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**HYPOTHESES** 

RESEARCH METHODOLOGY

**RESULTS & DISCUSSION** 

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# ADOPTION OF INFORMATION TECHNOLOGY AND BANKS PERFORMANCE: A SURVEY OF SELECTED BANKS IN NIGERIA

SAMSON YIMKA ALALADE

LECTURER

DEPARTMENT OF ECONOMICS, BANKING & FINANCE

BABCOCK BUSINESS SCHOOL

BABCOCK UNIVERSITY

ILISHAN REMO OGUN STATE

KEMI OMONIYI FINANCIAL OFFICER JFK INVESTMENT LTD. LAGOS STATE

BOLANLE O. AMUSA

LECTURER

DEPARTMENT OF BUSINESS ADMINISTRATION

GATEWAY POLYTECHNIC

SAAPADE

#### **ABSTRACT**

The use of Information Technology (IT) systems has changed the way banking operations are carried out all over the world, the volume and the speed of banking transaction has improved tremendously as a result of quantum growth in IT which has created business opportunities for the banks that have tapped into IT. This research aimed at finding out the extent to which Nigerian banks have implemented IT Systems and its effects on cost effectiveness, competitive advantage, service delivery and staff efficiency which were used as sub-dependent variables, individually and jointly. Questionnaire was used to elicit information for the research. The data gathered through the questionnaire was analyzed on Statistical Package for Social Sciences (SPSS) version 17. Linear Regression analysis was carried out to determine the effect of the independent variable on the dependent variables. The t, F and Durbin Watson statistic tests were also carried out to determine the individual significance, overall joint significance and goodness of fit of the model respectively. It was found from the research that IT adoption indeed has a positive significant effect on banks performance with a coefficient of 0.533, which simply means that 53.3% of the changes in performance are explained by IT use. The regression analysis of IT adoption of cost effectiveness, competitive advantage, service delivery and staff efficiency showed positive coefficients of 0.389, 0.397, 0.527 and 0.818 respectively. It was discovered during the course of the research that customers are either ignorant of IT services being offered by the banks or are too afraid to use them due to the associated risks. It was recommended that banks should create awareness of the availability of these services to their customers, mitigate risks of cyber frauds, increase their bandwidth to prevent network failures and that bank staff should engage in self development to be able to cope with ever changing technology.

#### **KEYWORDS**

Cost Effectiveness, Competitive Advantage, Service Delivery, Staff Efficiency.

#### INTRODUCTION

anking business is heavily dependent on information related to the fund market, which includes fund suppliers, fund users, brokers, information related to the central bank, and Ministry of Finance directives that they have to follow; and information related to their competitors. Besides, their business also includes providing financial information to their customers. Commercial banks are highly information intensive, hence, the need for use of Information Technology (IT) for collection, storage, retrieval, processing, transmission, and distribution of information in carrying out their various operations.

Banks have come to the realization that future banking requires more of electronic manipulations and shuffling of bits-based money and other banking transactions, instead of paper work and also that the efficiency of their operations depends largely on the extent to IT systems are adopted and implemented in an innovative manner. Hence, paper based transactions are now being replaced by electronic-based transactions and this area has been considered to be a major competitive ground for banks that are operating in the post-consolidation era.

As the range of banking businesses became wider and more complex, it became very imperative for all sectors to be connected with a modern means that would be simpler, faster and more convenient (Accad, 2009). The banking industries are now getting connected with the information technology facilities which make banking operation, service and business activities easier, faster, more efficient, and more effective for individuals and organizations alike to transact their various businesses. The impact has become far reaching to the extent that organizations jostling for relevance in a competitive environment cannot help but embrace the potentials of the e-revolutions (Idiaro, 2010).

Information technology has radically changed how banking is done all over the world, the volume and speed of banking transaction has improved tremendously as a result of quantum growth in information technology which has created business opportunities for banks (Cohen, 2001). The positive impact of Information Communication Technology (ICT) on the global criteria, especially improved revenue corroborates with the findings of Laudon and Laudon (1991), who studied the entire cash flow of 500 large companies and linked their success to Information System. They concluded that IT directly affects how managers decide, how they plan and what products and services are produced.

