EFFECT OF INFORMATION TECHNOLOGY ON PERFORMANCE OF DEPOSIT MONEY BANKS IN MAKURDI METROPOLIS, BENUE STATE, NIGERIA

Saa Jirgba, Prof. T.J. Hanmaikyur; Dr (Mrs) N. Kwahar; *Akeji, S.T & Nomhwange, S.T (PhD)

Department of Business Administration, Joseph Sarwuan Tarka University, Makurdi-Nigeria
*Department of Business Management, Intercontinental College of technology, Makurdi
Benue State -Nigeria

Abstract: *The main objective of the study is to determine the effect of Information and Communication Technology (ICT) on performance of selected deposit money Banks in Makurdi Metropolis, Benue State, Nigeria. The study was anchored on Ajzen and Fishbein's theory of reasoned action, compensatory and theory of diffusion of innovation. The researcher used both primary and secondary sources from a population 383 and sample of 369 respondents obtained by the use of a well-structured questionnaire. The data collected were analyzed using descriptive statistics such as frequency, simple percentage and the relationship between the variables of the model was tested using simple linear regression analysis. The result of the regression analysis shows that a positive relationship exist between Automated Teller Machine (ATM) and performance of selected deposit money banks in Makurdi Metropolis, Benue State proxied by Cost Reduction (COR) and the relationship is statistically significant (p<0.05) and in line with a priori expectation. A negative relationship exist between Point of Sale Usage (POS) and performance of selected deposit money banks in Makurdi Metropolis, Benue State proxied by Service Delivery (SVD) and the relationship is not statistically significant (p>0.05) and not in line with a priori expectation. A positive relationship exist between Mobile banking (MBB) and performance of selected deposit money banks in Makurdi Metropolis, Benue State proxied by Customer Loyalty (CUL) and the relationship is statistically significant (p<0.05) and in line with a priori expectation. The study concluded that Information Technology has significant effect on performance of commercial banks. Performance indicators of cost reduction and customer loyalty are significantly influenced by Automated Teller Machine (ATM) and mobile banking. The study recommends among others that there should be a prompt response to the resolution of all dispense error associated with Point of Sale use in various merchant locations in the study area by the management of the banks to boost confidence in the use of POS in merchant locations.*

Keywords: *Information and Communication Technology, performance, Deposit Money Banks, Customer Loyalty, Automated Teller Machine, Cost Reduction*

1.0   INTRODUCTION

1.1   Background to the Study

The increased demand for Information Technology (IT) in banking sector became imminent and unavoidable in the world at large and Nigeria in particular given the competition in the industry. Globally, Information Technology has become a key element in economic development of many countries in the world. Oppong *et al* (2014) observed that over the years, many innovations have taken place in the world, the most striking and most celebrated is the aspect of Information Technology. Organizations today are confronted with rapidly changing market condition indicated by high merger rate and strong competitors. Under these conditions, traditional management approaches that focus on financial figures and/or

centralized, analytical planning methods are considered to be insufficient for effectively steering the organization in dynamic environment. Shaw and Hamilton (2016) itemized banking services that have been changed via the use of Information Technology as including opening an account, mandate on customers account, and transaction processing and recording.

Binugo and Aregbeshola (2014), assert that recent advances in the technological world giving birth to the emergence of information and communication technology (ICT) have led to remarkable changes in the ways businesses are run in contemporary times. This development is underscored by contemporary advancements engineered by the knowledge economy. It is also important to state that modern banking in Nigeria is driven by the outputs from robust local and global research and development. Woherem (2000) claimed that only banks that overhaul the whole of their payment and delivery systems and apply IT 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 technology. The banking industry in Nigeria has witnessed tremendous changes linked with the developments in IT over the years. The quest for survival, global relevance, maintenance of existing market shares and sustainable development has made exploitation of the many advantages of IT through the use of automated devices imperative in the industry. The sector that has been most radically affected by the information technology developments is the banking system. The information technology has become a critical business resource because its absence could result in poor decisions and ultimately business failure. Technology has opened up new markets, new products, new services and efficient delivery channels for the banking industry.

Online electronics banking, mobile banking and internet banking are just a few examples. Information Technology has also provided banking industry with the wherewithal to deal with the challenges the new economy poses. Information technology has been the cornerstone of recent financial sector reforms aimed at increasing the speed and reliability of financial operations and of initiatives to strengthen the banking sector (Saeid (2011). Some of the challenges confronting implementation of IT in organization could be classified into three classes as human, operational and technical constraints. The human constraints include physical disability, poor sight, illiteracy and ageing. The operational constraints include insecurity of funds transferred, frauds and standardization of channels. The technical constraints are centered on the lack of supporting infrastructures such as erratic electricity supply, interdependence and lack of encryption on short message system (SMS) messages (Agbada, 2008).

World over, there are studies including Mcphail, Fogarty and Gerard (2020) in Australia found IT channels have positive effect on performance; in America, Anguelov, Hilgert and Hogarth (2019) discovered that electronic banking technology practice have significant effect on Performance; in India, Sobol and Cron (2016) Results indicate that computerization is related to overall performance; Sadaf and Rahela (2017) concluded from the study that the internet banking service quality dimensions have a significant impact on the customer satisfaction in India; in India also Prabhakar Rao (2014) found that IT channels has effect on performance in Indian banking industry; in Bangladesh, Cowdhury and Marufullah (2013) Information Technology positive impact on productivity of banks;

In Africa, Simon and Thomas (2016) concluded that flexibility of internet banking influence customer satisfaction to a great extent in Kenya; Musyoka (2011) in Kenya, found a significant relationship was found to be present between branch network spread and financial performance; Hussein and Elyjoy (2018) submitted that the internet banking has a positive significant effect on operational performance of the commercial banks in Kenya; and In Tanzania, Kawamala, (2013) found the introduction of Mobile banking, the m-banking/mobile phone banking such as M-Pesa and Tigo Pesa have increased the speed of money deposits and transfers via the use of electronic banking run by these companies both in urban and rural areas.

In Nigeria, Balogun (2011) found that IT has positive effect on profitability of deposit money banks in Nigeria; Akani and Tony–Obiosa (2020) revealed that technological innovation influenced banks employee's performance, customer's satisfaction and improvement in banks profitability; Ugwuanyi, Ugwunta and Ugwuanyi (2013) found bank deployment of IT solutions have enhanced bank performance; Adelowotan (2016) result that Growth in bank branches was positively related to asset growth; Ringim, Razalli and Hasnan (2015) found that IT capability is significantly related to organization performance of banks based on resource based view (RBV) of organization performance; Haadi and Ajibola (2018) showed that utilization of electronic banking products have impact positively performance; Isibor, Omankhanlen, Okoye, Achugamonu, Adebayo, Afolabi, and Ayodeji (2018): found Electronic Banking Technology have impact on Customers' Satisfaction and Economic Growth in Nigeria; Olannye, Dedekuma and Ndugbe (2017) discovered there is positive the relationship between electronic service delivery channels and customer retention in Asaba metropolis; Anoke (2022) study uncovered a positive and substantial effect of ICT implementation on service quality delivery and saving operative times of quoted DMBs in Nigeria; and among others.

Despite the global, continental and local establishment that IT have positive and significant effect on bank performance, many deposit money banks in Nigeria and in particular Makurdi metropolis are yet to adapt and implement appropriately information technology channels in their operations to guarantee improved performance. Therefore, this study is born out of desire to re-emphasize the effect of IT on the performance of deposit money banks in Makurdi metropolis.

1.2 Statement of the Problem

In Nigeria, customers of banks today are no longer about safety of their funds and increase returns on their investments only. Customers demand efficient, fast and convenient services. Customers want a Bank that will offer them services that will meet their particular needs (personalized Banking) and support their Business goal. For instance; businessmen want to travel without carry about cash for security reasons. They want to be able to check their balance online, find out if a cheque is cleared, transfer funds among accounts and even want to download transaction records into their own computer at work or home. Customers want an ensuring cashless economy.

Despite the rapid growing adoption of the information technology tools to improve banking operations through the use of SMS, internet, online banking and real time gross settlement, Nigerian banks are still facing the challenges of continually modernise their operations so as to increase their productivity, enhance quality of service delivery and also

minimise the average operating cost and time. Similarly, studies were conducted and find a positive relationship between information and communication technology and banks performance Dabwor, Ezie and Anyatonwu, 2017; Luka and Frank, 2012; Madueme 2010; Binugo and Aregbeshola 2014; Nwakoby, Sylvester & Philip, 2018; Abubakar, Nasir, & Haruna, 2013). while others identified a negative relationship between information and communication technology and deposit money performance (Wilson, Odo and Ikenna, 2014; Maiyaki and Mokhtar, 2010). The researcher noted that there were divergences in conclusions, as a result this study seeks to carry out this study to know which conclusions are applicable the study area.

Another gap discovered from previous similar research works is that different dimensions of IT were studied in isolation on their effect on performance in banks. This does not explain the effect of such modes of IT on the bank performance. Such studies used different modes many of which may not have been tested in the study area. This implies that on performance of Deposit money banks cannot reliably make use of those modes to predict their business performance, hence the need for this study. This gap is closed in the present study as the researcher has assembled different modes of IT to examine their effect on performance.

