

REVIEW ARTICLE

ISSUES AND CHALLENGES OF ONLINE BANKING

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ABSTRACT

Online banking and e-commerce have begun to shape our world today. People can now make purchases and pay for goods and services online. However, some banks' customers are skeptical of the bank service as they have refused to join this train, and hence many refuse to collect their ATM cards let alone do business with it. This has prompted this researcher to carry out a survey on the security measures put in place by Nigerian banks to protect their customers in order to gain banks' trust. The method of data analysis was based on the statistical table format using frequency distribution and consequently converted into percentages for easy analysis. Each tabular presentation represents the analysis of each question in the questionnaire which was subsequently described and represented with charts. In all, eighty (80) questionnaires were administered of which seventy were returned. This formed the basis for our analysis and conclusion.

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INTRODUCTION

In today's world, banks are trying to remain relevant by attempting to be counted amongst the best service providers, hence they are buying into the technology that will enable them spend less time to attend to their customers (not to waste customer time), automate their banking services, provide ATM services to enable on-the go customer access to physical cash in remote areas, to pay for goods and services through the internet, to transfer cash from one bank account to another, etc. this is the idea behind internet banking and e-commerce. The technology involves a secured website put in place by the banks to provide the platform for customers to make transactions. This system which has provided such a convenience is wonderful, but a security threatened technology and have not escaped the notice of online criminals, creating serious security issues, which is causing panic among users of the system.

Some of the issues include

- Exposing the bank systems
- Placing ATM systems in risky environments or remote places (it is isolated)
- Encouraging criminal activities
- Providing room for acts such as phishing, pharming, vishing, smshing, etc.
- Cloning of sites to defraud customers.

Ganesan and Vivekanandan (2009) considered internet banking as the automated delivery of new and traditional banking products and services directly to customers through electronic, interactive channels. According to Gerard and Cunningham (2003), internet banking is an umbrella term for the process by which a customer may perform banking transaction electronically without actually visiting the banking hall.

This transaction may include

Using an ATM to withdraw cash, e-commerce, paying for goods and services online and transferring money from one bank account to another. Daniel (1999) and Vivekanandan (2009) opined that with the need to carry out commercial transaction online, the risk could actually discourage the customer. The question now is, have banks adequate mechanisms in place to provide the desired security?

Kesh et al. (2002) noted that the primary goals of security are

- Confidentiality
- Integrity
- Availability
- Authorization
- Non Repudiation
- Privacy

These days, online criminals have so developed their skills such that they far outsmart the security features that developers of software are building into internet systems. The type and style of attacks now are very sophisticated as the dedicated

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criminals are perpetually looking for loopholes. For instance, it is now possible for one to transfer huge sums of money from one bank account to another from remote places within his or her bedroom with no need to enter any banking hall but from probably your computer, all one needs to do such transfer is the account owners ATM card details.

These include

- ATM card number
- 4-8 digit code of security
- Date of expiry of card
- PIN

This is a major reason why many customers do not subscribe to the use of ATM cards.

According to Johnson (2007), the attacks of this age in internet baking operations can be grouped into four types

- Getting authentication credentials from victim
- Modifying the victims legitimate transactions
- Denying the victim access to a banking service
- Observing the transactions of a victim without permission.

In Nigeria, some people out rightly reject collection of ATM cards from their bank and out rightly reject online services. With all these issues on ground, they actually have reasons to express their fears. In this paper therefore, the researcher collected facts from information technologists (IT) and database administrators / personnel in the selected banks and their reaction and their experience with the systems as they relate with the customers and systems directly.

MATERIALS AND METHODS

The researcher adopted a survey technique. The research work looked at 12 popular banks in Nigeria which constituted the population studied and as such an area of Edo (Benin) and Delta (Abraka) was selected for the study. A population of one hundred (100) was targeted and 80 were finally sampled and 70 responded which was studied. The target population was IT personnel's and database experts from the selected banks. The instrument of data collection for this research work is a distributed questionnaires. The primary and secondary sources of data collection were adopted in this research work.

Primary Source: Data in the category were collected mainly through visits, personal participation and observation and distribution of questionnaires to the bank under study. The various methods were adopted independently to reduce the incidence of bias or subjective views about the subject on investigation.

Secondary Source: Secondary data in this research work were collected through the review of related literature; the relevant literatures were obtained from books journals, magazines, and newspapers. Consequently, libraries were consulted; prominent among them were the University in Benin library, and the Delta State University main library. Information from the internet was also valuable.