The banking industry in Nigeria has witnessed tremendous changes linked with the developments in ICT over the years. In Nigeria, Information technology gave birth to electronic banking; this presents benefits such as anywhere banking, anytime banking and elongated banking hours to customers. These benefits provide comfort, convenience and ease of bank transactions. Before the advent of electronic banking, customers could only make transactions from a bank's "brick and mortar" branch offices (Goodhart, 2000). Electronic banking has facilitated the integration of the functions of some large banks that have several branches around the country on a centralized network so that transactions can be carried out at any branch on the network without the customer being physically present in the branch (Harold & Jeff, 1995).

In addition, the inception of electronic banking in Nigerian banks enables customers to access their accounts and perform online transactions anytime of the day, as they would on the physical floors of the bank at their own comfort, pace, and convenience without any human intervention. The omission of middlemen

in the electronic banking operation is also beneficial to the bank in terms of reduced labor costs and increased efficiencies in the banking operations which may enable the bank to provide value-added services such as free online banking to its customers (Lee & Longe-Akindemowo, 1999).

Although a lot of studies have been carried out on the prospects and challenges of Information Technology Adoption, these studies are broad based and only few are actually carried out on the role of IT in modern banking operations and its resulting effect on banks' overall performance. It is as a result of this that, that this, that this research work is based on Information Technology Adoption into banking operations of selected banks and the resulting effect on the banks' overall performance.

#### THE PROBLEM

In line with the current developments in the Adoption of Information Technology systems in banking operations, it is observed that although, previous studies have concluded that Information Technology adoption has appreciable positive effects on Banks' profitability, productivity, banking services, customer perceptions, and employee perceptions individually, only few have actually considered an aggregate of these areas of performance and examined the effect of IT adoption on overall performance. Most studies are focused solely on the resulting profitability effect without considering what contributes to the profitability. Also, the profile end customer is ever changing; they are becoming mobile and not relying on a single banking transaction line. It is in line with these issues that this study aims to establish the extent to which IT systems have then implemented in Banking operations and the resulting effect on Banks' overall performance in Nigeria.

#### **RESEARCH QUESTIONS**

This research work is guided by the following research questions:

- 1. To what extent has Information Technology systems been adopted in Nigerian banks in terms of;
  - a. Office automation
  - b. Internet banking
  - c. Automated teller system
  - d. Electronic funds transfer
- 2. How has the adoption of IT systems impacted on the performance of Nigerian banks in terms of:
  - a. Cost effectiveness of their operations
  - b. Competition
  - c. Service delivery
  - d. Efficiency of staff
- 3. Is there any significant relationship between IT adoption and Banks' performance?
- 4. Does IT adoption have any significant effect on Banks' performance?

#### **RESEARCH HYPOTHESES**

The in order to achieve the objectives of this study, the following null hypotheses will be tested;

- 1. There is no significant relationship between Information Technology adoption and Banks' performance.
- 2. Information Technology adoption has no significant impact on Banks' performance.

#### **OBJECTIVES OF THE STUDY**

The broad objective of this study is to examine the prospect of Information Technology in modern banking operations in Nigeria. Specifically, the study aims to:

- Determine the extent to which the banks' have adopted IT systems;
- Determine the impact of IT adoption on areas of performance such as cost effectiveness, sectoral competition, service delivery, and staff efficiency;
- 3. Examine the impact of IT adoption on overall Bank performance.

#### **REVIEW OF RELATED LITERATURE**

Opara, Olotu and Maclayton (2010) investigated the impact of technology on Relationship Marketing Orientation (RMO) and Business Performance (BP) of the Nigerian banks and found that electronic internet, telephone banking and computerization of services as components of technology have greatly influenced RMO to yield an increased Business Performance. They therefore concluded that, to enhance desired value from both quality products and quality services of the Nigerian banks, technology is needed to offer improved quality services to customers in order to meet their needs and put smiles on their faces.

Osho (2008) examines the use of technology in the banking industry and how it has helped banks evolve into a profitable market and found that banks and other financial institutions rely on technology to capture total and accurate customer view as well as assist in the areas of product marketing, decision making, improving customer service and retention by adding or upgrading customer relationship type solutions. Zarehan, Nahariah and Ong (2009) notes that IT is a means to enjoy economies of scale in production, development of new product and services, creation of knowledge, as well as to instill product quality and service efficiency and as such, observed that investment in IT has recently surged considerably worldwide.

