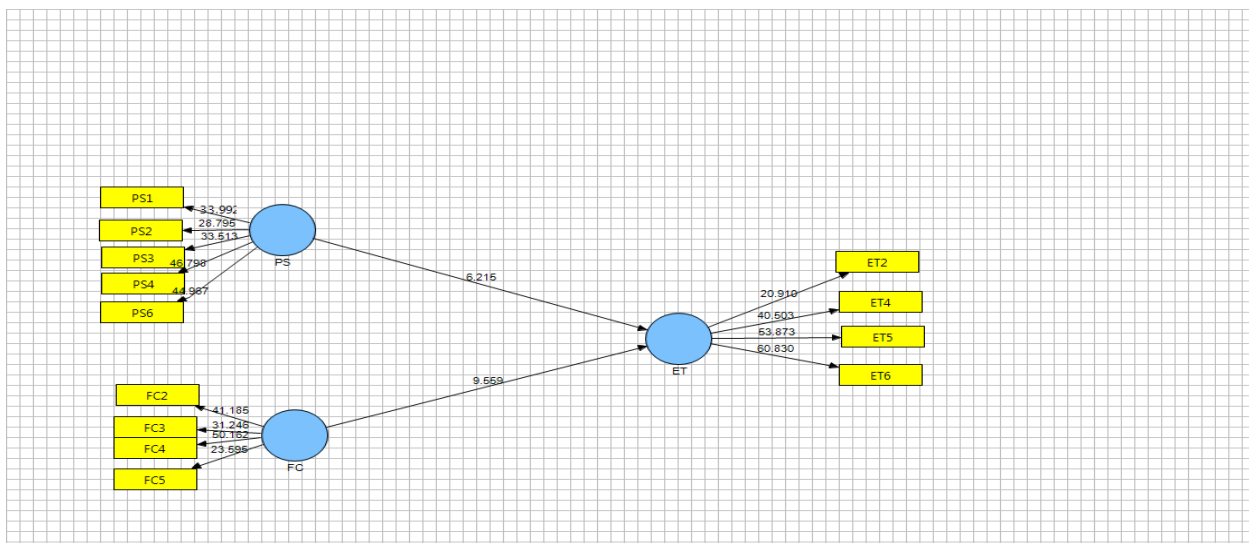


Figure 3: Structural Model

Table 3
 Structural Model Result

	Paths	b	SE	TV	PV	Decision
H1	FC -> ET	0.4695	0.049	9.5589	0.000	Supported
H2	PS -> ET	0.2923	0.047	6.2146	0.000	Supported

Effect size (F2) and Predictive relevance (Q2) determination

Apart from R^2 value evaluation, the researchers also estimated the effect sizes of the model. In order to do this, it is required that the changes that occur to the R^2 value when a particular exogenous variable is removed while running algorithm of the model should be recorded as this would assist to evaluate the contribution of the omitted variable on the endogenous latent variable (Chin, 1998). Going by the recommendation of Cohen 1988, and Selya et al. (2012) f^2 is calculated using the following formula:

$$\text{Effect Size } f^2 = \frac{R^2 \text{ included} - R^2 \text{ excluded}}{1 - R^2 \text{ included}}$$

Based on the guideline of Cohen (1988) effect sizes of 0.02, 0.15 and 0.35 are respectively regarded as small, medium and large (Adeleke et al., 2017). The effect sizes generated for perceived security and facilitating conditions are 0.283 and 0.111 respectively and which indicate medium and small effect sizes accordingly (Cohen 1988).

Additionally, the predictive relevance of the model was also calculated by following the blind folding technique (Geisser 1974; Stone 1974). In order to calculate this, it is suggested to apply cross-validated redundancy (Hair et al. 2013). Any value of Q^2 which is greater than zero for the endogenous variable is an indication that the model is very strong in terms of its predictive relevance. In this research, the Q^2 obtained is 0.244 for the endogenous latent variable and which suggests the predictive relevance of the research model (Adeleke et al. 2015; Chin 1998; Henseler et al. 2009).

