# EFFECT OF INFORMATION AND COMMUNICATION TECHNOLOGY ON THE PERFORMANCE OF POLARIS BANK, KADUNA

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## **ABSTRACT**

This study examines the impact of information and communication technology on Polaris Bank's performance. The research identifies the obstacles that customers face when using mobile banking systems in conjunction with automatic payment machines, point of sale, and mobile transactions. These challenges include network failures, delays, and insufficient ICT infrastructure in rural areas to facilitate innovation. The population for this study comprises 320 staff members, with a calculated sample size of 178 respondents selected through random sampling. Data collection was carried out using structured questionnaires, which were distributed to Polaris bank staff and analyzed through multiple regression techniques to assess the significance of the relationship between the independent variables (ICT) and dependent variables (performance of Polaris bank). The study found that automatic payment instruments, point of sale, and mobile business positively impact Polaris Bank's performance. The study recommended that Polaris Bank should allocate substantial resources toward upgrading its ATM infrastructure, particularly in areas with frequent network failures to improving its effectiveness; the bank should initiate a widespread customer education and empowerment campaign to raise awareness of the capabilities and benefits of POS systems. This will help customers fully utilize these technologies, improving both user experience and overall bank performance and continuous maintenance and upgrade of mobile banking systems are necessary to prevent outages, ensure smooth operations, and enhance customer satisfaction.

**Keywords**: Communication, Infrastructure, Information, Performance and Technology

## INTRODUCTION

Commercial banks are specialized institutions that accept deposits and provide financial services to both businesses and individuals. We cannot overstate their indispensable role in the efficient and effective operation of banks, the nation's foremost financial service providers (Binugo & Aregbeshola, 2014). Business transactions, particularly in the financial sector. were challenging and stressful prior to the emergence of information technology. Consequently, Nigerian institutions demonstrated inadequate performance.

Over the last ten years, technology has affected every Nigerian institution's performance. During this time, technology has come together with a strong consumer emphasis on banking services, outstanding values, and exceptional value. Information and communication technology (ICT) has advanced recently, and this has had a substantial impact on how businesses operate today, according to Binugo and Aregbeshola (2014). Recent advancements in the virtual knowledge economy underscore this development. It is also crucial to note that robust research and development efforts on both a local and global scale have resulted in contemporary

banking in Nigeria, and ICT influences all processes associated with contemporary finance.

ICT is increasingly dominating a variety of including salary preparation reservation ordering on a daily basis, as well as strategic endeavors like company acquisition. The significance of ICT has led to numerous research initiatives in the banking industry. Despite the evident advantages, the introduction of electronic payments in Nigeria has not been without its challenges. Some of the primary obstacles encountered by electronic payment methods in Nigeria include arbitrary debt, network malfunctions, delays, and the tendency of fraudsters to block ATM cards and hack into bank depositors' accounts (Shehu & Ogare 2013). These practices have discouraged some electronic payers from registering Electronic Payment Methods (EPM) Platforms, causing apprehension and concern.

Lastly, the banking industry may experience a positive impact as a result of the decreased volume (value) of business, which will increase its profit, return on assets, and return on investment. Over the last ten years, technology has significantly impacted the performance of all Nigerian institutions. Through electronic mobile banking, ATMs, and point-of-sale (POS) systems, this accomplishment has been realized. A strong emphasis on high performance, quality standards, and banking services for customers complemented this period. technological advancements in information and communication technology (ICT) significantly altered the conduct of business today, according to Binugo and Aregbeshola (2014). Recent advancements in the virtual knowledge economy underscore this development. It is also crucial to note that contemporary banking in Nigeria is the outcome of robust research and development efforts on both a local and global scale.

The researchers selected this topic to investigate the influence of ICT on the operations of Polaris Bank plc in order to establish a continuous process of ICT adoption in the operations of a Nigerian commercial bank. Although Nigerian banks have rapidly adopted information technology tools to improve banking operations through the use of the Internet, online banking, point of sale (POS), automatic teller machines (ATM), and mobile transactions, they continue to face the challenge of continuously modernizing their operations to enhance the quality-of-service delivery, increase productivity, and reduce the average operating cost and time.