The vast majority of the recent literature on the role of IT in modern banking operations as regard electronic money and banking suffers from a narrow focus. It generally ignores electronic banking entirely and equates electronic money with the substitution of currency through electronic gadgets such as smart cards and virtual currency. For example, Freedman (2000) proposed that electronic banking and electronic money consist of three devices: access devices, stored value cards, and network money. Electronic banking is simply the use of new access devices and is therefore ignored. Electronic money, then, is the sum of stored value (smart) cards and network money (value stored on computer hard drives). What is most fascinating, and revealing, about this apparently popular view is that electronic banking and electronic money are no longer functions or processes, but devices (Alter, 2002).

Irechukwu (2000) lists some banking services that have been revolutionized through the use of ICT as including account opening, customer account mandate, and transaction processing and recording. ICT has provided self-service facilities (automated customer service machines) from where prospective customers can complete their account opening documents directly online. It assists customers to validate their account numbers and receive instruction on when and how to receive their cheque books, credit and debit cards. Communication Technology deals with the Physical devices and software that link various computer hardware components and transfer data from one physical location to another.

ICT products in use in the banking industry include Automated Teller Machine, Smart Cards, Telephone Banking, Magnetic Ink Character Reader (MICR), Electronic Funds Transfer, Electronic Data Interchange, Electronic Home and Office Banking. The use of Information technology in banking operations is called electronic banking. Electronic banking is a product of e-commerce in the field of banking and financial services. In what can be describe as Business – to – Consumer (B2C) domain for banking industry, electronic banking offers different online services like balance enquiry, request for cheque books, recording stop payment instruction, balance transfer instruction, account opening and other forms of traditional banking services. Banks are also offering payment services on behalf of their customer who shop in different e-shops (Irechukwu, 2000).

For many bank customers, electronic banking means being able to operate current and savings accounts from any point of their bank's branch network or 24-hour access to cash through an automated teller machine (ATM). However, e-banking now involves much more. Today, e-banking also known as electronic funds transfer (EFT) uses computer and electronic technology as a substitute for cheque and other paper transactions. EFT's are initiated through devices like cards or codes that allow authorized persons access to the linked accounts (Nwaze, 2008; Connel & Saleh, 2004).

E-banking offers several services as follows (Irechukwu, 2000; Connel & Saleh, 2004):

- Funds Transfer Messaging Systems: these allow the use of secure financial messages to effect transfers between banks, e.g. SWIFT. 1.
- 2. Prepaid value Card: this acts as an electronic purse to the cardholder. Money that is pre-loaded on chip based cards is spent at merchant and point-of-sale (POS) locations. These cards are reloaded with cash by the cardholder when necessary.
- 3. Debit and Credit chip based cards: These are used for operation of accounts through the credit card scheme.
- 4. Direct Deposit: this enables the authorization of specific online deposits such as paying cheques to an account on a regular basis. It also allows for preauthorization of direct withdrawals so that recurring bills such as insurance premiums, mortgages, and utility bills are paid automatically.
- Automated Teller Machine (ATM): These are electronic terminals that at almost all times allows customers to make cash withdrawals, make deposits and 5. transfer funds between accounts with the use of an ATM card and an ass code; the Personal Identification Number popularly known as PIN code.
- Pay-by-Phone Systems: this system enables a customer call his/her financial institution with instruction to pay certain bills or to transfer funds between 6.
- 7. Personal Computer Banking: This allows for handling many banking transactions via the personal computer. These transactions include; viewing account balance, requesting for funds transfer between accounts, and payment of bills electronically.
- Point-of-Sale Transfers: This lets customers pay for their purchases with a debit card. This process is very fast and easy as it transfers money quickly from 8. the customer's account to the store's account.
- Internet Banking: This enables the transfer of funds between accounts and banks through internet-based networks
- 10. Automated Cheque Clearing System (ACCS): This system allows for automated internet-based banking networks.
- Telephone Banking System: Allows bank customers to make banking transactions via the telephone (including mobile phones); check account balance, get transaction details, order a cheque book, get account statement by e-mail, check current interest and exchange rates, transfer funds, get information on banks' products and services, and change PINs.

