

Electronic Banking Security as Requisite to Enhancing Customers' Satisfaction in Akure, Ondo State

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Abstract

Security breaches in electronic banking (E-banking) have created series of challenges to banks, their stakeholders and bank regulatory authorities in Nigeria. This study investigated the effect of E-banking security on customers' satisfaction in Akure, Ondo State, Nigeria. Data collected through the administration of 422 copies of questionnaire to customers of purposively selected commercial banks operating in Akure, Ondo state. Data collected were analyzed using multiple regression technique. The study found that e-banking reduces as the number of years of e-banking usage. It was also found that the extent of usage of e-banking facilities increases; while security of e- banking reduces as the frequency of usage of electronic banking reduces. The implication of this finding is that poor e- banking security has undesirable effect on customers' satisfaction; customers are exposed to the quandary of fraud, theft and robbery, hacking of mobile application and automated teller machines pin which reduces customers' satisfaction. It is therefore recommended that more efforts should be directed towards improving security of E- banking facilities. Outdated e-banking facilities such as; automated teller machines, point of sales and mobile application software should be replaced with more advanced and contemporary facilities that have adequate security features.

Keywords: Customers' satisfaction, security, reliability, electronic banking, multiple regression

1. Introduction

The prominence of banks in the recent years cannot be overemphasized as banks play a vital role in improving and stabilizing an economy through deposits mobilization, offering of credit facilities and rendering financial assistance of various forms (Oluwatoyin, *et al.*, 2011). Due to the diverse services that banks provide, a better method of improving customer's satisfaction has been sought and this led to the upsurge of e- banking. Internet/electronic banking is a mechanism of providing financial intermediation in a more robust and convenient manner through Unstructured Supplementary Service Data (USSD), mobile banking, electronic funds transfer (EFT), usage of automated teller machine (ATM), automatic bill payment (ABP), point of sales (POS), internet banking, agency banking and lots more (Yazdanifard, *et al.*, 2011; John and Rotimi, 2014; Rajesh and Palpandi, 2015).

Another meaning of electronic banking is Internet banking or E-banking which is widely acceptable all over the world as a fast and convenient method of carrying out financial transactions. The advent of E- banking is aimed at enhancing customers' satisfaction.

However, the growth of E- banking is being impeded due to associated lack of security of E-banking facilities emanating from incessant cyber-attacks, (Ajayi, 2006). Usually, the security threats of banks as identified by Central Bank of Nigeria (CBN) were either internal or external, contemporarily, the security problem confronting both banks and customers due to the advent of E- banking are both internal and external (Popoola, 2013; Ogunlowore and Oladele, 2014).

According to Oloyede, *et al.*, (2021), the techniques adopted by fraudsters is on the high side which if not curbed will render electronic banking obnoxious irrespective of its benefits. They stressed that most Nigerian banks spend huge amount of money as refund to customers whose money were lost through electronic fraud. This has the implication that banks affected have to bear huge financial burden and loss. Hence, the need to examine electronic banking security is expedient. Taiwo, Agwu, Babajide, Okafor and Isibor (2016) opined that the numerous risks that financial institutions are exposed to reduced their ability to carry out their duties effectively thereby making the electronic banking platforms of the banks unsecured.

Counterfeiting, identity theft, card trapping, cloning, malware attack, skimming, phishing and carding are the various devices used to defraud and steal from users of E- banking. The targets of electronic fraud include the individual bank customer, merchants, retailers, banking institutions, organizations and the government. However, majority of bank fraud in Nigeria are perpetrated through E- transfer and dishonest handling of computer records (Olaleye & Fashina, 2019). In this respect, this study seeks to examine the effect of E-banking security on customers' satisfaction in Akure, Ondo State, Nigeria. After this introduction, the rest of the paper contains, literature review, methodology, results and discussion of findings.