Although some research exercises from a good number of researches including Luka and Frank, 2012; Madueme, 2010; Binugo and Aregbeshola, 2014; Abubakar, Nasir, & Haruna, 2013) have examined the effect of IT on performance of money deposit banks, most of the studies were done many years ago. With changes in environment, globalization, technology business and even approaches to banking operation, there is need to conduct a similar research that keeps trends with development that reflect the reality of the present time. This study therefore, seeks to ascertain the present effect of IT on the performance of money deposit banks in the study area.

1.3   Objectives of the study
The broad objective of the study is to examine the effect of Information Technology on the performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria. The specific objectives are:

i.   To determine the effect of Automated Teller Machine on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria;

ii.   To examine the effect of Point of Sale Electric Funds Transfer on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria;

iii.   To access the effect of mobile banking on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria;

iv.   To investigate the effect of internet banking on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria; and

v.   To evaluate the effect of branch networking on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria.

1.4 The Significance of the Study
Upon completion, this study would enable policy makers at strategic levels in the banking industry to be aware of customer's needs so that efforts toward improving e-service quality would be initiated. At this point, It would be clearer to the policy makers in banks the extent to which customers are ready to churn services rendered by the banks if they can be offered better services in other competing banks; hence abide by the code of conducts as spelt out by the Central Bank of Nigeria. The knowledge gained from this study

would be beneficial to the government, researchers in the sense that the study would afford the academic world the opportunity to be more accessible to material and local literatures that would further enrich knowledge. At the level of business practice, it is hoped that this study would be useful to banks. These banks would not only be interested in profitability alone, but also on customer orientation approaches or programmes to further enhance customer satisfaction. Theoretically, this study would enable policy makers at strategic levels in the banking industry to be aware of customer's needs so that efforts toward improving e-service quality would be initiated. It is definitely of necessity that this study would afford policy-makers in the banking industry to further appreciate the fact that bank customers are rational and as such must be given very good value for money and time spent in patronizing them. The benefit of this study to the banks would therefore mean more profit, larger investment opportunity and better service delivery to its customers which would invariably bring about retention of existing customers and the cultivation of potential customers.

This study would equally be beneficial to customers in the sense that they would be more exposed to better e-banking service delivery from the banks. This would further enjoin them to continue to patronize e-banking channels and even encourage others to do so. This would invariably improve customer confidence in the patronage of e- banking service delivery channels. This study would also benefit the bank employees as increase in profitability for banks will transform to exposure of employees to more training and development programs and may bring about additional incentive packages. This study would unequivocally be beneficial to the Nigerian economy in the sense that it would definitely bring about improvement in the Gross Domestic Product (GDP). This improvement would of course bring forth improved standard of living, and enhance ethical practices in the banking sector.

2.0 LITERATURE REVIEW

This section presents a review of related literature that shows the effect of information technology on performance of deposit money banks. This is divided into four subsections namely; theoretical framework, conceptual framework and review of related literature

2.1. Innovation diffusion theory

The theory of diffusion of innovation is a theory developed to predict factors influencing adoption of information system by Rogers in 1995. Literature in information technology diffusion emphases the importance of perceived relative advantage and improved organizational performance as enablers of adoption of new innovation. According to Rogers (1995), the greater the perceived relative advantage, the faster the adoption. The diffusion of innovation theory posits that potential adopters evaluate an innovation based on innovation attributes such as relative advantage, compatibility, complexity (ease of use) and trial ability. All the attributes were found to be positively related to its rate of adoption, while perceived complexity of an innovation is negatively related to its rate of adoption. This theory indicates that user's attitude towards and acceptance of a new information system is important to the successful adoption of the information system (Davis, 2009). It posits that attitude towards a particular system is based on two major constructs: perceived usefulness and perceived ease of use. The quality, effectiveness and success of a system can only be

validated by its level of users' acceptance through its ability to satisfy their needs (Pikkarainen *et al.*, 2004).

To improve the investigation power of the theory of diffusion of innovation, several other constructs have been added to extend it because, its alone may not sufficiently predict users' acceptance in a dynamic environment as e-banking. Examples of such construct include: perceived risk, perceived security and privacy, perceived enjoyment, internet connectivity and trust (Adesina and Ayo, 2010; Pikkarainen *et al.*, 2004; and Karjaluoto. *et al*, 2012). Building on these empirically validated views, the theory of diffusion of innovation is suitable for determining electronic commerce but not fully determine the users' intention to adopt a technology. Trust in the context of the theory of diffusion of innovation is an individual's reliance on According to (Agboola, 2016), trust develops over time. The level of trust an individual has in an object would be different depending on which trust is assessed. Furthermore, if the level of trust surpasses the threshold of perceived risk, then the trust or will engage in a risk taking relationship. Trust in both bank merchant and electronic channels are important given that there is some risk involved in using electronic channels for financial transaction.

Furthermore, trust is also noted as a useful tool in reducing the perceived risk that customers feel is present in an online environment (Pavlou, 2013). All the adoption model (like TAM, theory of planned behavior (TPB), and theory of reasoned action (TRA)) were developed for studying technology adoption in developed countries, however, technology adoption in developed countries might be different from those of developing countries as the challenges are different in various contexts. Considering Technology-Organization-Environment (T-O-E) framework by Tornatzky and Fleischer (2010), three factors are important for any technology or innovation adoption diffusion process: technology context, organizational context and environment context. Technology context includes both internal and external technologies applicable for firm. Organizational context includes resources (capital and human), organizational scope and size. Environment context includes both the direct and indirect roles of competitors, industry associations, and the governments. Adoption of digital innovation has provided tremendous benefits to the customers. It supported service quality delivery such as access, convenience, speed and economy (Mansumitrchai and Chiu, 2012). Currently, banks describe their activities and product through electronic banking to improve their competitive position and image.

The most appropriate theory for this present study is the theory of diffusion of innovation. This is because the rate at which the banks has adopted and adopting Information and Communication Technology is in line with the postulation of the theory of adoption of innovation. This is because according to the theory, the greater the perceived relative advantage, the faster the adoption. In order to improve performance and enhance operational efficiency, the Nigeria banks are at the forefront of adoption of innovation to improve the quality of service delivery to its customers. The theory of diffusion of innovation is the relevant to this study. The theory is important because it brings with it the advancement in the use of information and communication technology in the provision of banking services such as electronic bill payments, online investments. These services are one of the most important aspects of advancing the competitiveness of banks as the use of these electronic means of banking can reduce administrative cost, operational cost and increase bank performance. Diffusion of innovation theory attempts to explain and describe the mechanisms of how new inventions in this case internet banking, ATMs, POS terminals,

mobile banking and digital wallets, is adopted and becomes successful (Clarke, 1995). Sevcik (2004) stated that not all innovations are adopted even if they are good it may take a long time for an innovation to be adopted. He further stated that resistance to change may be a hindrance to diffusion of innovation although it might not stop the innovation it will slow it down. Rogers (1995) identified five critical attributes that greatly influence the rate of adoption. These include relative advantage, compatibility, complexity, triability and observability. According to Rogers, the rate of adoption of new innovations will depend on how an organization perceives its relative advantage, compatibility, triability, observability and complexity.

If a bank in Nigeria and for that matter in Makurdi metropolis observes the benefits of digital banking they will adopt these innovations given other factors such as the availability of the required resources. These banks will do their best to ensure that their presence is felt in the industry and meet the gap that technology would easily address. Adoption of such innovations will be faster in organizations that have internet access and information technology departments than in organizations without. Diffusion Innovation theory cause a pro-innovation bias in that it promotes innovations. That is to say "the rate of adoption of successful innovation can be researched."While it promotes successful diffusions which can easily be identified and investigated it does not sufficiently account for unsuccessful diffusion which normally does not leave visible traces that can easily be studied. Relative advantage measures the degree at which the target users perceived an innovation as being superior to the previous practice. With regard to electronic banking, relative advantage measures how the users view electronic banking services as superior to the traditional banking practice. Several researches identified relative advantage as core the driver of customer's choice of electronic banking (Tan and Teo, 2000). Robinson (2009) describes compatibility as a measure of the extent potential users of an innovation perceive it as being consistent with their values, previous experiences and needs. Thus, the extent to which a given innovation matches with the social and technological infrastructure of the potential users determines its acceptance. As an attribute of innovation, complexity defines the degree the potential users of a particular technology perceive it as difficult to understand and use. Innovations with easy understanding are more rapidly embraced by the potential users than those that require difficult understandings and technicalities (Robinson, 2009). Trial ability involves the extent an innovation allows potential users to experiment it before taking decision on whether it can be adopted.