#### **CONCEPTUAL FRAMEWORK OF THE STUDY**

The framework of this study is rooted on the review of conceptual issues bordering on the incorporation of IT tools and skills into banking operations and how they have impacted on the overall performance of Nigerian banks in terms of quality of service, cost effectiveness, staff efficiency and financial performance. The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness. ICT directly affects how managers decide, how they plan and what products and services are offered in the banking industry (Mejabi, 2008). It has continued to change the way banks and their corporate relationships are organized worldwide and the variety of innovative devices available to enhance the speed and quality of service delivery.

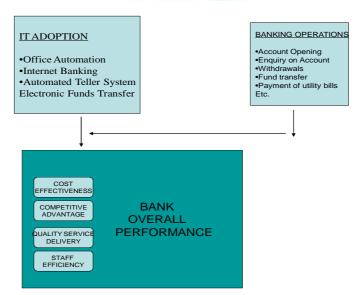
(a. Harold and Jeff (1995) contend that financial service providers should modify their traditional operating practices to remain viable in the 1990s and the decades that follow. They claim that the most significant shortcoming in the banking industry today is a wide spread failure on the part of senior management in banks to grasp the importance of technology and incorporate it into their strategic plans accordingly. Woherem and Adeogri (2000) claimed that only banks that overhaul the whole of their payment and delivery systems and apply ICT to their operations are likely to survive and prosper in the new millennium. He advices banks to re-examine their service and delivery systems in order to properly position them within the framework of the dictates of the dynamism of information and communication technology.

(b. Ovia (2005): The banking business is becoming highly ICT based due to its inter-sectoral link; it appears to be reaping most of the benefits of revolution in technology, as can be seen by its application to almost all areas of its activities It has broadened the scope of banking practices and changed the nature of banking as well as the competitive environment in which they operate. A broad opening has been experienced around the world for banks and they are currently taking due advantage of these innovations to provide improved customer services in the face of competition and faster services that enhance productivity

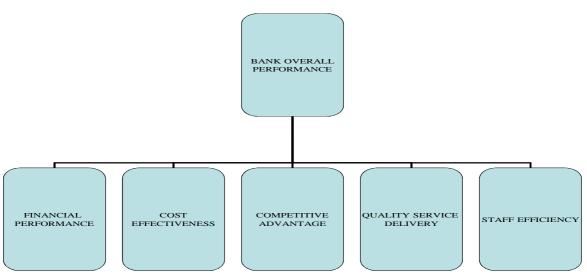
(c. Afolabi (2009): Technological advancement facilitates payments and creates convenient alternatives to cash and cheque for making transactions. Such new practices have led to the development of a truly global, seamless and Internet enabled 24-hour business of banking. Technological advance in payments are important due to the fact that it will be feasible to outsource quite a number of the banks" role in the payments system. Also banks" regulation can be more technologically dependent and better focused rather than focusing on conceptual guidelines. ICT revolution both in terms of innovation rate, speedy operation, and cost per unit (portraying reduction in average total and marginal costs) has made a good number of banks embrace the use of ICT infrastructure in their operations. However there may be little interruptions at times due to network failures, which may make customers unable to carry out transactions at a particular point in time. This little shortcoming is not in any way comparable to the days when banking halls were characterized by long queues mainly as a result of delays in the traditional banking operations (Shittu, 2010).

#### THE RESEARCH PARADIGM

FIG. 1: DIAGRAM SHOWING THE RESEARCH PARADIGM



#### FIG. 2 - DIAGRAM SHOWING THE COMPONENTS OF BANKS' PERFORMANCE



#### **RESEARCH METHODOLOGY**

This research is analytical in nature and is designed to critically evaluate the resulting impact of incorporating Information Technology into modern banking operations on overall performance of banks in Nigeria. A survey research was carried out with a well structured questionnaire to gather information about the impact of IT on banks' performance in terms of cost effectiveness, competitive advantage, quality of service delivery and staff efficiency.