To accomplish the research, analysis of the data was of utmost importance since the data collected was not fully in the same order and as such could not make any meaning to the reader.

Direct report of the qualitative data from observation is made while descriptive statistics was utilized in the analysis of the descriptive data collected from questionnaires to generate frequencies and percentages. Statistical analysis is carried out on each of the research questions based on the data extracted from the computation of data which was effected using simple percentages after which comparisons were done to determine the effectiveness in achieving the desired objectives are as follows:

Objective 1: To determine the extent of preparedness of the financial institution to identity threats.

Objective 2: To determine the major problems associated with the development of electronic banking in the Nigerian economy.

Objective 3: The ascertain the effect of security in electronic banking systems and e-commerce.

Objective 4: To identify the impact of trust in the electronic banking systems.

Objective 5: To show the impact of trust in internet banking compared with offline services.

Data presentation, interpretation and analysis

Objective 1: To determine the extent of preparedness of the financial institution to identity threats.

- Q. Does your institution have a comprehensive risk management framework in place to continuously Identify threats and vulnerabilities?

Table 1. Bank having comprehensive Risk Management framework in place to combat threats

Variables	Frequency	(%)
Yes	45	64
No	25	36
Total	70	100

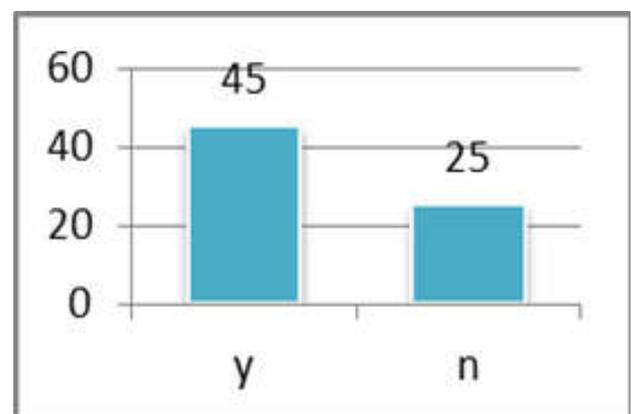


Fig. 1. A chart showing banks having a comprehensive risk management framework in place to continuously identify threats and vulnerabilities?

- Q. Are formal information security policies and procedures available which include e-banking activities?

Table 2. Response to the question of availability of formal information Security policies and procedures

Variables	Frequency	Percentage (%)
Yes	70	100
No	-	-
Total	70	100

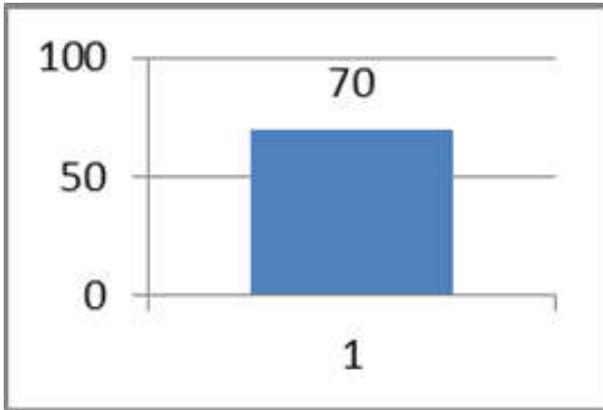


Fig. 2. Response to the question of availability of formal information security policies, and procedures which include e-banking activities

- Q. Has your institution implemented cryptographic technologies to maintain confidentiality and integrity of sensitive information?

Table 3. response to implementation of cryptographic technologies to maintain confidentiality and integrity of sensitive

Variables	Frequency	Percentage (%)
Yes	60	86
No	10	14
Total	70	100

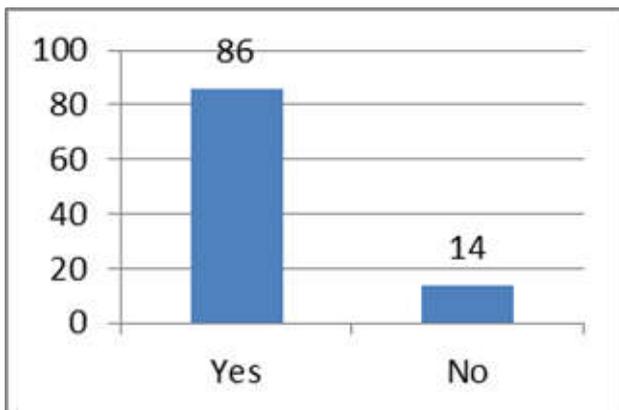


Fig. 3. response to implementation of cryptographic technologies

- Q. Does your institution have an authentication procedure in use to validate the identity of your e-banking customers when applying for an internet account or bank cards?
- Q. To what extent are the problems hindering the adoption of internet banking, and e-commerce in Nigeria?