It is important to note that a trialable technology poses less risk to the potential users. Undoubtedly, observable results provide opportunity for potential users to evaluate the usefulness of a given technology from its visible results which reduces the perceived uncertainly. This increases the tendency to adopt the technology due to the recognized benefits. Regardless of the usefulness of the innovation diffusion theory, it has been characterized by various criticisms. Bayer and Melone (1989) argue that the IDT poses a challenge in forecasting the adoption of technological innovation. Also, Lee et al. (2005) posit that the observable results associated with the IDT are of marginal importance in terms of predicting users" adoption of electronic banking. Barnes and Coritt (2013) recommend to managers the need for understanding a certain capacity of any technology and what it tends to offer and ensure its use is considered with their operations as well as understands relatively costs and constraints of operating that technology. He also counsels that the general issues to be considered as a volume and variety of results that the technology can

achieve which can fit the existing technology use within the organization and the level of its maturity. Internet banking highly relied on the information communication technology since most of its operation is being done on the internet. Customers can interface with their account freely without being present in the banking hall.

2.2   Conceptual Framework

This study seeks to examine the effect of IT on performance of money deposit banks. IT and performance of money deposit banks are therefore the two principal concepts which, respectively, from the independent and dependent variables of the study.

2.2.1   Concept of Information Technology

The term Information Technology evolved in the 1970s. Its basic concept, however, can be traced to the world-war II alliance of the military and industry in the development of electronics, computers and information theory. There have been varying opinions on the concept of Information Technology most of them revolving around the same axis (Fethi and Pasiouras, 2010). Fethi and Pasiouras (2010) present technology as something new as it drives change at an ever increasing rate. It is often equated as being modern and holds out a panacea in which the future is invariably better than the past. Information Technology is also seen as the use of electronic machines and programmes for the processing, storage, transfer and presentation of information. It encompasses many technologies such as computers, software, networks and even telephone and fax machines. The purpose of Information Technology is to facilitate the exchange and management of information and has a lot of potentials for the information process component of any organization (Olusola and Oluwaseun, 2013). According to Malhotra and Singh (2009), Information Technology is a term which encompasses the notion of the application of technologies to information handling (generation, storage, processing, retrieval, dissemination etc). Information Technology is comprised of computers, networks, satellite communications, mobile communications, robotics, video-text, cable television, electronic mail (E-mail), electronic games and automated office equipment.

Information Technology is defined by the Information Technology Association of America (ITAA) (2012) as the study, design, development, implementation, support or management of computer based information systems, particularly software applications and computer hardware. Encompassing the computer and information industries, Information Technology is the capability to electronically in-put, process, store, out-put, transmit and receive data and information including text, graphics, sound and video, as well as the ability to control machines of all kinds electronically. The information industry consists of all computer communications and electronic organizations including hardware, software and services. Completing tasks using Information Technology results in rapid processing and information mobility as well as improved reliability and integrity of processed information.

2.2.2   Dimensions of Information Technology

Information Technology has many dimensions for instance, Agboola (2006) indentify its dimensions to include Automated Teller Machine, Electronic Funds Transfer, Electronic Data Exchange, Smart Cards, MICR Cheques, Local Area Network, Wide Area work and Point of Sales System but for the purpose of this study, it can be viewed in terms of Automated Teller Machines (ATM), Point of Sales (POS), Mobile/Telephone Banking, Internet Banking and Branch Networking. These dimensions of IT are adapted and modified from Loudon and Loudon (2010), and Simon and Thomas (2016). They are explained below;

i. Automated Teller Machine (ATMs): Is a combination of a computer terminal, record keeping system and cash vault in one unit, permitting customers to enter the bank's book keeping system with a plastic card containing a personal identification number (PIN) or by punching a special code number into the computer terminal linked to the bank's computerised records 24 hours a day. Oladejo and Adereti (2010) stated that the combined services of both the automated and human tellers imply more productivity for the bank during banking hours. Also, it saves customers time in service delivery as alternative to queuing in bank halls, customers can invest such time save into other productive activities. ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period of time than human tellers. Nigeria became one of the countries that have adopted the use of Automated Teller Machine (ATM) as a means of cash transfers, cash withdrawals and other relevant cash transactions. It has increased the cash base of banks and the profitability level, making the banking industries more efficient in carrying out financial activities, that is making cash available at all times to enable bank customers have access to cash even at non- banking hours. ATM has also helped in achieving cashless economy being proposed by CBN. It is also a device which carries out financial operations such as cash transfers, cash withdrawals, sale of recharge cards without being present in the banking hall and it can be accessed 24hours/7days (Fenuga, 2010). Automated Teller Machine uses network in carrying out some operations such as: cash transfers, cash withdrawals, payment of utility bills etc (Tope, 2010). Moreover, ATM began operation in most Nigerian banks in the year 2003 with five ATMs from United Bank for Africa (UBA) and First Bank of Nigeria (FBN).

ii. Point of Sale Terminals (POS)

Point of sales is a terminals credit authorization, withdrawal, and cash payment. This enhances electronic fund transfer at the point of sale (EFT POS). EFTPOS enables a customer's account to be debited immediately with the cost of purchase in an outlet such as supermarket or petrol station. It consists of the accumulation of the electronic payment messages by the retailer, which are subsequently passed on to appropriate institutions for processing. The purchase price is debited in the buyers account and credited on the seller's account. Smart Card is a card issued to a customer (a person who has a current account with the bank) by a member bank of SMART CARD Nigeria Limited to aid them in their transactions. Ideally, each card holder (customer, to whom a card or electronic pulse is issued) should be an existing customer with a member bank of the consortium responsible for such e-money product. The card issued to the customer is usually PIN protected (Personal Identification Number), and each card holders has access/pass code or password different from any other person's. Such a pass code must be kept secret and must be changed any time it becomes known to someone else (Cronin, 2007).

iii. Mobile/Telephone banking

Mobile phones are increasingly being used for financial services in Nigeria. Banks are enabling the customers to conduct some banking services such as account inquiry and funds transfer through the mobile telephone. Alert Z of Zenith bank is an example of e-banking services via mobile phone (SMS). This notifies the customer of any transaction on his/her account. This is a facility that enables customers, via telephone calls, find out about their position, with their bankers merely dialling the telephone numbers given to them by the banks. In addition, the computers on the phone would require special codes given to the customers as a means of identification of authentic users before they can receive any information they requested for.

This is a service introduced into the banking balance as a result of computer telephone technology being made available (Ovia, 2015).

The technology banking has a universe of possible application limited only by the imagination. These areas include: Account balance enquiry; Account statement printing; intra-Banks. Account to Account Transfer; inter-banks Account to Account Transfer; Download Account Transaction etc. Telephone and PC banking brings the bank to the doorstep of the customer, it does not require the customer to have his premises; interactive Voice Response becomes a regular feature of operations; Text-to-speech capability becomes reality; A uniformed messaging capability become permanent feature of the bank (Ovia, 2015).

iv. Internet Banking

Internet banking refers to systems that enable bank customers to get access to their accounts and general information on bank products and services through the use of bank's website, without the intervention or inconvenience of sending letters, faxes, original signatures and telephone confirmations (Thulani, Tofara & Langton, 2009 cited in Yahiya, 2011). Siyanbola (2013) puts it that internet banking involves conducting banking transactions on the internet (www) using electronic tools such as the computer without visiting the banking hall.

E-commerce is greatly facilitated by internet banking and is mostly used to effect payment. Internet banking like mobile banking also uses the electronic card infrastructure for executing payment instructions and final settlement of goods and services over the internet between the merchants and the customers. Commonly used internet banking transactions in Nigeria are settlement of commercial bills and purchase of air tickets through the websites of the merchants. Level of awareness of the advantages of this product to the saving populace is still very low; hence, there is every room for improvement if cashless banking would be effective as expected (Siyanbola, 2013). Funds transfer, airtime top up, balance enquiry, password change, bill payment etc can also be conducted on the internet banking plat form.

v. Branch Networking

This refers to the elements used to distribute information to, from and among remote sites, stores, branch offices and data centres. According to Athanasoglou and Gioka (2007), branch network can be defined as locating a firm in different locations with the aim of gaining more access to customers. Adeyinka (2013) contends that spreading in branch network can also be defined as dispersion of bank branches to boost availability of bank products and services, improve customer access to their place of residence and improve the bank's cooperation with its clientele. Tuwei (2016) explains that spread in branch network can be described as locating branches of a firm in diverse locations to achieve certain goals. Athanasoglou et al. (2007) argue that spread in branch network results into an increase in sales, risk reduction and cost minimization. Contrary to this, Davidsson and Steffens (2009) opine that spread in branch network does not guarantee the firm increased sales and profits, the operational costs of running a new branch might supersede the profits generated by that particular branch. Claeys and Vennet (2008) posit that expanding branch networks improves the branch effectiveness in generating revenues from retail banking notwithstanding the costs involved and developing channels of distribution for example call centres, online banking and ATMs. Spread in branch network widensthe market segments giving more customers access to products and services. Claeys and Vennet (2008), in his study argue that customers are willing to spend extra premiums as result of convenience when choosing banks Athanasoglou et al. (2007).

2.2.5   Concept of Performance of Money Deposit Banks
To Cascio (2006), performance is the degree to which the goals of an organization are achieved. Performance refers to be the ability (both physical and psychological) to execute a specific task

in a specific manner that can be measured as high, medium or low in scale. Performance for much of the business and economics literature is focused on providing financial returns, variously referred to as profits, return on investment (ROI), economic rents, or shareholder returns (Barney, 2011). Although there is a range of behaviors that could be used for measuring performance, Oladejo and Adereti, (2010), emphasize judgmental and evaluative processes that take a great deal along with action itself while defining performance. Wurim (2012) explains that performance is the key element in achieving the goals of an organization as performance increases the effectiveness and efficiency of the organization which is helpful for the achievement of the organizational goals.