The target population of this study comprises of banks in Nigeria. However since the researcher could not adequately carry out an in depth study on all banks in Nigeria given the time limit and the volume of work involved, a sample size that was adequate enough for the generalization of the findings was selected from the 23 existing banks. Convenience sampling method was used for the purpose of this analysis and a sample of five (5) Banks was selected as a representative of the Nigerian Banking Industry.

The questionnaires, which were administered to elicit information from the respondents in line with earlier stated research questions questionnaire contains both open and close-ended questions and free from ambiguity to enable the respondents supply the appropriate answer to each question and they were carefully administered to the respondents by the researcher. Validity being the appropriateness, meaningfulness and usefulness of specific inference made from test scores. This validity of this instrument was established by subjecting it to serious scrutiny of the supervisors and academic staff in the department and also carrying out a pre-test to ascertain the understability of the instrument.

Reliability of an instrument is the internal consistency of an instrument in measuring what it is intended to measure. The reliability of this instrument was tested using Cronbach's alpha coefficient. The following is the result of the test:

TABLE 1 - RELIABILITY OF INSTRUMENT (Reliability Statistics)

Cronbach's Alpha	N of Items
.747	8

The primary data for this research was sourced via the survey method. The questionnaire designed by the researcher was distributed to the respondents. The researcher then collected the filled questionnaires from the respondents to analyze the data collected with the appropriate statistical instrument(s).

Data will on financial performance was also extracted from the Banks' published annual financial reports. For easy comprehension and analysis, demographic data will be described using bar charts to show the profile of the respondents. Data extracted from questionnaires was analyzed using the regression analysis model on the Statistical Package for Social Sciences (SPSS). Descriptive statistics was used to measure changes in the performance parameters as a result of IT adoption. Also, correlation analysis was used to show the relationship between the IT adoption parameters and the performance parameters both individually and as an aggregate.

It is generally expected, regardless whether the bank adopts Information Technology system or not, that every bank should maintain a sustainable level of cost effectiveness, competitive advantage, quality service delivery, and staff efficiency. However, the Adoption of Information Technology Systems is to enhance these already sustained values.

#### FINDINGS AND DISCUSSIONS

This section deals with the analysis of data, presentation, interpretation and discussions. Bar charts were used to describe the demographic data of respondents. Correlation analysis was carried out to analyze the linear relationship between Information Technology adoption and Banks' performance. Also, regression analysis was carried out to know the effect of Information Technology and Banks' performance.

The correlation analysis was first carried out on the pointer variables for performance to analyze their individual with IT and eventually as an aggregate. The regression analysis was also carried out to know the effect of IT on the individual variable and also as an aggregate. The standard error estimate, T-test, F-statistic, Durbin Watson test and P values were also to test the stated hypotheses. The responses of respondents gathered from open ended questions were also discussed.

TABLE 2 - TABLE SHOWING THE LEVEL OF IT ADOPTION FOR ALL BANKS

VARIABLES	STATISTICS						
	Mean	Minimum	Maximum	Std. Deviation			
Office Automation	4.0111	3.40	5.00	.34214			
Internet Banking	4.6250	3.60	5.00	.36454			
Automated Teller System	4.0111	3.40	5.00	.39984			
Electronic Funds Transfer	4.6444	3.80	5.00	.38010			

The above table shows that the banks being studied have adopted IT systems in their operations at a mean of 4.0 for office automation, 4.6 for internet banking, 4.0 for automated teller system and 4.6 for electronic funds transfer all on a scale of 5.0.

#### Data Analysis

To test the existence of a significant linear relationship between two variables X and Y, a hypothesis test is carried out to determine whether  $\beta_1$  which is the population slope is equal to 0. The null and alternative hypotheses are thus stated;

 $H_0$ :  $\beta_1 = 0$  (There is no linear relationship)

 $H_1$ :  $\beta_{1\neq 0}$  (There is a linear relationship)

If the null hypothesis is rejected, we conclude that there is evidence of a linear relationship.