2. Literature Review

Chu, *et al.*, (2012) tested the relations among service quality, customer satisfaction, trust, security and loyalty in the context of electronic banking. Authors declare that if electronic banking service providers want to have strong relationships with clients, the essential factor is high quality of e-banking services which can have a direct impact on customer trust, satisfaction and loyalty. Also, Marimon, Yaya and Fa (2012) argue that there is a direct relation between service quality and customer loyalty in electronic trade. Effectiveness is the most important determinant of customer loyalty, whereas system accessibility and privacy protection were found to have a lower impact. Effectiveness means customers can easily access everything needed, transactions are realized fast, information is well organized, and there is a fast internet connection and user-friendliness.

Chen, Hsiap and Hwang (2012) created an IBCS model to investigate how internet banking influence customers satisfaction and it was found that content and format of electronic banking security increased customers satisfaction. Also, Bismark, Bismark, Isaac and Eric (2015) investigated the relationship between electronic banking and customer satisfaction in Ghana and found that improved e-banking service enhance satisfaction. Radesh and Palpendi (2015) also found that banking services through information technology platform improved customers' satisfaction. The study of Boot (2016) established that information technology improvement will promote customers satisfaction.

The impact of e-banking service quality on customer satisfaction in Lebanon was

investigated by Hammoud, Rima, and El Baba (2018) and it was revealed that reliability, efficiency, and ease of use; responsiveness and communication; security and privacy significantly impact customer satisfaction. Boots, *et al.*, (2018) examined the degree of customer satisfaction with e-commerce system in Saudi Arabia using modified American customer satisfaction index (ACSI) model and it was revealed that customer satisfaction with e-commerce system was affected by customer expectation, e-commerce service quality and perceived value.

Olaleye and Fashina (2019) focused on the effects and control of electronic banking fraud in Nigeria. The study descriptively analyzed data related to electronic banking fraud and it was found that there is significant relationship between e-banking practices in Nigeria and the rate of increase in the security of banking transactions. Oloyede *et al.*, (2021) examined the impact of electronic bank fraud on customers' trust in Nigeria based on logit regression and it was established that mobile fraud and website fraud posed more threat to customers' trust in electronic payment channels.

2.2 Theoretical Review

2.2.1 Open System Theory

According to the open systems theory, an organization interacts with, adapts to and seeks to control its environment in order to survive (Fowler, 2009). In modern business work environment pressures have an influence on the behavior of all organizations looking from the decision making process points of views. All these pressures have created a much more competitive environment for the business world. Making high-quality and timely decisions depends in part on data quality and the availability of on-line and real-time information. In recent times which is characterized by stiff competition, corporate bodies are consistently evolving means of improving their efficiency and performance. (Kloviene & Gimzauskiene, 2014). Electronic banking facilities are used to facilitate business transactions (Rezaee, Elam & Sharbatoghlie, 2000), Electronic banking facilities are accountable for designing, implementing and maintaining many of controls over an organization's business processes (Consoli, 2010). E-banking has influence on all business processes including accounting (Saban & Efeoglu, 2012).

Accounting system with effective electronic facilities has the principal function of recording and collection of data and information about economic events of an organization and the maintenance, processing and communication of information to both external and internal stakeholders (Kundeliene, 2011), providing the financial information for decision making within the organization (Salehi, Rostami & Mogadam, 2010). Consequently, because information exists only in electronic form accounting procedures have switched and different techniques were devised.

Thus, this theory is useful for this study as it could be seen that information technology through the adoption of electronic banking tools have changed the roles of bank workers in business from information collection, preparation, analysis to the part in the functions of control, interpretation, assessment and decision-making in order to satisfy customers (Yeh, Lee & Pai, 2012; Saban & Efeoglu, 2012; Christauskas & Miseviciene, 2012; Kloviene & Gimzauskiene, 2014).