2.2.7   Dimensions of Performance of Money Deposit Banks
For the purpose of this study however, the following dimensions of performance are considered. They include cost reduction, service delivery and customer satisfaction.

i. Cost Reduction
Cost reduction is the process used by companies to reduce their costs and increase their profits. Depending on a company's services or product, the strategies can vary. Every decision in the product development process affects cost. Companies typically launch a new product without focusing too much on cost. Cost becomes more important when competition increases and price becomes a differentiator in the market.

Cost reduction is the process of looking for, finding and removing unwarranted expenses from a business to increase profits without having a negative impact on product quality. Many business managers will engage in periodic cost reduction drives in order to make their company's operation more efficient and to boost profits. According to O'Hearn (2016) the crucial priority in cost reduction is not the costs cut, but rather where resources are focused to stimulate growth and differentiation – strategic cost reduction. This includes digital transformation that can not only sharpen the precision of risk selection and pricing, but also deliver more tailored and targeted client solutions at a fraction of the cost.

ii. Service Delivery
Service delivery is a component of business that defines the interaction between providers and clients where the provider offers a service, whether that be information or a task, and the customer either finds value or loses value as a result. According to Stanicic (2007) service delivery refers to the performance of acts that are of service to customers or citizens, which creates possibilities for them to do things that would not have been possible without the provider's involvement, or that make it easier for them to do things.

iii. Customer Satisfaction
Customer Satisfaction is a measure of how products and services supplied by a company meet or surpass customer expectation. It is seen as a key performance indicator within business. Customer satisfaction refers to the degree to which customers derive utility from the use or consumption of a product and/or service. The automated teller machine was known to be a single function machine solely for cash dispense but it later metamorphosed to a multifunctional machine that performs a wide range of services such as accepting cash deposit, payment of utility bills, fund transfers thus, improving the utility derived from it by customers. E-banking became popular after the introduction of the internet and the World Wide Web (www) where customers could make fund transfers and receive the same at the

comfort of their homes. Oni and Ayo (2010) stated that e-banking is the most recent service channel offered by various retail banks especially deposit money banks in various nations.

2.3 Review of Related Empirical Studies

Olannye et al. (2017) investigated the relationship between electronic service delivery channels and customer retention in some selected banks in Asaba Metropolis of Delta State, Nigeria. The study employed a sample of 235 employees from the banks with the aid of a cross sectional survey design method, correlation and multiple regression analysis. It was discovered from the study that point of sales service, online banking service and mobile banking have significant relationships with customer retention in the selected banks. This was done in Nigeria but not the place where the present research is being conducted.

Study conducted by Dabwor et al. (2017), on the effect of ICT adoption on the competitive performance of banks in an emerging economy: The Nigerian experience, the study adopted both inferential and descriptive design using a t-test, where P < 0.05. Their findings of the study revealed that a positive relationship exists between ICT and banks performance in Nigeria.

Oyinkola (2018) carried study on the impact of information technology on banking operations in the First bank of Nigeria PLC. The data used was primary data and the research instruments used are questionnaires and personal interview for staff and customer of the bank. Simple frequency percentage was adopted as the statistical and the hypothesis was analyzed using Chi-square, where P-value < 0.05, the result revealed that IT has greatly improved the growth and performance of Nigerian commercial banks and has led to increased customers' satisfaction.

Hussein and Elyjoy (2018), examined how internet banking and operational performance of commercial banks were related in Nakuru County, Kenya with the application of structured questionnaires on 56 employees of the commercial banks. Correlation and regression analysis was used to address the objective of the study. They submitted that the internet banking has a positive significant effect on operational performance of the commercial banks. This study is good but not a replication of the present study as it is not carried out in Nigeria.

Ijeoma et al. (2020) carried out to examine the impact of electronic banking on customer satisfaction in commercial banks in Imo State. The aim is to determine the relationship between electronic banking and customer satisfaction in some commercial banks in Imo State. The study employed descriptive correlation survey method. The population of the study was made of 180 customers of Keystone bank, UBA and Access bank and used judgmental non-probability sampling of 180 customers. The study used primary data; the instrument used in gathering the primary data was questionnaire. The statistical tool of analysis is the Pearson Product Moment Correlation Techniques. The result revealed that there is positive relationship between electronic banking and customer satisfaction in United Bank for Africa Plc, Access Bank Ltd and Keystone Bank Ltd. It also revealed that there is positive relationship between Automated Teller Machine and Mobile Banking and customer satisfaction in United Bank for Africa Plc, Access Bank Ltd and Keystone Bank Ltd. More so, the study shows that there is a negative relationship between point of sale and customer satisfaction in the three (3) banks. This implies that increase in charge levied on those

electronic banking systems will have a corresponding decrease in customer satisfaction and vice-versa. The study therefore recommends the following; that banks should improve continuously in the advance of Automated Teller Machine for speedy transaction when using by customers; financial institutions (banks) and nonfinancial institutions should endeavor to make available POS machine at a minimal cost to some small business outlets in order to help in the achievement of cashless economy; the banks should ensure that there is creation of more internet security in internet and mobile banking so as to avoid loss of cash by customers as a result of fraudulent activities and finally, continuous advancement and reengineering information communication technology should play a vital role in the overall synergy of financial institution operations (banking). It becomes more important for bank leadership to deepen investment in ICT products to increase speedy, user friendly and perfect services. These will make Nigerian banks to stand firm in terms of efficiency, profitability, reliability, and competitiveness among its global competitors and to withstand challenges and changes that may occur in ICT controlled globalized economy.

Ldama and Nasiru (2021), study on relationship between information and communication technology and performance of Deposit money banks in Nigeria, identified how some of the challenges confronting implementation of ICT in organization could be classified into three classes as human, operational and technical constraints. The human constraints include physical disability, poor sight, illiteracy and ageing. The operational constraints include insecurity of funds transferred, frauds and standardization of channels. The main objective of this study is to examine the relationship between information and communication technology and performance of deposit money bank in Nigeria. The study adopted survey research design; the population of the study comprises staff of First bank and Unity Bank Plc Mubi totally 48 staff all together. The instrument used for collecting data from the respondents is the questionnaire, and the hypotheses were tested using correlation analysis. The result shows that there is significant relationship between variables of the study since ($r = 0.876, 0.743, 0.922$ and $P < 0.05$). The finding revealed that IT infrastructures (digital devices, internet facility) are regularly maintained in the bank, web portal network for e-filling of customer is always available for employee to performance their duties. Finding also revealed that having online facility in employees' desk help to aid customers satisfaction. Employees have ICT trainings in the daily working procedures in the organization. Also the finding further revealed that, there are adequate computers available to attend to customers' complaints of any kind in the bank. The study also recommends that the management of First Bank should continue to maintain good ICT infrastructure of digital devices and internet facility that enable her employees to have access to web portal network for e-filling of their customers, this will go along way to increase the bank performance and customers level of satisfaction.

3.0   METHODOLOGY

The study adopted survey research method in obtaining the needed data. The area covered by this study is Makurdi metropolis. Makurdi is the capital of Benue State, North-Central Nigeria. This study carries out a survey of the staff of First Bank, United Bank for Africa, Access Bank, Guaranty Trust Bank and Zenith in Makurdi metropolis which 541 out of which a sample size of 230 was drawn as at 2022 on the effect of IT on performance. The multistage sampling technique was used. At the first stage, the purposive sampling technique was used to select five banks from the money deposit banks operating in Makurdi Metropolis. The five banks were chosen because they represent the categorization of both old and new generation banks.

At the second stage, simple random sampling was used to select the respondents for the study in the various banks under study. Questionnaire serves as the data collection instrument with validity and overall reliability index of .752 and .858 respectively. In this study Performance is regarded as a function of Information Technology. In this vein, this study suggest that,

PER = f (IT)   -   -   -   -   -   -   -   (3)

Where; PER = Performance

IT = Information Technology

Given that Information Technology comprises five dimensions, the implicit form of the model is given as follows:

PER = f (ATM, POS, MB, IB,BN)   -   -   -   -   (4)

Where:

ATM = Automated Teller Machine;

POS= Point of Sale system;

MB =Mobile Banking;

IT = Internet Banking; and

BN=Branch Networking

Thus, the explicit form of the model for the study will be as follows:

PER = α +b_1 ATM + b_2 POS + b_3 MB+ b_4 IT + b_5 BN+ε -   (5)

Where:

α = Intercept of the Model (constant)

$b_1$to b_5= coefficients of X_1, X_2 ......X_5 respectively

ε = error term

Other variables are as earlier defined. The study used descriptive statistics and inferential statistics with the aid of Statistical Package for Social Sciences (SPSS 23) for data presentation and analysis. Descriptive Statistics made use of Percentages and tables were used to determine demographic (socio-economic) characteristics of the respondents such as gender, age, marital status, educational qualifications and working experience. While, Inferential Statistics used Multiple-Regression analysis was used in this study to test the hypotheses. It measures the extent to which the variation in dependent variable is explained by two or more independent variables. ***Decision Rule***: Standard error test was used in testing the hypotheses and acceptance or rejection of a hypothesis was based on the decision rule which holds that:

If the standard error of $b_i[S (b_i) >^1/_2b_i]$ accept the null hypothesis; that is, accept that the estimated b_i is not statistically significant at the 5% level of significance. If the standard error of $b_i[S (b_i) <^1/_2b_i]$ reject the null hypothesis, in other words, accept that the estimated b_i is statistically significant at the 5% level of significance.