#### **Decision Rule**

The null hypothesis must be rejected if the calculated statistic is equal to or less than the critical value at 5% level of significance using the following rules:

- Standard error test of the least square estimates
  - $$\begin{split} \hat{S}(\beta_i) < ^{\beta_i}_{/2} \text{ reject H}_0 \text{ and accept H}_1 \\ \hat{S}(\beta_i) > ^{\beta_i}_{/2}, \text{ reject H}_1 \text{ and accept H}_0 \end{split}$$
    a.
- t-Test

b.

- If t cal > t tab, reject H<sub>0</sub> and accept H<sub>1</sub> a.
- b. If t cal < t tab, reject H<sub>1</sub> and accept H<sub>0</sub>
- F-test
  - If F cal > F tab, reject H<sub>0</sub> and accept H<sub>1</sub> a.
  - b. If F cal < F tab, reject  $H_1$  and accept  $H_0$
- Durbin Watson Statistic (d<sup>t</sup>)

For positive d<sup>t</sup>:

- d cal >  $d^{L}$ , accept  $H_0$ a.
- d cal < d $^{L}$ , accept H<sub>1</sub> b.
- d <sup>L</sup> < d cal < d <sup>u</sup>, test is inconclusive

#### RELATIONSHIP BETWEEN INFORMATION TECHNOLOGY AND BANKS' PERFORMANCE

In line with the work of Maldeni & Jayasena (2009) on Information and Communication Technology Usage and Bank Branch Performance, the individual relationship between Information Technology adoption and each of the performance variable parameters will first be tested, after which the relationship between Information technology adoption and an aggregate of the performance variable will then be tested.

TABLE 3: RELATIONSHIP BETWEEN INFORMATION TECHNOLOGY ADOPTION AND BANKS' PERFORMANCE

	t-Test	F-test	R <sup>2</sup>	R	Standard error	D-Watson	
Calculated values	3.641	13.255	0.159	0.399	0.146	1.339	
Table Values	1.658	3.92			0.267	1.57	1.68

 $\beta_0$ = 1.789 $\beta_1$ = 0.533

The table above shows that there is positive relationship between the performance bank and the IT adoption.

The t-test shows a calculated value 3.641 which is greater than the table value of 1.658. This means that the IT adoption is statistically significant to bank performance which indicates that IT adoption has a significant impact on the increase or decrease in bank performance. The R2 of 0.159 shows that 16% of the total variation in bank performance is explained the IT adoption while the rest 84% is explained by other variables exogenous to the model. The overall model is statistically significant as shown by the F-statistic since the calculated value of 13.255 is greater than the table value of 3.92. The DW statistic indicates that there is positive autocorrelation of the first order since the calculated DW statistic is less than the lower table value.

TABLE 4 - SUMMARY OF RESULTS

	t-Test	F-test	R <sup>2</sup>	R	Standard error	D-Watson
IT and CTE	1.377	1.896	0.026	0.162	0.283	1.554
IT and CPA	1.819	3.930	0.045	0.212	0.218	1.667
IT and QSD	2.653	7.038	0.091	0.302	0.199	1.649
IT and STE	4.880	23.811	0.254	0.504	0.168	1.784
IT and overall Performance	3.641	13.255	0.159	0.399	0.146	1.339

t-table = 1.658 F-table = 3.92  $D_1 = 1.57$ 

 $D^{u} = 1.68$ 

#### HYPOTHESIS TESTING

Hypothesis 1: Pearson's correlation analysis was carried out to determine the relationship between Information Technology Adoption and Banks Performance, the result of the analysis was

r = 0.399\*\*

The result shows that although there is a positively significant relationship between Information Technology adoption and Banks' performance, the relationship is not strong, that is, a weakly significant relationship as it is not up to 50%, hence, we accept the null hypothesis (H<sub>0</sub>) and reject the alternative hypothesis (H<sub>1</sub>). Hypothesis 2: Regression analysis and various statistical tests were carried out to analyze the impact Information Technology Adoption on Banks' performance. The results are as follows:

- t-Test: t cal (3.641) > t tab (1.658).... Hence, we reject the null hypothesis,  $H_0$  and accept the alternative hypothesis  $H_1$ a.
- b. F-test: F cal (13.255) > F tab (3.92).... Hence, we reject the null hypothesis,  $H_0$  and accept the alternative hypothesis  $H_2$
- Dubin Watson test: D cal (1.339) <  $D_L$  (1.57).... Hence, we reject the null hypothesis,  $H_0$  and accept the alternative hypothesis  $H_2$ . c.
- Se test:  $\hat{S}(\beta_i)$  (0.146)  $<\frac{\beta_{i,2}}{2}$  (0.267).... Hence, we reject the null hypothesis,  $H_0$  and accept the alternative hypothesis  $H_2$ .