The majority of deposit money banks are currently facing significant challenges due to their internal and external environments. As they operate within an industry and face numerous competitors, these challenges can impede their growth and success. Consequently, it is imperative for business organisations to implement a strategy that provides them with a competitive advantage by incorporating and utilising information and communication technology. Banks implement ICT-based banking products and services, such as automatic teller machines (ATMs), internet banking, mobile banking solutions, point-of-sale terminals, computerized banking accounting and reporting, and human resources solutions, among others, in order to capitalize on the potential advantages of ICT and banking innovation. However, there is a debate about how much the integration of ICT enhances the performance of deposit money institutions, especially in Nigeria. Nevertheless, consumers continue to encounter network system delays and failed transactions. This study strives to examine the influence of ICT on Polaris Bank Plc's performance in response to these challenges.

# **Objectives of the Study**

The major purpose of the study is to investigate how information and communication technology affects the performance of Polaris bank. Specific objectives are:

 Examine the effect of Point of Sale (POS) on performance of Polaris Bank PLC

- ii. Determine the effect of Automatic Teller Machine (ATM) on performance of Polaris Bank PLC
- iii. Examine the effect of Mobile Banking (MB) on performance of Polaris Bank PLC

# LITERATURE REVIEW AND THEORETICAL FOUNDATION

# **Information and Communication Technology**

Information and communication technology encompasses the collection. storage. manipulation, and transmission of information are all part of information and communication technology. Ancillary equipment, software, telecommunications, and computers, including automated teller machines and debit cards, enable the automation of processes, controls, and information production. It is a term that broadly denotes the use of electronic technology to satisfy a business's information needs at all levels. ICT collectively refers to the physical devices and software that facilitate data transmission from one physical location to another and connect a diverse array of computer hardware components.

According to Roger (2016) ICT is a critical element of the modern world and is the outcome of the integration of communication devices and computing. Consequently, the banking industry's most significant deficiencies are the pervasive inability of senior management to understand technological advancements and incorporate them into their strategic plans. According to Yousafzai (2012) the implementation of ICT banking is a complex and multifaceted procedure. The joint consideration of the personal, social, psychological, utilitarian, and behavioral aspects of consumers will ultimately achieve the desired behavior, which holds greater significance than mere adoption. Akombo (2011) asserts that banks need to establish a link between their profitability and these innovations to gain a competitive advantage.

## **Automatic Teller Machine (ATM)**

This device dispenses cash and essentially performs all of the functions that an attendant in a banking hall would perform, including balance inquiries, microstatements, bill payments, and recharge functions. In order to access cash, it is necessary to provide a personal identification number (PIN) and a credit or debit card. Specific ATMs permit cash deposits and utility payments. The Central Bank of Nigeria (CBN) awarded the bank N55 as income from the fourth transaction a cardholder of another bank made at the ATM terminal. It allows you to withdraw funds or make transfers. Using a debit card or credit card, it is possible to withdraw currency from the dispenser. Customers may escalate their concerns to the Central Bank of Nigeria (CBN) if banks fail to respond to ATM complaints within 72 hours. In addition, the Central Bank of Nigeria (CBN) is seeking to establish a card arbitration tribunal that will serve as a payments system ombudsman, thereby expediting the resolution of disputes. It is also crucial to note that the conversion of cards to chip + PIN technology has substantially reduced card fraud, particularly at ATMs.

# Point of Sale (POS) Terminal

Point of Sale systems are critical components in modern retail environments, allowing customers to make payments via card at physical locations. In the banking industry, POS systems facilitate easier, faster, and more secure transactions by integrating various payment methods into a single platform. This technology not only enhances the customer experience by reducing transaction times but also helps businesses track sales and inventory more effectively (Hsu & Chiu, 2018). According to Kumar and Singh (2021), the adoption of POS systems has increased transaction security, reduced instances of fraud and enhancing customer trust in banking institutions.

## **Mobile Banking**

Mobile Banking platforms empower customers to perform various banking transactions using their mobile devices. This technology enhances convenience and accessibility, particularly in rural and underserved areas where traditional banking services may be limited (Malaquias & Hwang, 2019). The ability to conduct transactions such as fund transfers, bill payments, and balance inquiries at any time and from anywhere has transformed how customers interact with their banks (Zhao et al., 2022). Research by Bada et al. (2023) emphasizes that mobile banking not only improves user engagement but also fosters financial inclusion by providing access to banking services for populations that were previously unbanked.