4.0   RESULTS AND DISCUSSION

This section presents data collected from the respondents, analysis of results, test of hypotheses and discussion of findings.

4.1   Data Presentation and Analysis

The result shows that a total of 230 copies of the questionnaire were distributed to the respondents and 224 (representing 97%) were correctly filled and returned while 6 (representing 3 %) were not returned. The questionnaires were distributed more than the actual sample size which enables the researcher get the actual sample from respondents.

Table 5: Demographic Attributes of Respondents

_____

Attributes	Frequency	Percentage (%)
Gender		
Male	132	58.9
Female	92	41.1
Total	**224**	**100**
Age		
18-27 years	70	31.2
28-37 years	86	38.4
38-47 years	54	24.1
48-57 years	10	4.5
58 years and above	4	1.8
Total	**224**	**100**
Educational Qualification		
SSCE	14	6.2
OND/NCE	98	43.7
HND/B.Sc/B.A	70	31.3
M.Sc/M.A//Ph.D	42	18.8
Total	**224**	**100**
Years of Experience		
1-5 Years	20	8.9
6-10 Years	45	20.1
11-15 Years	40	17.9
16-20 Years	51	22.8
21-25 Years	46	20.5
26 Years and above	22	9.8
Total	**224**	**100**
Cadre in the Organization		
Junior Staff	120	53.6
Senior Staff	75	33.5
Management Staff	29	12.9
Total	**224**	**100**

_____

Source: Field Survey, 2022.

The distribution of the respondents by gender as presented in Table 5 revealed that 132 (58.9 %) were males while 92(41/1 %) were females. This implies the participants who were staff of deposit money banks included both male and female. The age distribution of the respondents as presented in Table 5 indicated that 70(31.2 %) respondents were from 18-27 years, 86(38.4 %) 28-37 years, 54(24.1 %) 38-47 years while 10(4.5 %) were from 48-57 years and 4(1.8 %) were 58 years and above. This implies that the participants were old enough to understand the topic under investigation. The educational distribution of the respondents indicated that 14(6.2 %) have SSCE, 98(43.7 %) have ND/NCE qualifications while 70(31.3 %) have HND/Degree qualifications and 42(18.8%) have postgraduate qualifications. This indicates that majority of the participants were literate and have good knowledge on information technology and performance of deposit money banks. The

distribution of the respondents by experience showed that 20(8.9 %) respondents have experience from 1-5 years, 45(20.1%) 6-10 years, 40 (17.9 %) 11-15 years while majority of the respondents 51(22.8 %) have experience from 16-20 years and 46(20.5 %) have experience from 21-25 years. Also, 22(9.8 %) respondents have experience from 26 years and above indicating that the participants have many years experience working the banking sector with good knowledge on the topic under investigation. Finally, the result in Table 5 indicates that 120 (53.6%) of the respondents were junior staff, 75(33.5%) were senior staff while 29(12.9%) were management staff. This implies that the participants cut across all staff categories since they all had knowledge about the topic under investigation.

Table 6: Respondents Views on Automated Teller Machine (n=224)

_____

Item	Mean	ST.D	Decision
Withdrawal of cash with ATM is more convenient than over the counter withdrawal Significant	3.47	0.753	
Confidence in the use of ATM has significantly improved Significant	3.45	0.668	
ATM has made the bank innovation easy compare to manual system Significant	3.54	0.601	
ATM has reduce the work-load of bank employees Significant	3.43	0.750	
Utility of ATM's has gain worldwide popularity Significant	3.52	0.674	

_____

Source: Field Survey, 2022.

The response collected from the respondents on items 1, 2, 3, 4 and 5 were presented using mean scores and standard deviation. The result in Table 6 indicates that the respondents agreed with all the statements which showed that these are determinants of Automated Teller Machine (ATM) that affect the performance of Deposit Money Banks in Makurdi Metropolis. The mean scores ranged from 3.43 to 3.54 and they were all above the 2.50 cut-off point.

Table 7: Respondents Views on Point of Sale System (n=224)

Item	Mean	ST.D	Decision
The bank encourages its customers to employ POS service in their transactions	3.54	0.685	Significant
Our bank provides POS service which is open to all willing account holders	3.34	0.875	Significant
The POS service can be used to pay for a wide range of goods and services at many trading shops in the country	3.28	0.944	Significant
The POS service can be accessed at any time of the day	3.28	0.859	Significant
My experiences with POS are really encouraging	3.46	0.872	Significant

Source: Field Survey, 2022.

The response collected from the respondents on items 1, 2, 3, 4 and 5 were presented using mean scores and standard deviation. The result in Table 7 indicates that the respondents agreed with all the statements which showed that they are point of sale system factors that affect the performance of deposit money banks in Makurdi Metropolis. The mean scores ranged from 3.28 to 3.52 and they were all above the 2.50 cut-off point.

Table 8: Respondents Views on Mobile Banking (n=224)

Item	Mean	ST.D	Decision
Our bank provides mobile banking service which is accessible with any kind of mobile phone	2.50	1.133	Significant
Most of the bank's transactions can be processed through mobile banking	2.58	1.104	Significant
The banks provides customers with mobile customer care service	3.09	0.732	Significant
Mobile transactions can be carried out at any time of the day	3.19	0.815	Significant
Mobile transaction is very easy to do and cost effective	3.49	0.796	Significant

Source: Field Survey, 2022.

The response collected from the respondents on items 1, 2, 3, 4 and 5 were presented using mean scores and standard deviation. The result in Table 8 indicated that majority of the respondents agree with all the statements as mobile banking factors affecting the performance of Deposit Money Banks. The mean scores ranged from 2.58 to 3.49 and they were below the 2.50 cut-off point.

Table 9: Respondents Views on Internet Banking (n=224)

Item	Mean	ST.D	Decision
There is flexibility while using internet banking systems	3.39	0.838	Significant
Internet banking offers much better convenience	3.23	0.960	Significant
I can access banking services at any time	3.31	0.946	Significant
Internet banking is highly accurate	3.22	0.903	Significant
Internet banking is the cheapest way of making transactions	3.63	0.836	Significant

Source: Field Survey, 2022.

The response collected from the respondents on items 1, 2, 3, 4 and 5 were presented using mean scores and standard deviation. The result in Table 9 indicates that the respondents agreed with all the statements which showed that they are internet banking factors that affecting performance of Deposit Money Banks in Makurdi Metropolis. The mean scores ranged from 3.22 to 3.63 and they were all above the 2.50 cut-off point.

Table 10: Respondents Views on Branch Networking (n=224)

Item	Mean	ST.D	Decision
Your bank has many branches which are accessible by customers	3.21	0.961	Significant
Customers' information are accessible in every branch	3.31	0.874	Significant
The same transaction can be carried out in any branch	3.28	0.833	Significant
Communication is flexible between branches	3.27	0.797	Significant
Wide spread branches increased customer convenience	3.30	0.909	Significant

Source: Field Survey, 2022.

The response collected from the respondents on items 1, 2, 3, 4 and 5 were presented using mean scores and standard deviation. The result in Table 10 indicates that the respondents agreed with all the statements which showed that they are branch networking factors that affect the performance of Deposit Money Banks in Makurdi Metropolis. The mean scores ranged from 3.21 to 3.31 and they were all above the 2.50 cut-off point.

Table 11: Respondents Views on Performance (n=224)

_____

Item	Mean	ST.D	Decision
The adoption of internet in banking services has reduced the cost of operation accessible by customers	3.19	0.808	Significant
Service delivery has been enhanced through the use of ATM every branch	3.28	0.862	Significant
Through internet banking the usual delays encountered in the banking halls are significantly eliminated any branch	3.42	0.725	Significant
Customer complaints are resolved immediately branches	3.10	0.836	Significant
Mobile banking provides a comprehensive system of measuring and assessing customer satisfaction	3.22	0.834	Significant

_____

Source: Field Survey, 2022.

The response collected from the respondents on items 1, 2, 3, 4 and 5 were presented using mean scores and standard deviation. The result in Table 11 indicates that the respondents agreed with all the statements which showed that they are performance indicators. The mean scores ranged from 3.10 to 3.42 and they were all above the 2.50 cut-off point.

Table 12: Model Summary

_____

R	R-Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.803ª	.692	.671	.8628	1.690

_____

a. Predictors (Constant), Branch networking, POS, ATM, Internet banking, Mobile banking
b. Dependent Variable: Performance

Source: Researcher's Computation using SPSS Output, 2022.