2.2.2 The Theory of Reasoned Action

The Theory of Reasoned Action (TRA) which was formulated in 1975 by Fishbein and Ajzen has been used extensively in marketing research and banking sector to explain the behavioral aspect of customers in the adoption of technologies. This theory has been used to explain the behavior beyond the acceptance of technology and includes four general concepts: behavioral attitudes, subjective norms, intention to use and actual use. It explains that individuals assess the result of a behavior and create resolution to act in line with their assessment. TRA more importantly preaches that individual behavior can be foretold from their intention which in turn can be anticipated from their attitudes towards electronic products. Following the sequence of prediction, attitudes can be predicted from an individual's beliefs about the consequences of their actions in using a product (Yeh, *et al.*, 2012; Saban & Efeoglu, 2012). Hence, TRA is quite appropriate in predicting the behavior of customers in using technologies in banks as banking technologies enhance and facilitates banking transactions and hence stimulate satisfaction. This theory thus asserted that what determines the utilization of banking technological product is the behavior and attitude of customers towards the products.

2.2.3 Theory of Planned Behavior

Early studies mainly focus on theory of reason action (TRA) as identified by Fishbein and Ajzen (1975). TRA depends on the fundamental variables of attitude and subjective norm. The two variables are seen to have direct influence on individuals' behavioral intentions, which positively induce individuals' actual action. Attitude is an individual's positive or negative evaluation of self-performance of a specific behavior. TRA is the extent to which the carrying out of the behavior is negatively or positively valued. Subjective norm is an individual's view about particular behavior, which is swayed by the decision of significant others like parents, spouse, friends and teachers. Behavioral intention is a sign of an individual's preparedness to perform a given behavior and it immediately comes before the behavior, however, TRA articulates that behavior is based on volitional control of one's strength of character. (Fishbein & Ajzen, 1975).

Thus, Ajzen (1985) modifies TRA proposing the theory of planned behavior (TPB). Ajzen (1985) proposes TPB to explain and predict human behavior patterns. TPB improves the theory of TRA by adding behavioral control in to account for the uncontrollable factors of individuals which influenced that behavior in using electronic banking gadgets. TPB is founded on the three factors which include subjective norm (SN), attitude and perceived behavioral control (PBC). Hence, behavioral intention in using electronic banking is influenced by these factors. Among all PBC refers to individual's recognized difficulty or ease of performing a particular behavior which include the usage of technologies for banking transactions (Ajzen, 1985).

3. Data and Methods

This study employed survey research design to obtain information on e- banking and customers' satisfaction. This enabled the researchers to collect information and relevant data on how electronic banking security influences customers satisfaction from which inferences and conclusion were drawn. The population is made up of commercial banks' Customers in Akure. Customers were drawn from First Bank of Nigeria PLC., Zenith Bank of Nigeria PLC., Guarantee Trust Bank of Nigeria PLC, Polaris Bank of Nigeria PLC., Access Bank of Nigeria PLC and Union Bank of Nigeria PLC. These banks were selected for the reason of

their large volume of deposit, operational activities and transactions which show the depth of their customers' base (Central Bank of Nigeria, 2018). The study's sample size was obtained using the Mugenda and Mugenda (2004) formula for obtaining infinite sample. This is given as:

$$n = \frac{z^2 n^2}{e^2}$$

A confidence level of 95% will be used that is, there is 95 chances in 100 (or 0.95 in 1) that the sample represents the true condition or sample population. The variable "n" represents the unknown sample size which is the population within a specified precision range against 5 chances in 100 (or 0.05 in 1), Margin of error is denoted by "e" and will be put at 0.005 precision which is the range within which the answer may vary and still be accepted, this translates to the following:

$$\begin{aligned} \text{Sample Size (n)} &= \frac{(1.96)^2 (0.05)^2}{(0.005)^2} \\ &= \frac{3.8416 \times 0.0025}{0.000025} \\ n &= 384 \end{aligned}$$

To guarantee that enough respondents were sampled, 10% of the calculated sample size was added to the sample size thus: $110/100 \times 384 = 422$, thus, a total number of 422 customers were selected based on purposive sampling technique using questionnaire to obtain data from the respondents. The work used multiple regression technique of ordinary least square (OLS) to ascertain the effect of security of E- banking, reliability of E- banking and availability of E- banking on customers satisfaction proxy by years of usage of E- banking, frequency of usage of E- banking and extent of usage of E- banking.