Table 4. Response to institutions having an authentication procedure in use to validate the identity of their e-banking customers when applying for an internet account or bank cards?

Variables	Frequency	Percentage (%)
Yes	42	60
Not sure	28	40
No	-	-
Total	70	100

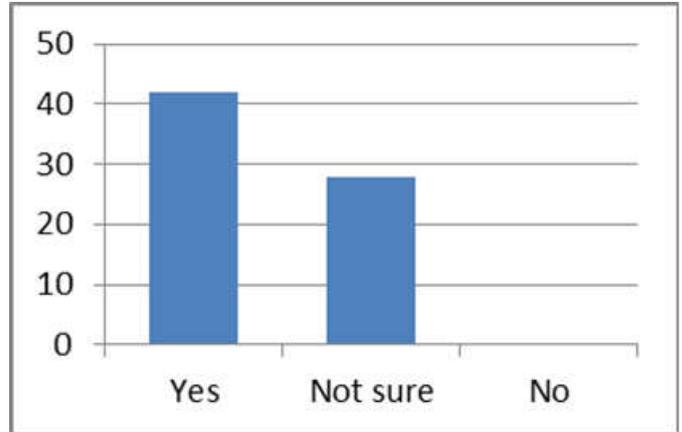


Fig. 4. Response to institutions having an authentication procedure in use

On the list of problems hindering the implementation of internet banking and e-commerce system in Nigeria is the problem of security concerns, which is associated with fraud prevention and privacy concern. 50% of the respondents recertified it was having a very great impact on the development of internet banking system in Nigeria. 10 respondents, representing 14.5% respectively identified the problems of high charge or cost in using the payment terminals, while 15 respondents constituting 21% said that Infrastructure deficiencies such as critic power supply and communication link has little impact on the development of internet banking system in Nigeria. 10 respondents representing 14.5% complained that there is low level of awareness and over dependence on cash by the public for all types of transaction in the economy.

Objective 3: The effect of security in electronic banking system and e-commerce

Q. Would you say Security is a threat which can prevent data transactions or allow unauthorized access to the accounts through network attacks or hacking, etc.

Objective 4: The impact of trust in the electronic banking systems.

Q. Can Trust on the bank play an important role in the adoption of internet banking services?

Q. Customer-oriented privacy policy of the banks leads to the adoption and continued use of internet banking?

Objective 5: The impact of trust in internet banking compared with offline services

Q. Is your trust in internet-banking service as strong as compared to trust in offline services provided by the bank?

Table 5. Response to question: To what extent are the problems hindering the adoption of internet banking and e-commerce in Nigeria?

Problem	Large extent	Some extent	Partly	No extent	%
A Non- provision of adequate security for fraud prevention	35	-	-	-	50%
B Infrastructure deficiencies such as power supply and communication link	-	-	15	-	21%
C Inadequate skilled managers and requisite tools on end users and client systems	-	-	-	-	0
D High charge or cost for the e-payment terminals	10	-	-	-	14.5%
E Lack of government support on improvement of e-banking	-	-	-	-	0
F Low level of awareness and over dependence on cash by the public for all types of transactions	10	-	-	-	14.5%
Total	70				100%

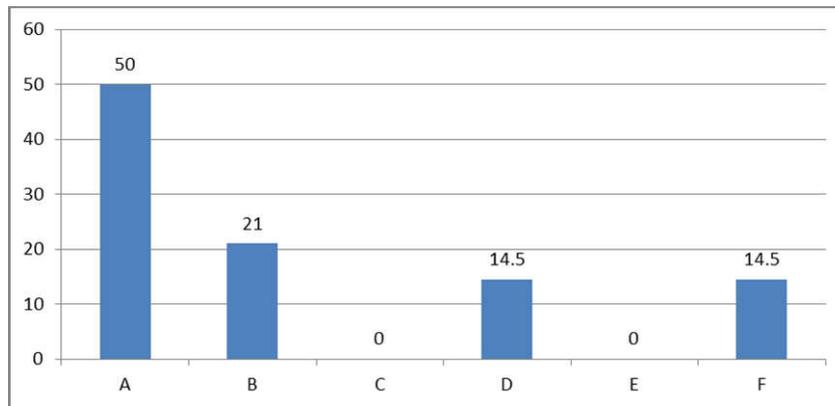


Fig. 5. The extent to which problems are hindering the adoption of internet banking and e-commerce in Nigeria

Table 6 Security plays a vital role in internet banking adoption and continued use?