The result from Table 12 shows that coefficient of determination (R square) explains the variation in the dependent variable due to changes in the independent variable. The R square value of .692 is an indication that there was 69.2 % variation in performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria due to changes in ATM, Point of Sale System, mobile banking, internet banking and branch networking at 95% confidence interval. Also, the value of R (.803) indicated that there was a strong relationship between the study variables.

Table 13: Analysis of Variance (ANOVA)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	15.105	5	3.021	4.404	.000^b
Residual	149.533	218	.686		
Total	164.638	223			

    a.   Dependent Variable: Performance
    b.   Predictors (Constant), Branch networking, POS, ATM, Internet banking, Mobile banking
Source: Researcher's Computation using SPSS Output, 2022.

The result from the ANOVA statistics in Table 13 indicates that the processed data, which is the population parameters, had a significance (p-value) level of .000 which is less than 5%. This implies that ATM, Point of Sale System, mobile banking, internet banking and branch networking significantly affect the performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria. The significance value was less than 0.05 which indicates that the model was statistically significant (F = 4.404, P = .000 < 0.05).

Table 14: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	2.535	.469		5.403	.000
ATM	.321	.075	.214	3.603	.010
POS	.283	.088	.269	2.944	.016
Mobile banking	.267	.086	.261	2.752	.013
Internet banking	.265	.086	.260	2.750	.024
Branch networking	.420	.095	.264	3.679	.001

a. Dependent Variable: Performance
Source: Researcher's Computation using SPSS Output, 2022.

The result in Table 14 indicated that a unit change in ATM will affect the performance of Deposit Money Banks (DMBs) in Makurdi Metropolis by 32.1%, a unit change in POS will affect performance of DMBs in Makurdi Metropolis by 28.3 % and a unit change in mobile banking will affect the performance of DMBs in Makurdi Metropolis by 26.7 %. The study also revealed that a unit change in internet banking will affect performance of DMBs in Makurdi Metropolis by 26.5 % while a change in branch networking will result to 42.0% increase in performance of DMBs. The p-values for ATM, Point of Sale System, mobile banking, internet banking and branch networking (.010, .016, .013, .024 and .001) respectively were less than 0.05 implying that Information Technology significantly affects the performance of DMBs in Makurdi Metropolis. The coefficients of the variables were as

follows: ATM (.214), POS (.269), mobile banking (.261), internet banking (.260) and branch networking (.264). The result shows that branch networking has more significant effect on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria.

4.2 Test of Hypotheses

H0₁: Automated Teller Machine has no significant effect on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria. To test this hypothesis, the strength of the effect of Automated Teller Machine on bank performance was measured by the calculated p-value = .010 at a significance level (α) of 0.05. Since the computed p-value is less than the significance level (α) of 0.05 (*p-value* .010 < α 0.05), the null hypothesis was rejected. The result implies that Automated Teller Machine has significant effect on the performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria

H0₂: Point of Sale Electric Funds Transfer has no significant effect on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria. To test this hypothesis, the strength of the effect of Point of Sale Electric Funds Transfer on bank performance was measured by the calculated p-value = .016 at a significance level (α) of 0.05. Since the computed p-value is less than the significance level (α) of 0.05 (*p-value* .016 < α 0.05), the null hypothesis was rejected. It is therefore concluded that Point of Sale Electric Funds Transfer has significant effect on the performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria.

H0₃: Mobile banking has no significant effect on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria. To test this hypothesis, the strength of the effect of mobile banking on bank performance was measured by the calculated p-value = .013 at a significance level (α) of 0.05. Since the computed p-value is less than the significance level (α) of 0.05 (*p-value* .013< α 0.05), the null hypothesis was accepted. This result implies that mobile banking has significant effect on the performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria

H0₄: Internet banking has no significant effect on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria. To test this hypothesis, the strength of the effect of internet banking on bank performance was measured by the calculated p-value = .024 at a significance level (α) of 0.05. Since the computed p-value is less than the significance level (α) of 0.05 (*p-value* .024 < α 0.05), the null hypothesis was rejected. It implies that internet banking has significant effect on the performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria.

H0₅: Branch networking has no significant effect on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria. To test this hypothesis, the strength of the effect of branch networking on bank performance was measured by the calculated p-value = .001 at a significance level (α) of 0.05. Since the computed p-value is less than the significance level (α) of 0.05 (*p-value* .001 < α 0.05), the null hypothesis was rejected. It is concluded that branch networking has significant effect on the performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria.

4.3   Discussion of Findings

The analysis of the data collected from the respondents revealed that Automated Teller Machine has significant effect on the performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria. Regression analysis was used to test the hypothesis at 5 % level of significance and the p-value (0.010) was lower than the significance level. This can be statistically given as P-value $0.010 < \alpha = 0.05$. This result agrees with Mcphail, Fogarty and Gerard (2020) who reported a significant relationship between the use of ATMs and performance. The use of ATMs according to a study by Chukwukado, Onyeiwu and Amah (2015) indicated that there is positive effect of ATM on the performance of deposit money banks in Nigeria. The implication of the finding is that the use of ATMs by banks significantly improves the rate of service delivery since banks are able to offer 24 hours services with ATMs.

Findings of the study indicated that Point of Sale Electric Funds Transfer has significant effect on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria. Regression analysis was used to test the hypothesis at 5 % level of significance and the p-value (0.016) was lower than the significance level. This can be statistically given as P-value $0.016 < \alpha = 0.05$. This finding is supported by Anguelov, Hilgert and Hogarth (2019) who asserted that point of sale system has significant effect on organizational performance. Similarly, Okonkwo, Obinozie and Echekoba (2015) stated that there is significant relationship between point of sales and bank performance. The implication of the finding is that point of sale system has reduced congestions in banking halls and most customers are satisfied with such services.

Findings indicated that mobile banking has significant effect on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria. Regression analysis was used to test the hypothesis at 5 % level of significance and the p-value (0.013) was greater than the significance level. This can be statistically given as P-value $0.013 < \alpha = 0.05$. In line with the result, Sobul and Cron (2016) found a significant effect of mobile banking on bank performance. Ringim, Razalli and Hasnan (2015) in their study, established a positive significant effect of mobile banking on the performance of deposit money banks. This is also agreed by Hadadi and Ajibola (2018) who affirmed that the use of mobile banking has significantly improved bank performance. The implication of the finding is that with mobile banking customers can carry out bank transactions in the comfort of their homes without necessarily going to the bank.

Result of the analysis of the data collected from respondents revealed that internet banking has significant effect on performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria. Regression analysis was used to test the hypothesis at 5 % level of significance and the p-value (0.024) was lower than the significance level. This can be statistically given as P-value $0.024 < \alpha = 0.05$. The result of previous studies by Simon and Thomas (2016) showed a positive and significant effect of internet banking on customer satisfaction. Nochai and Nochai (2013) in their study also found a significant effect of internet banking on service delivery of banks. The implication of the result is that internet banking services enable banks to connect with large number of customers globally without having physical interface and this saves time and resources.

Result of the analysis of the data collected from respondents revealed that branch networking has significant effect on performance of deposit money banks in Makurdi

Metropolis, Benue State, Nigeria. Regression analysis was used to test the hypothesis at 5 % level of significance and the p-value (0.001) was lower than the significance level. This can be statistically given as P-value $0.001 < \alpha = 0.05$. The result is in agreement with Claeys and Vennet (2008) who posited that expanding branch networks improves the branch effectiveness in generating revenues from retail banking. A study by Adelowotan (2016) found that branch network significantly improve the performance of deposit money banks in Nigeria. The implication of the result is that most banks have improved their operations with increase in the number of branches they operate. It also implies that increase in size of the branch network engenders a downturn in organizational performance.

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

This section presents conclusion, recommendations, limitations of the study and suggestion for further studies

5.1 Conclusion

The study was carried out to examine the effect of information technology on the performance of deposit money banks in Makurdi Metropolis, Benue State, Nigeria. Findings of the study showed that information technology significantly affects the performance of deposit money banks in Nigeria. The study concluded that the use of ATM has positively affected the performance of deposit money banks in Nigeria. The study also concluded that the use of point of sale system has helped in improving the performance of banks in Nigeria. The study further concludes that mobile banking has helped to reducing queues in banking halls thereby improving their performance and internet banking significantly affects the performance of deposit money banks in Nigeria by allowing customers to carry out transactions with ease. Finally, the study concludes that branch networking positively affects the performance of deposit money banks in Nigeria.

5.2 Recommendations

Based on findings of the study, the following recommendations are made:

i. Management of deposit money banks should ensure that ATMs are user-friendly, easily accessible and there is privacy so that customers will be satisfied with their services and this will improve performance.

ii. Deposit money banks should ensure effectiveness of point of sale system to help improve their performance in terms of quality of service delivery and customer satisfaction.

iii. Management deposit money banks should enhance application of mobile banking to increase satisfaction of their customers. Mobile service providers in conjunction with banks should develop more friendly and easy to use and efficient applications for bank customers.

iv. Management of deposit money banks should enhance their internet banking to make it flexible, fast and easy to use. Also, the government and its agencies should formulate policies that enhance application of internet banking across all financial institutions in Nigeria. This may include legislations on how to curb cyber-crime.

v. Deposit money banks should increase the size, number, and geographical spread of branch networks since it has a positive effect on organization performance. They should provide the depositors with more convenience by means of a larger branch network.