# **Organizational Performance**

Organizational performance is the biggest issue for all organizations, profit or nonprofit. In order to implement the necessary measures, managers must understand the factors that affect an organization's performance. However, process of defining, conceptualizing, measuring performance has been difficult. Organizational researchers are still grappling with the contentious issue of performance, which is characterized by varying definitions and opinions among themselves (Barney, 2008). For example, Javier (2007), as cited in Nikbin et al. (2010), argues that performance is comparable to the renowned 3Es (efficiency, economy, and efficacy) of a particular program or activity.

However, Daft (2009) posits that organizational performance is the ability of an organization to accomplish its goals by utilizing resources in a manner that is both effective and efficient.

## **Operational Efficiency**

Operational efficiency in banking refers to the ability to minimize costs, maximize output, and ensure that processes are executed quickly and accurately. In the context of ICT, operational efficiency includes the automation of banking tasks, the reduction of human errors, and streamlined operations (Oke & Oladimeji, 2016). The deployment of ATMs, mobile banking, and online banking services has allowed banks like Polaris Bank to process

transactions faster, reduce queuing time, and lower operational costs.

ICT enables banks to automate various processes, reducing manual operations and enhancing speed. ATMs allow customers to withdraw cash, check account balances, and transfer funds without the need for branch staff involvement. Similarly, mobile applications facilitate online transactions, further reducing in-branch congestion (Oke Oladimeji, 2016). In Polaris Bank. automation of banking tasks through ICT tools has led to faster transaction processing, improved accuracy, and reduced labor costs.

# **Service Delivery**

Service delivery in banking refers to the manner in which banks offer services to their customers. Efficient service delivery is characterized by the speed, reliability, and accessibility of banking services. ICT tools enable banks to offer 24/7 service options, reduce wait times, and provide accurate and timely transactions (Adeola & Evans, 2017). Polaris Bank's use of ICT solutions has enhanced the bank's ability to deliver services both in-branch and via digital platforms.

One of the primary advantages of ICT in banking is the accessibility of services. Customers can access Polaris Bank's services 24/7 through mobile banking, ATMs, and online platforms. This level of accessibility improves the customer experience, as individuals are no longer restricted to banking hours to complete transactions (Oke & Oladimeji, 2016). The ability to check account balances, transfer funds, and pay bills at any time enhances the bank's service delivery.

## **Customer Satisfaction**

Customer satisfaction is the extent to which a bank meets or exceeds the expectations of its customers. In banking, factors influencing satisfaction include the ease of using banking channels (e.g., ATMs, mobile apps), the quality of customer service, and the reliability of services (Shehu & Ogare, 2013). ICT improves customer satisfaction by offering convenience, reducing transaction times, and providing secure banking platforms.

ICT provides customers with the convenience of accessing banking services from any location and at any time. Mobile banking, for example, allows customers to perform banking transactions without visiting a branch, offering greater flexibility (Shehu & Ogare, 2013). This flexibility increases customer satisfaction by reducing the time and effort required to manage their finances.

# **Empirical Review**

Nwankwo & Okonkwo (2023) investigates the role of Information and Communication Technology (ICT) in enhancing organizational performance within the Nigerian banking sector. Using an empirical approach, the research examines how ICT tools such as mobile banking, online platforms, Automated Teller Machines (ATMs), and Point of Sale (POS) systems contribute to improving operational efficiency and customer satisfaction. A sample of five leading commercial banks in Nigeria was selected, and data were gathered through surveys and performance reports. The findings reveal that ICT adoption has significantly reduced transaction time, expanded customer reach, and improved service delivery, which, in turn, has positively impacted overall organizational performance.

Olagunju, & Fagbemi (2023) examines the relationship between Information and Communication Technology (ICT) adoption and the financial performance of Nigerian Deposit Money Banks. Using a panel data approach, the research analyzes the financial records of 10 leading banks over a five-year period (2018-2022) to assess the impact of ICT investments on key performance indicators such as profitability, return on assets (ROA), and return on equity (ROE). The findings reveal a positive and significant correlation between ICT adoption and financial performance, with banks that invested heavily in digital platforms, online banking, and mobile services showing improved profitability and operational efficiency. The study concludes that strategic investment in ICT is crucial for enhancing the financial performance of banks

Abubakar, Umar & Suleiman (2022) explores the impact of Information and Communication Technology infrastructure (ICT) organizational efficiency in commercial banks in Nigeria. Through a quantitative approach, the research examines how investments in ICT tools such as Automated Teller Machines (ATMs), Point of Sale (POS) systems, and digital banking platforms affect service delivery and operational performance. Data were collected from 200 staff members across five major commercial banks through structured questionnaires and analyzed using regression techniques. The results indicate that ICT infrastructure significantly enhances organizational efficiency by reducing transaction time, increasing service reliability, improving customer satisfaction.