#### INTERPRETATIONS AND DISCUSSIONS

According to the result of Pearson's correlation result of IT and Banks' performance, the correlation coefficient r of 0.399\*\* (40%) at 99% level of significance shows that the relationship between information technology and Banks' Performance is a positive but weakly significant relationship as it is not up to 50%. Although when Information Technology Adoption was correlated with the individual performance dimensions it showed the following results:

- IT adoption and Cost Effectiveness: r = 0.162^ (16%) which shows that there is a positive but not significant relationship between Information Technology and Cost effectiveness. This is evident in the responses of the respondents to the question of the cost of acquisition and maintenance of IT systems. Most of them responded that a maintenance and acquisition cost of IT systems is on the high side.
- IT adoption and Competitive Advantage: r = 0.212^ which also shows that there is a positive but not significant relationship between IT adoption and competitive advantage which goes against the findings of Agboola (2006) who concludes that IT improves competitive strength with a mean of 4.86 on a scale of 5.00.

- IT adoption and Quality of Service Delivery: r = 0.302\*\* which shows although the relationship is significant at 99% level of significance, it is a weak relationship as it is not up to 50%.
- 4. IT adoption and Staff Efficiency: r = 0.504\*\* which means that the relationship between IT and staff efficiency is significant. It also reveals a good degree of dependency of Staff efficiency on IT adoption which aligns with the result of Obasan (2011).

It can be deduced from the various results above that there are variations in individual relationships between IT adoption and the various performance dimensions and IT adoption and performance as a whole; hence it does not suffice to generalize that because there is a positive significant relationship between IT adoption and Performance, then there is a positive significant relationship between IT adoption and all that constitutes performance, therefore the Bank has adopted and implemented IT systems to a large extent that it is reaping the benefits.

The variations in the result can thus be explained by the responses of some of the respondents whose bank have implemented IT systems to a large extent, that customers are very much ignorant about the IT services being offered by their banks. Also, it can be explained by the epileptic power supply in the country coupled with massive network failure and customer's fear of cyber-crimes thereby preventing them from availing themselves with the available services.

The regression analysis result shows  $R^2 = 0.159$  indicating that 16% of the variation in Banks' performance can be explained by 1% variation in the level of IT adoption b a bank. The intercept  $\beta_0 = 1.789$  and the slope  $\beta_1 = 0.533$ . The regression model is thus as follows:

Perf = 1.789 + 0.533 Information Technology adoption

This means that if IT adoption is increased 1%, the average value of Banks' overall performance will increase by 5.3%. Based on the t, F, standard error and Dubin Watson tests carried out, we reject the null hypothesis  $H_0$  and accept the alternative hypothesis  $H_2$  and then conclude that Information Technology Adoption has a significant impact on Banks' Performance.

This result is in consonance with the work of Maldeni and Jayasena (2009) who carried out a research on Information and Communication technology and Bank Branch Performance and concludes that Higher the ICT usage level, higher the impact on Quality Performance improvement at the bank branch. The result also agrees with Agboola (2006) who investigated the electronic payment systems and tele-banking services in Nigeria. His findings reveal that there has been a very modest move away from cash. Payments are now being automated and absolute volumes of cash transactions have declined. The result of the study revealed that tele-banking is capable of broadening the customer relationship, retain customer's loyalty and enable banks to gain commanding height of market share if their attendant problems such as, ineffectiveness of telecommunications services, epileptic supply of power, high cost, fear of fraudulent practices and lack of facilities necessary for their operation were taken care of.

#### **SUMMARY OF FINDINGS**

The findings reveal that some of the individual components of performance show a significant positive linear relationship with Information Technology adoption and some showed only a positive but not significant linear relationship as a result, the aggregate of performance showed a weakly significant relationship with Information Technology adoption.