Variables	Frequency	Percentage (%)
Yes	45	64
No	25	36
Total	70	100

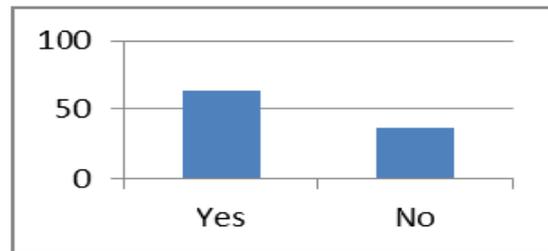


Fig. 6. The effect of security in electronic banking system and e-commerce

Table 7: Security is a threat which can prevent data transactions or allow unauthorized access to the accounts

Variables	Frequency	Percentage (%)
Strongly agree	45	69
Agree	15	21
Strongly disagree	10	10
Disagree	-	-
Total	70	100

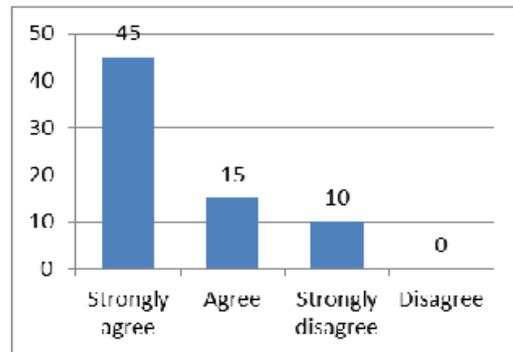


Fig. 7. Security is a threat that can prevent data transaction

Variables	Frequency	Percentage (%)
Yes	20	29
No	50	71
Total	70	100

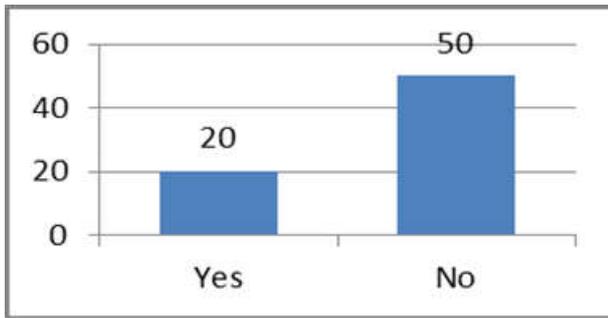


Table 9. Customer-oriented privacy policy of the banks leads to the adoption and continued use of internet banking

Variables	Frequency	Percentage (%)
Strongly agree	50	71
Agree	8	11
Disagree	12	18
Total	70	100

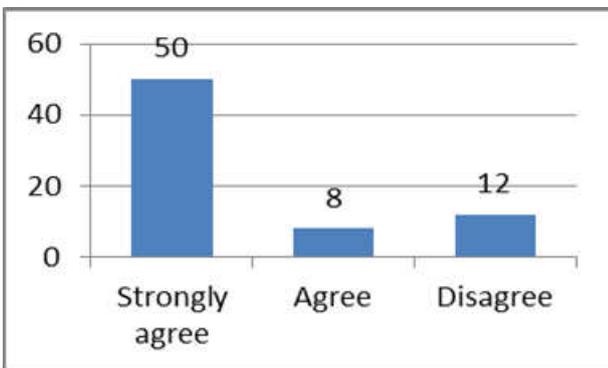
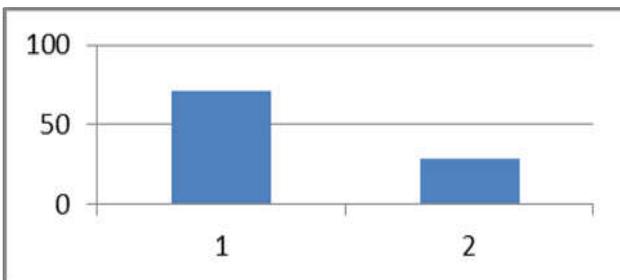


Fig. 9. Customer-oriented privacy policy of the banks leads to the adoption and continued use of internet banking