5.3 Limitations of the study

The study was conducted in the banking industry with specific focus on selected deposit money banks (First Bank, United Bank for Africa, Guaranty Trust Bank, Access Bank and Zenith

Bank) within Makurdi Metropolis, Benue State hence other banks were not covered by the study. Another limitation of the study was the measurement of variables. The study considered the effect of information technology on bank performance using cost reduction, service delivery and customer satisfaction. Other measures of performance such as profitability, liquidity and assets growth were not investigated.

5.4 Suggestion for Further Studies

The study suggests that further studies should be conducted on information technology and performance of deposit money banks in other town in Nigeria. Further studies could also be replicated on the topic to cover listed deposit money banks in Nigeria. Also, further studies should examine the challenges of using information technology in the banking industry in Nigeria. Since the focus of the study was limited to organizational performance, further studies should investigate the effect of electronic banking on customer satisfaction in the Nigerian banking industry. Finally, other researchers could consider the effect of information technology on organizational performance in other sectors such as manufacturing and education.

REFERENCES

Abaenewe, Z. C., Ogbulu, O. M. and Ndugbu, M. O. (2013) Electronic Banking and Bank Performance in Nigeria *West African Journal of Industrial and Academic Research* 6 (1) 15 - 29

Abdulsalam, O. D. (2006): *Impact of Information Technology on Corporate Performance: A Study of selected Banks in Nigeria*. A Ph.D. Thesis submitted to the Postgraduate School, Usmanu Danfodiyo University, Sokoto.

Abubakar, M., Nasir, M. G. & Haruna, S. B. (2013). Impact of Information and Communication Technology on Bank Performance: A Study of selected Commercial Banks in Nigeria (2001 – 2011). European Scientific Journal, 9, (7), 213-239.

Adesina, A. A. and Ayo, C. K. (2010), An Empirical Investigation of the Level of Users' Acceptance of E-Banking in Nigeria, *Journal of Internet Banking and Commerce,* 15 (1), 101 - 119

Adewoye, J.O. (2013). Impact of Mobile Banking on Service Delivery in the Nigerian Commercial Banks. International Review of Management and Business Research, No. 2, Vol. 2, pp. 23-32.

Agbolade, O. K. (2011) Information and Communication Technology and Banks Profitability in Nigeria *Australian Journal of Business and Management Research,* 1 (4), 77 – 91

Agboola A (2006). Information and communication technology (ICT) in banking operations in Nigeria: An Evaluation of Recent Experiences, 1(1),276-289.

Agboola, A. A. (2001) "Impact of Electronic Banking on Customer Services in Lagos, Nigeria" in Ife Journal of Economics and Finance. Department of Economics, O.A.U, Ile-Ife, Nigeria, vol. 5, Nos. 1&2

Agboola, A.A (2003): 'InformTechnology, Bank Automation, and Attitude of Workers in Nigerian Banks' in Journal of Social Sciences, Kamla-Raj Enterprises, Gali Bari Paharwali, India.

Akani, H.W. and Tony – Obiosa, R.L. (2020). Effects of Financial Innovations on the Profitability of Deposit Money Banks in Nigeria. *European Journal of Accounting, Auditing and Finance Research Vol.8, No.1, pp.52-73*

Akinyomi, O. J. (2010), The Impact of Information Technology on the Operations of Nigerian Banks. *Journal of Research in National Development,* 8 (2), 1 – 9

Ali, N. M., Beigi, S. J., Reza, S. T. and Hamed M. B. (2016). The Study of the Effects of E-banking Services Quality on Customers' Satisfaction and Loyalty (Case Study: Agricultural Bank

of Khuzestan Province). *Journal of Current Research in Science*, No. 1, Vol. 5, pp. 375-381.

Aliyu, A,A., Tasmin, R., and Lame S.M. (2013):Impact of Electronic Banking on Customer Service Delivery in the Malaysian Banking Industry: Using Kano's Model. The international journals, research journal of social science & management ISSN: 2251 – 1571.

Anazodo, R.O.; Okoye, J.C. and Chukwuemeka, E.E.O. (2012). Civil Service Reforms in Nigeria: The Journey so Far in Service Delivery. *American Journal of Social and Management Sciences,* 3(1), 17-29.

Anguelov, C., Hilgert, M., & Hogarth, J. (2019). US Consumers and Electronic Banking: 1995-2003. Federal Reserve Bulletin, 90(1), 13–16

Asuquo, B. and Ezekwe, C. (2020). Electronic Banking Services and Customers' Satisfaction in Deposit Money Banks in Rivers State, Nigeria. *IOSR Journal of Economics and Finance (IOSR-JEF)* Vol. 11(4) PP 53-59

Babatunde, M.O. and Salawudeen, M.O. (2017). Analysis of the Impact of Electronic Banking on Customers' Satisfaction in Nigeria. *Greener Journal of Business and Management*, No. 7, Vol. 3, pp. 030-042

Banking, 35 (2), The Ohio State University Press, Ohio, 2003, pp. 141-176.

Bhattacharya, A. (2006). Technology in banking "A strategic Resource". Chartered Financial Analyst.

Binugo, A. O. & Aregbeshola, R. A. (2014). The Impact of Information Communication Technology on commercial bank performance. Problems and Perspective in Management, 12(3): 59-68.

Brynjolfsson, E. and Hitt, L.M. (2000) "Beyond computation: information technology, organizational transformation and⌉ business performance," Journal of Economic Perspectives, 14(4), pp. 23-48.

Chukwukaelo, U, Onyeiwu C, and Amah, P. (2018). Impact of Information Technology on Performance of Banks in Nigeria. American Journal of Humanities and Social Sciences Research.

Cowdhury M.S.A. and Marufullah M (2013),"Usage of Information Technology by the Commercial Banks Operating in Bangladesh-Current Situation and Its Future ", Journal of Economic Crime Management, Volume 4, Issue 2.

Cronin, M. J. (2007). *Banking and Finance on the Internet, (5th edn.).* Oxford – United Kingdom: John Wiley and Sons Press. pp. 41

Dabwor, T. D., Ezie, O. & Anyatonwu, P. (2017). Effect of ICT adoption on competitive performance of banks in an emerging economy, the Nigerian experience. Journal of Humanities and Social Science, 22(8): 81-89.

Ebere, C. E., Fagbola, L.O., Jolayemi, L.B., and Balogun, A.S. (2020). Electronic Banking and Customers' Satisfaction: Evidence from some Selected Deposit Money Banks in Nigeria. AUDŒ, Vol. 16, no. 2/2020, pp. 363-374

Ekanem, E.U.U, Alhaji, A.K, Adeniyi, M.Y, and Adeogun, B.S. (2017). Impact of Automated Teller Machine on Customer Satisfaction and Profitability of Commercial Banks. International Journal of Banking and Finance Research, No. 3, Vol. 2, pp. 15-28.

Hirschey, M. (2008). *Managerial Economics*, 12th Edition. South-Western Cengage Learning, 5191 Natorp Boulevard Mason, OH45040, USA.

Iluno, E.C, Farouk, B.K.U and Saheed, Z.S. (2018). Impact of the electronic banking products and services on the customer's satisfaction: a case study of Kaduna state, Nigeria.

Journal of Good Governance and Sustainable Development in Africa, No. 4, Vol. 2, pp. 21-33.

Imoekparia, A. E. L. (2006), The Impact of Information Technology on Internal Audit in Nigeria Organizations. *Journal of Business Management,* 1 (2), 130-147.

Isibor, A.A., Omankhanlen, A.E., Okoye, L.U., Achugamonu, B.U., Adebayo M.E., Afolabi, G.T., and Ayodeji, O.E. (2018). Impact of Electronic Banking Technology On Customers' Satisfaction And Economic Growth In Nigeria, International Journal of Civil Engineering and Technology (IJCIET) Volume 9, Issue 12, December 2018, pp. 536–544

ITAA, (2012), *Information Technology.* [Online] Available from: https://en.wikipedia.org/ wiki/Information_Technology_Association_of_America [Accessed on 15th July, 2018]

Iyabi, D. P. (2007) *Smart card in Nigerian Banking – All states Trust Bank Practical Experience.* Lagos, FITC most shop for Top Exercise.

Iyabi, I (1997): Electronic Banking' Banking News International, Ikeja, Lagos

Jayawardhena, C. and Toley, P. (2000). Changing in the Internet Banking Sector-The case of Internet in UK, Internet Research. Electronic Networking Application and Policies. 10(1), 19-30.

Joshua A. A. and Akintoye R. O. (2019) Electronic Banking and Customers Satisfaction in Yewa Ilaro Ogun State Nigeria: The Customers' Perspective. *1st National Conference of WITED, Ilaro Chapter. The Federal Polytechnic, Ilaro August* 13-16, 2019

Karjaluoto, H., (2012). Factors underlying attitude formation towards online banking in Finland, *International Journal of Bank Marketing*, 11(6), 222-239.