3.1 Model Specification

This is centered on Kano's theory (1984) which stressed the role of technological improvement in enhancing customers' satisfaction via basic needs, the one dimensional or performance needs, and the attractive or excitement needs. Three models were deployed in the study, the dependent variable which is customers' satisfaction was represented with three variables of years of usage of E- banking, frequency of usage of E- banking and extent of usage of E- banking, security of e- banking is the independent variable of focus while reliability and availability of e- banking were set of control variables used in the regression. Thus the study's model is:

$$YSEB = \beta_0 + \beta_1 SEC + \beta_2 AVB + \beta_3 REB + e \dots\dots\dots 1$$

$$FSEB = \beta_0 + \beta_1 SEC + \beta_2 AVB + \beta_3 REB + e \dots\dots\dots 2$$

$$ESEB = \beta_0 + \beta_1 SEC + \beta_2 AVB + \beta_3 REB + e \dots\dots\dots 3$$

Where:

YSEB = Years of usage of E- banking

FSEB = Frequency of usage of E- banking

ESEB = Extent of usage of E- banking

SEC = Security of E- Banking

AVB = Availability of E- Banking

REB = Reliability of E- Banking

β_0 = Constant

$\beta_1 - \beta_3$ = Coefficient of the parameters

e = Error Term

4. Data Analysis and Discussions of Findings

4.1 Test of Overall Significance

Table 1 shows the joint significance of the variables contained in every of the study's three models and their F statistics is significant in all the cases. This implies that E- banking security with the control variables of availability and reliability of E- banking has significant effect on customers' satisfaction proxy by years of usage of E- banking, frequency of usage of E- banking and extent of usage of E- banking, these findings are similar with the findings in Chen *et al* (2012), Hammoud *et al* (2018) and Oloyede *et al* (2021).

Table 1: Overall Significance Test

Dependent Variables	F-Statistic	Prob.
Number of Years of E- Banking Usage	15.635	0.000*
Frequency of Usage of E- Banking	5.255	0.001*
Extent of Usage of E- Banking Facilities	20.514	0.000*

Source: Authors' Computation, 2021

4.2 Electronic banking security and customer satisfaction

Table 2 indicates that in Akure, Ondo state, security of E- banking reduces as the number of years of E- banking usage and the extent of E- banking facilities increase; furthermore, security of E- banking reduces as the frequency of usage reduces. With reference to availability and reliability of E- banking, as availability of E- banking reduces number of years of E- banking usage and the frequency of usage of E- banking increases but the extent of usage of E- banking facilities reduce. Lastly, as the reliability of E- banking reduces, the frequency of usage of E- banking and the extent of usage of E- banking facilities increases but number of years of E- banking usage also reduces.

Table 1: Coefficients Parameters

Variables	Coefficients	Prob.	Coefficients	Prob.	Coefficients	Prob.
Constant	1.984	0.000*	2.887	0.000*	0.092	0.872
SEC	-.010	0.095	.006	0.563	-0.042	0.000*
AVB	-.035	0.007*	-.018	0.448	0.113	0.000*
REB	.040	0.000*	-.045	0.001*	-0.003	0.790

Source: Authors' Computation, 2022

5. Conclusion and Recommendations

The deployment of E- banking in Nigeria has continued to increase in recent years and financial intermediaries have spent huge amount of money to provide E- banking facilities so as to promote financial inclusion and improve customers' satisfaction. However, the issue of security of e- banking has created series of challenges to banks, stakeholders and bank regulatory authorities in Nigeria. Thus, this study investigated the effect of E- banking security on customers' satisfaction in Akure, Ondo State. This study established that poor electronic banking security has undesirable effect on customers' satisfaction, it has the implication that even as the number of years of E- banking usage and the extent of E- banking facilities increase security features of E- banking reduces undermining its safety. In Nigeria E- banking users have been exposed to the predicament of fraud, theft and robbery, hacking of mobile application and automated teller machines pin which reduce customers' satisfaction. Thus, it is suggested that more efforts should be directed towards improving security of e- banking facilities. Outdated electronic banking facilities like automated teller

machines, point of sales and mobile application software should be replaced with more advance and secure facilities.

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