Table 10. The impact of trust in internet banking compared with offline services

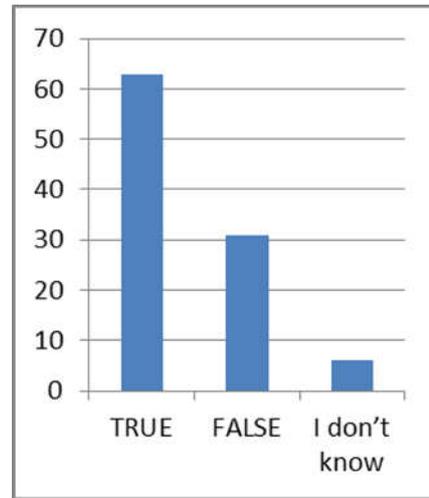
Variables	Frequency	Percentage (%)
Yes	50	71.5
No	20	28.5
Total	70	100



Q. Unique integrated and customized financial services are important in the adoption of internet banking and ecommerce?

Table 11. Unique, integrated and customized financial services are important in the adoption of internet banking and ecommerce

Variables	Frequency	Percentage (%)
True	42	63
False	22	31
I don't know	4	6
Total	70	100



Q. Does your institution have adequate staff with the necessary knowledge and skills to deal with the technical complexities of e-banking?

Table 12. Does your institution has adequate staff with the necessary knowledge and skills to deal with the technical complexities of e-banking

Variables	Frequency	Percentage (%)
True	50	71
False	15	21
I don't know	5	8
Total	70	100

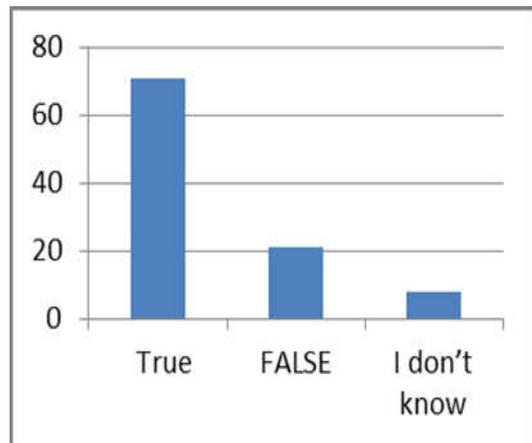


Fig. 12: Does your institution has adequate staff with the necessary knowledge and skills to deal with the technical complexities of e-banking

DISCUSSION OF RESULTS

From our research, it is clear that a good number of banks in Nigeria have a framework for risk management in place. They also agreed that they have formal information security policies and procedures available for e-banking activities. On the availability of authentication procedures for validation, 60% of the respondents agreed that it is in place and about 40% responded negative and this is somewhat risky. 40% may appear small, but in security terms this is very significant. 50% of the respondents affirmed that the non-provision of adequate security for fraud prevention was having a significant impact in the adoption of e-banking and e-commerce. That power supply

communication breakdown (e.g. ATM failure, network) are also issues of concern while some minor issues like charges terminals for transactions and low level of awareness of such transaction take up about 15% each. From the analysis of the respondents about 69% are strongly convinced that security is an important fact that can prevent data transaction and 64% believe that security plays a vital role in its adoption and continued use and 36% however have a contrary opinion. On the trust of bank playing any important role in the adoption of internet banking services, 71% of the respondents are of the view that it is not while only 29% believe it does. About 71% of the respondents agreed strongly that of the privacy policy of banks is customer oriented then it will lead to its adoption and continued use. As seen in figure 10, electronic payment has gained the trust of customers as over 71% share this opinion while the rest do not support this. Also, 63% of the respondents are of the view that unique, integrated and customized financial services are important in the adoption of internet banking and e-commerce services while 31% are contrary. On the availability of adequate with necessary knowledge and skill to deal with the technical complexities of e-banking 50 respondents 71% agreed and about 21% were either contrary or undecided.

Conclusion

Though the advantages of e-banking are numerous, it also comes with its challenges. Some faulty terminals or system could be discouraging and privacy between bank and customer can be compromised by hackers. The growing appetite of phishers is also increasing. There has been a generally suggestion that a proper user education may go a long way in stemming most of the popular and dangerous attacks on user accounts, and every report of breach should be exhaustively investigated and done with completely to gain customers confidence. Finally, the dishonest insider divulging customer should not only be sacked but exposed so that other financial institutions can avoid him/her and made to face justice in the court of law. The slow approaches to combating and prosecuting cybercrimes in electronic banking in Nigeria, low level of awareness of crimes that are occurring are also worrying. If all these issues are considered it may make most customers have a re-think.

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