Conclusion and Discussion

The primary objective of this study was to analyze the factors that determine trust in e-banking in Nigeria. The research successfully integrated perceived security with facilitating conditions (a core variable of UTAUT) in order to predict trust in the e-banking. Results indicated that facilitating conditions (FC) (p -value 0.000), and perceived security (PS) (p -value 0.000) positively influence trust in e-banking.

Facilitating condition was found to be significant positive predictor of trust in e-banking. This finding supports the results of past researches conducted in the field of IT/IS and other mobile technology adoption (Lu et al., 2005). This therefore implies that reliable and responsive customer support services, customer education around product features, availability of liquidity, and undisruptive internet facilities are some of the key factors to facilitate the trust in e-banking services. This is very sacrosanct as a number of customers especially in developing countries are not technologically confident while in their vulnerability, they tend to trust the e-banking service provider to effectively manage their money (Micheni et al, 2013).

Perceived security was equally found to be significantly and positively related to trust in e-banking. This finding supports the results of previous studies (Barkhordari et al., 2016; Rocas et al., 2009; Yousafzai et al., 2009) indicating that uncertainty reduction is very essential and a key component that makes customer to develop trust in e-banking platform. It further shows that if e-banking users are less worried about illegal use or unauthorized access to their financial information by third parties, they will develop high level of trust in the e-banking system.

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The theoretical implications of this study lie in its critical consideration of the effect of facilitating conditions and perceived security on the e-banking trust. While many previous studies have predicted online trust generally using different antecedents, very few predicted e-banking trust based on the factors used in this study. Through incorporation of facilitating condition and perceived security into this model, the need to conduct more researches that can be used to boost performance of e-banking has been addressed. This model can serve as a reference guide for academics for future prediction as it will also improve the comprehension of the relationships among the constructs of the study in the context of Nigeria, other developing countries and the globe at large.

Based on the findings of this study, a number of implications can also be drawn for the practitioners. For instance, the positive and significant relationship between facilitating condition and e-banking trust places obligations on bank managers and policy makers to ensure that facilities that would ensure that e-banking is operated with little or without hitch are put in place. The users of e-banking would develop trust when adequate supporting services like online enquiry, instant responses to queries, initial training and instructions on how to use e-banking platform, troubleshooting information and international regulations guiding overseas users are effectively instituted.

Moreover, perceived security significantly and positively predicts e-banking trust. The significant and positive relationship is further buttressed by the medium effect size (Q^2) of perceived security variable. This therefore suggests that banks in Nigeria need to develop strategies that could significantly reduce the customers' apprehension and concerns about e-banking services through which high level of trust can be developed. Since trust especially in the online transactions is more important than brick and mortar branch activities because of the absence of interpersonal interaction, protection techniques such as Padlock symbol, VeriSign, Virtual Keyboard, The letter's' in the URL, SMS alert, Sign on password expiry, instant lockout on numerous incorrect password entry and etc can be incorporated into online websites for the purpose of protecting the interest of e-banking users. Additionally, when simple graphic designs and statements indicating that e-banking activities are guaranteed, risk concerns of the users may be calmed. So also, a very precise and well-presented security policy may reduce security concerns and thereby assists in increasing the degree of trust.

The data of this were collected from 266 respondents through mall intercept. Therefore, the selected sample may be subjected to some bias. Furthermore, the respondents selected for the study were from Lagos and belong to diverse demographic group in an uneven pattern, which may influence the results of this research. Aside, only two antecedents of trust were tested while other crucial factors of the e-banking institutions which might influence trust were not taken into consideration. Many other important related factors such as perceived reputation, perceived privacy, perceived usefulness, perceived information quality, design quality, perceived risk and so on, which can engender e-banking trust can be researched by the future researchers. If some of these factors are included in the framework in the future, the R^2 of 45.2% which was explained by the two antecedents can be improved on.

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