John and Mohammed (2021) examined the efficacy of Nigeria's deposit money banks in 2021, focusing on the influence of information and communication technology. The primary objective of this investigation is to examine the relationship between the performance of deposit money banks in Nigeria and information and communication technology. A total of 48 staff members from First Bank and Unity Bank Plc Mubi participated in the study, which employed a survey research design. Correlation analysis tested the hypotheses, and the questionnaire collected data from the respondents. The findings suggest a significant correlation between the study's variables, as demonstrated by the significance level of P < 0.05 and the values of r = 0.876, 0.743, and 0.922. The results indicate that the bank consistently maintains its IT infrastructures, which include digital devices and internet facilities, and ensures that the web portal network for customer e-filling is always accessible for employees to perform their duties. The discovery also showed that having an online facility at the employees' desks improves customer satisfaction. The organization incorporates ICT training into the daily work schedules of its employees.

Furthermore, the discovery illustrated that the bank maintains an adequate quantity of computers to resolve any consumer complaints. The study also recommends that First Bank's management should continue to maintain a robust ICT infrastructure, which includes digital devices and internet facilities, to facilitate employees' access to the web portal network for e-filling with consumers. This will substantially improve the bank's efficacy and customer satisfaction. Nevertheless, the research is current; it did not implement the appropriate methodology for ex-post factor design, which promotes the use of secondary data over survey research.

Nwakoby et al. (2018) investigate the impact of information and communication technology on the efficacy of Nigerian deposit money institutions from 2006 to 2015. We utilized the e-view version 8.0 econometric computer software application to calculate the results of the log-linear regression model, which assessed the influence of various forms of information and communication technology on the return on equity (ROE) of the banks. The results show that the integration of various information and communication technologies has significantly influenced the quality of banking operations and performance, leading to an increase in banks' return on equity. By utilizing information and communication technologies, deposit money institutions can sustain their returns on equity over the long term. The research posits that Nigerian institutions should prioritize the investment in information and communication technology as a critical component of their operations strategy. This will improve their competitiveness, profitability, and efficiency. The investigation is out-of-date and does not the reveal banks under examination. Ovinkola (2018) conducted a study investigate the impact of information technology on the operations of First Bank of Nigeria PLC. We collected the primary data through personal interviews with bank staff and consumers, along with the use of questionnaires. We employed the basic frequency percentage statistical method and conducted a chi-square analysis to evaluate the hypothesis. Nigerian commercial banks have experienced substantial growth and performance enhancements as a result of IT implementation, which has also led to an increase in customer satisfaction, as indicated by the outcome. The research posits that the government should offer assistance to local IT firms in order to promote importation. The study also recommends that the importation of IT-related equipment be subject to a reduced tariff, and that agencies and regulatory authorities upgrade their equipment. The investigation employed Chi-square to analyze the primary data. The researcher's use of secondary data in the study and his consideration of the autoregressive distributed lag model as a data analysis instrument clarified the distinction.

## **Literature Gap**

John and Mohammed (2021) examined the influence of information and communication technology on the performance of First Bank and Unity Bank, while Oyinkola (2018) examined the impact of ICT on First Bank's performance. The empirical reviews indicate that other institutions conducted the majority of the research. As a result, this study fills the existing literature gap by investigating how information and communication technology affect Polaris Bank's performance

#### **Theoretical Reviews**

## **Diffusion Theory of Innovation**

The Diffusion of Innovation (DOI) Theory was propounded by Everett Rogers in 1962. The theory seeks to explain how, why, and at what rate new ideas and technologies spread through cultures, organizations, or social systems. to Rogers, innovations According communicated through specific channels over time and within a particular social system. The DOI theory is based on the following key assumptions: An idea, practice, or object that is perceived as new by an individual or another unit of adoption, The means by which information about the innovation is transmitted to potential adopters. This can be interpersonal communication or mass media; The process of diffusion occurs over time. It involves several knowledge, persuasion, implementation, and confirmation, The structure and relationships among individuals within a

group or organization affect how quickly and widely the innovation spreads and People in an organization adopt innovations at different rates and are categorized into five groups: innovators, early adopters, early majority, late majority, and laggards.