The result of cost effectiveness deviates from the expectation of the researcher and from results from previous studies. This was observed to be as a result of customers not making sufficient use of the IT services being rendered by their banks partly because of the fear of being defrauded by cyber-crime perpetrators and largely because of ignorance of the availability of these services. From the responses of the respondents, it was discovered that only the Automated Teller Machine (ATM) has received large number of users and that is because the banks' management has specified and enforced the policy of the minimum amount of money that can be paid over the counter, hence, customers have no choice but to use the ATM machines but leaving the other IT services such as Electronic Funds Transfer (EFT) and Internet Banking to suffer.

It was also observed that all the banks studied have fully implemented the office automation aspect of IT adoption. This is evident in the responses of the respondents to questions on how IT adoption has affected their work. It is also evident in the regression analysis of Staff efficiency on Information Technology which has the best result so far closely followed by the result of Quality of Service delivery.

The final results of Banks Performance and Information Technology show that Information Technology has improved performance but there is still room for more to be done. From the responses supplied by the respondents to the open ended questions, the following are deduced to be the barriers to the efficient implementation of IT systems:

- Cost of acquiring equipments
- Epileptic power supply
- 3. Ignorance of banks' staff on the technology know-how of the adopted systems
- 4. Customer ignorance on the availability of IT services and in most cases illiteracy of customers
- 5. Lack of intensive training of banks' staff on Information Technology usage
- 6. Inability of the banks' management to keep up with current innovations in Information Technology.
- 7. Consistent network failure in the country.

#### CONCLUSIONS

Adoption of IT has influenced the content and quality of banking operations. From all indications, IT presents great potential for business process reengineering of Nigerian Banks. Investment in information and communication technology should form an important component in the overall strategy of banking operators to ensure effective performance. It is imperative for bank management to intensify investment in IT products to facilitate speed, convenience, and accurate services, or otherwise lose out to their competitors. The banking industry in Nigeria presents IT providers with great opportunity to market their innovations. Success in this area however depends on how they can customize their services to appeal to the ready minds of various stake holders in the industry.

#### RECOMMENDATIONS

Concerns about ICT role in attaining effectiveness, efficiency and productivity were raised in the late 1980s. Since then a large number of studies have emerged both at the industry and firm level that have substantially improved our understanding of the relationship between ICT and firm performance. In particular, the firm-level studies have argued than an explanation for the so-called "productivity paradox" can be attributed to an insufficient response of organizational changes to adapt to changing business environment, to make better use of knowledge, technology and human resources, to respond to new demands from suppliers and customers, and to use ICT effectively (Sharpe, 1999 as cited in Obasan, 2011).

Presently, Information and communication technology has received great thoughtfulness across various industries and substantial positive effect on banks' profitability, cashiers work, banking transaction, patronage, services delivery, and customer services among other. Hence, it is recommended that;

- 1. More attention has to be directed towards the use of Information and communication Technology in banking operations since the industry serve as the financial wheel of any economy while appropriate policies must be put in place to ensure proper monitoring and the determination of the optimum size required to attain organisational efficiency.
- 2. Proper training should be put in place for banks' staff to enable the be all knowing about the various technological systems being implemented in the bank and not just the one each staff is directly using.
- 3. There should be customer awareness of availability of the various IT services being offered by the banks to enable the customers avail themselves with the available resources, only then will the banks' management be able to fully recoup the funds invested in acquisition of IT systems thereby increasing cost effectiveness in the long run.
- 4. Banks' management should not just implement IT systems because it is mandatory or because others are doing it but they should accept IT adoption as part of the daily operations as it is only then will the benefits of IT adoption fully accrue to them.

- 5. Banks' management should endeavour to increase their bandwidth to counter the problem of network failure
- 6. Proper internal and external checks should be put in place to mitigate cyber-crimes and assure customers of the safety of their transactions
- 7. Banks' management should ensure that their website is not only an information seeking site as is the case in most banks. The sure upgrade their websites to enable their customers gain access to internet banking and not have to come to the banking hall for everything.
- 8. Customers should be encouraged to make use of and familiarize themselves with the available IT services being offered by their banks to be able to survive in the proposed cashless economy era.

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