Kawamala, N. (2013). Investigating e-banking and customer satisfaction in Tanzanian banks the case of Azania bank ltd. (Unpublished Master's Thesis). Open university of Tanzania. Retrieved from https://repository.out.ac.tz/id/ eprint/965

Laudon, D.P. and Laudon, J.P. (2001): Management Information Systems: Organisation and Technology in the Network Enterprises, 4th ed. Prentice Hall International in. U.S

Ldama, J. and Nasiru, M. (2021). Relationship between Information and Communication Technology and Performance of Deposit Money Bank in Nigeria. EPRA International Journal of Multidisciplinary Research (IJMR) -Peer Reviewed Journal. Vol. 7 Issue: 2 Pp. 309-318

Lee M. C. and Hwan, I. S.. (2005). Relationship among service quality and profitability in the Taiwanese banking industry. International Journal of Management, 22(4), 635-648.

Legris, P., Ingham, J., &Collerette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management*, 40, 191-204.

Lin, T. T., Lee, C. C., & Chiu, T. F. (2009). Application of DEA in analyzing a bank's operating performance. Expert Systems with Applications, 36(5), 8883-8891.

Luka, M. K. & Frank, I. A. (2012). The impact of ICTs on banks: A case study of the Nigeria banking industry. International Journal of Advanced Computer Science and Applications, 3(9): 145-149.

Madueme, I. S., (2010). Banking efficiency and information technology in Nigeria: An empirical investigation. International Journal of Economics and Development 8(1 &2): 86-96.

Maiyaki, A. U. & Mokhtar, S. M. (2010). Effects of electronic banking facilities, employment sector and age – group on customers' choice of banks in Nigeria. Journal of Inter Banking and Commerce, 15(1).

Malhotra, P. & Singh, B. (2009). The impact of internet banking on performance and risk: The Indian experience. Eurasian Journal Business and Economics 2(4), 43-62

McPhail, J., & Fogarty, G. (2020). Mature Australian consumers' adoption and consumption of self-service banking technologies. Journal of Financial Services Marketing, 8(4), 302–313.

Melville, M., Kraemer, K. & Gurbaxani (2004). Information technology and organizational performance: an integrative model of IT business value, MIS Quartely, 28 (2),283-322.

Mohammad, A. O. & Saad, A. A. (2011). The impact of e- banking on the performance of Jordanian Banks, Journal of Internet Banking and Commerce, 16(7), 66-87.

Nochai, R. &Nochai, T. (2013). Impact of Internet Banking on Customer Satisfaction in Thailand: A Study of Bangkok. *International Journal of Humanities and Management sciences*, 1(1), 101-1 05.

Nwakoby, N. P., Sylvester. A. O. & Philip, C. S. (2018). Impact of Information and Communication Technology on the Performance of Deposit Money Banks in Nigeria. International Journal of Management and Sustainability, 7(4): 225-239.

O'Hearn, S. (2016) More for Less: Five Steps to Strategic Cost Reduction. [Online] Available from: www.pwc.com/insurance. [Accessed on 7th December, 2018]

Ogunlowore, A.J & Oladele, R. (2014). Analysis of electronic banking and customer satisfaction in Nigeria. *European Journal of Business and Social Sciences*, Vol. 3, No. 3, pp. 45-53.

Oladejo, M. O. O., and Adereti, A. S. (2010), The Impact of Information Technology on the Performance of Microfinance Institutions in Nigeria*, Journal of Economic Development and Managerial Studies,* 1 (1), 59 -72.

Olannye, A. P. & Dedekuma, S. E. and Ndugbe, E. H. (2017). Enhancing Customer Retention through Electronic Service Delivery Channels in the Nigerian Banking Industry, Vol. 8, No. 5, pp. 57-68.

Olusola, A. and Oluwaseun, Y. (2013), An Appraisal of the Impact of Information Technology on Nigeria Small and Medium Enterprises Performance, *International Journal of Academic Research in Management,* 2 (4):111 - 128

Oluwagbemi, O. Abah, J. and Achimugu, P. (2011). Impact of Information Technology in Nigeria's Banking Industry. *Journal of Computer Science and Engineering*, 7(2):45-57.

Oluwagbemi, O., Abah, J. and Achimugu, P. (2011) The Impact of Information Technology in Nigeria's Banking Industry. *Journal of Computer Science and Engineering,* 7(2), 92 - 109.

Ongori, H. and Migiro, S.O. (2010). Information and Communication technology adoption: a literature review, *Journal of Chinese Entrepreneurship*, 2 (1), 93-104.

Oppong, P., Adjei, H. and Poku, K. (2014), The Role of Information Technology in Building Customer Loyalty in banking: A Case Study of Agricultural Development Bank Ltd., Sunyani, *British Journal of Marketing Studies.* 2 (4), 9-29

Ovia, J. (2001). Internet banking practices and potentials in Nigeria. Paper Delivered at a Workshop Organized by Institute of Chartered Accountants of Nigeria at Lagos.

Ovia, J. (2015). Internet Banking: Practices and Potentials in Nigeria. A paper presented at a seminar organized by the Institute of Chartered Accountants of Nigeria (ICAN) Lagos Sheraton Hotel& Towers. Ikeja. September 05.

Oyinkola, S., (2018). The impact of Information technology on banking operations in First Bank of Nigeria PLC. Available from www.researchclue.com.

Pavlou, P. A. (2013). Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model. *International Journal of Electronic Commerce*. 7(3), pp. 101-134.

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., and Pahnila, S. (2004). *Consumer acceptance of online banking: an extension of the technology acceptance model*. Internet Research (3): 224-235.

Polasik, M. and Wisniewski, T.P. (2008). Empirical analysis of internet banking adoption in Poland, *International Journal of Business Management*, 27 (1), 67 - 79

Prabhakar Rao (2014), Indian banking in 2015, IBA Bulletin Special Issues, (pp 170-173).

Rashidirad, M., Syed, J. and Soltani, E. (2012). The strategic alignment between competitive strategy and dynamic capability and its impact on e-business, *International Proceedings on Economic Development and Research*, 11 (2) 52-54.

Rastrick, K. and Corner, J. (2010). Understanding ICT Based Advantages: A Techno Savvy Case Study, *Interdisciplinary Journal of Information, Knowledge, and Management*, 2 (17), 305-326

Roger, E. M., (2016). Diffussion of Information. 6th Edn., New York: The Free Press.

Sadaf, F. & Rahela, F. (2017). Impact of internet banking service quality on customers. *Journal of Internet Banking and Commerce satisfaction*, Vol. 22, No. 1, pp. 2-17.

Saeid, K. D. (2011). The Impact of Information Technology in Banking System: A Case Study in Bank Keshavarzi IRAN. Journal of Social and Behavioral Sciences 30, 13 – 16

Simon, V.T., and Thomas, A.S.R. (2016). Effect of electronic banking on customer satisfaction in selected commercial banks, Kenya. International Academic Journal of Human Resource and Business Administration, 2(2), 41- 63.

Simon, V.T., Thomas, A. and Senaji, R. (2016). Effect Of Electronic Banking On Customer Satisfaction In Selected Commercial Banks, Kenya. International Academic Journal of Human Resource and Business Administration | Volume 2, Issue 2, pp. 41-63.

Sobol and Cron (2016) "Impact of information Technology on Indian banks", International Journal of Bank Marketing, 19(7): 276–291

Sulieman, I. S. A. and Ahlam, J. A. H. (2017). The Impact of Electronic Banking Services on the Customers Loyalty of Commercial Banks in Jordan. International Journal of Academic Research in Accounting, Finance and Management Sciences, Vol. 7, No. 1, pp. 50-63.

Sulieem, Ibraheem Shelash Al-Hawary & Ahlam, Jebreen Ahmad Hussien (2017). The Impact of Electronic Banking Services on the Customers Loyalty of Commercial Banks in Jordan. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, Vol. 7, No. 1, pp. 50-63

Taiwo, J. N., & Agwu, M. E. (2017). The role of e-banking on operational efficiency of banks in Nigeria. *Basic Research Journal of Business Management and Accounts* 6(1), 01-10.

Tan, M., &Teo, T. S. (2000).Factors influencing the adoption of Internet banking.Journal of the Association for information Systems, 1(1), 5.

Ugwu L.O. Oyebisi T.O., Ilori M.O. and Adagunodo E.R. (2000) 'Organisational Impact of Information Technology on Banking and Insurance Sector in Nigeria' TECHNOVATION Vol. 20, No 12.

White, H. and Nteli, F. (2004), Internet Banking in the UK: Why are there not more Customers? *Journal of Financial Services Marketing*, 9 (1) 49 – 60.

Wilson, U. A., Odo, C. O. & Ikenna, E. (2014). The impact of information technology on bank profitability in Nigeria. African Journal of Science, Technology, Innovation and Development, 6(1): 31- 37

Woherem, E. W. (2000). Information Technology in the Nigerian Banking Industry, Spectrum, Ibadan

Wurim, B. P. (2012). Human Capital Planning and Organizational Performance in the Nigeria Public Sector, *Journal of Research in Arts and Social Sciences*, 1(1), 221- 233.

Yousafzai, S., (2012). A literature review of theoretical models of ICT banking adoption at the individual level financial services marketing, systemic financial crises: Containment and resolution. Cambridge, UK: Cambridge University Press