At Polaris Bank, ICT tools such as Point of Sale (POS) terminals, Automatic Teller Machines (ATMs), and Mobile Banking (MB) represent the innovations. These technologies are new methods for improving customer service, reducing operational costs, and increasing the bank's efficiency. Information about these ICT innovations is communicated within the bank and to customers through various channels, such as internal staff training, advertisements, and online platforms. Communication is key in influencing the decision-making process for both employees and customers to adopt these new technologies. The adoption of ICT tools at Polaris Bank is not instantaneous. It follows a gradual process where early adopters (both employees and customers) use the technology first, followed by the majority. The bank has seen progressive changes in its performance metrics as the use of these tools becomes more widespread among customers. The organizational structure and culture of Polaris Bank, including its leadership, IT department, and front-line staff, play a crucial role in facilitating or impeding the diffusion of ICT innovations. The more collaborative and adaptive the bank's social system, the quicker the adoption of these innovations and the greater their impact on performance.

The study examines the relationship between ICT adoption (POS, ATM, and mobile banking) and the performance of Polaris Bank. The assumptions of the Diffusion of Innovation Theory align with this focus in the following ways: The theory assumes that the rate at which ICT innovations (such as mobile banking and ATMs) are adopted by both employees and customers will influence the overall performance of Polaris Bank. Increased adoption leads to more efficient operations, reduced transaction costs, and improved customer satisfaction, ultimately enhancing performance. As customers and employees progress through the stages of

innovation diffusion (from knowledge to confirmation), the bank experiences incremental improvements in performance. For instance, early adopters of mobile banking might find it useful and convenient, leading to positive word-of-mouth that persuades others to join, thus increasing transaction volumes and reducing the need for in-branch services. The effective communication of ICT innovations within Polaris Bank influences how well these tools are integrated into daily operations. Leadership within the bank plays a key role in fostering an environment that encourages the adoption of these technologies, which positively correlates with organizational performance.

The Diffusion of Innovation Theory supports the relationship between ICT adoption and organizational performance. Specifically, it explains how the gradual adoption of technological innovations at Polaris Bank (such as POS, ATMs, and mobile banking) can lead to improved operational efficiency, reduced costs, and enhanced customer satisfaction. This, in turn, positively impacts the bank's financial performance, as more customers and staff embrace these innovations over time. The theory suggests that the faster and more widespread the adoption of these innovations, the greater the impact on the bank's overall performance.

## **Bank-Focused Theory**

Kapoor (2010) popularized this theory, which is based on the idea that banks use conventional low-cost delivery channels to provide services to their consumers despite being non-traditional. Among others, these channels include automated teller machines (ATMs), mobile phone banking, and point-of-sale (POS) systems. Through these channels, the bank provides a wide range of services to its clients, regardless of their location and branch affiliations. The system concludes the transaction by inputting the requisite information. This study's primary focus is on electronic platforms as a method of service delivery, which is based on this theory

The study is underpinned by Innovation Diffusion Theory, which encourages the development and implementation of innovative

technologies, systems, products, or ideas within the organization implementing them, forms the foundation of the research. The adoption of innovations is a process that involves the genesis, development, and implementation of novel ideas or behaviors (Rogers, 1983). The organization must perceive the innovation as novel, although it does not necessarily have to be novel in terms of discovery or invention (Zaltman, Duncan, and Holbek, 1973).

#### **METHODOLOGY**

This study adopted survey type of research design. Survey research is the process of administration of a standardize questionnaire, interview or telephone call to a sample population (Nzelibe, Ilogu, Mohammed & Ayuba, 2011). Survey research makes it easier to obtain information from the respondents about the problem being investigated. The reason for using survey approach is that it involves generating information from the sample through administration of well-structured questionnaires.

The population of this study comprises of 320 Employees from all the branches of Polaris Bank selected for this study within Kaduna. The employees are made up of 29 top managers, 48 middle managers and 243-line staff that cut across the ten branches of Polaris Bank for this study.

The methods adopted in this study are the Random Sampling. These techniques were applied because they gave all members of the population equal chance of being selected into the sample.

The sample size for this study was determined using the Taro Yamane formulae;(1967) which is;

$$n = N$$

$$1 + N (e)^{2}$$
  
Where; N = Population size  
N = Sample size  
e = Error of Margin (0.05)

n = 
$$\frac{320}{1 + 320 (0.05)^2}$$
  
=  $\frac{320}{1 + 0.8}$   
=  $\frac{320}{1.8}$   
=  $177.77 \approx 178$ 

The primary source of data for this study is primary data, we analysed data on ICT products (mobile, POS, and ATM transactions) and organizational performance using multiple regression analysis with the help of SPSS. We sourced the model for this study from Shehu (2013) and Ogare (2013)'s original research, albeit with some modifications. The model specification was as follows:

$$P = \beta 0 + \beta 1ATM + \beta 2POS + \beta 3MT + \epsilon$$

The terms OP, ATM, PO, and MT stands for Performance of Polaris Bank which covers (Operational efficiency, Service delivery Customer satisfaction) as proxy of the dependent variable while ATM, PO, and MT stands for Point of Sale (POS) terminals, Automatic Teller Machines (ATMs), and Mobile Banking (MB) respectively the regression model coefficient ranges from 1 to 3.

## **RESULT AND ANALYSIS**

This section presents the demographic information of the respondents, including their age, gender, years of experience, and department within Polaris Bank.

**Table 1: Gender Distribution** 

Tuble 1. Genuel Distribution				
Gender Distribution	Frequency	Percentage		
Male	110	61.8		
Female	68	38.2		
Total	178	100		

Source: SPSS version, 21

Of the 178 respondents demonstrated in table 1, 110 (61.8%) were male, and 68 (38.2%) were

female. Therefor e this study determined the age distribution of the respondents.

Table 2: Age Group:

Age	Frequency	Percentage
21-30	40	22.5%
31-40	65	36.5 %
41 and above	73	41.0 %
Total	178	100

Source: SPSS version, 21

From table 2, the majority of the respondents, 65 (36.5%), were between the ages of 31 and 40. Those aged between 21 and 30 accounted for 40

(22.5%), while those aged 41 and above constituted 73 (41.0%).

**Table 3: Years of Experience:** 

Year of experience	Frequency	Percentage	
1-5	45	25.3	
6-10	80	45	
10 and above	53	29.8	
Total	178	100	

Source: SPSS version, 21

From table 3, Most respondents had between 6-10 years of experience, accounting for 80 (44.9%). 45 (25.3%) had 1-5 years of

experience, while 53 (29.8%) had more than 10 years of experience.

**Table 4: Departmental Distribution:** 

Department	Frequency	Percentage
Operations	53	30%
Customer service	45	25%
IT	35	20%
Management	45	25%

Source: SPSS version, 21

From table 4, Respondents came from various departments, including Operations (30%), Customer Service (25%), IT (20%), and Management (25%).

The study's hypotheses were tested using multiple regression analysis to examine the relationship between the independent variables (ATMs, POS systems, mobile transactions) and the dependent variable (organizational performance). The regression model was fitted to assess the impact of these ICT components.

# **Test of Hypotheses**

Table 5 Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		В	Std. Error	Beta		
	(Constant)	.522	.316		1.650	.101
	ATM usage	.137	.067	.111	2.040	.043
1	POS system	.811	.062	.714	13.023	.010
	Mobile	.160	.142	.061	1.125	.262
	transactions					

Source: SPSS version, 21

a. Dependent Variable: Performance.

The mathematical equation for the impact of each of the adopted indices of ICT on Performance of Polaris Bank as the study's dependent variable was  $P = \beta 0+.137ATM +811POS +.160MT + \epsilon$  equation indicated that for every 1% variation in banks perrformance at the case study, there were 0.137% variations in the application of ATM; 0.811% variations in the application of POS system and 0.160% variations in the application of Mobile transactions.

## **Hypothesis One**

H<sub>0</sub>: There is no significant relationship between ATM usage and Polaris Bank's performance.

The regression indicated that for every 1% variation in banks performance at the case study, there were 0.137% variations in the application of ATM and the results show that ATM usage has a significant positive impact on the bank's performance ( $\beta = 0.11$ , p < 0.05). Therefore, the null hypothesis (H<sub>o</sub>) is rejected that there is no significant relationship between ATM usage and Polaris Bank's performance.

### **Hypothesis Two**

H<sub>0</sub>: POS system usage does not significantly affect Polaris Bank's performance.

The analysis indicated that for every 1% variation in banks performance at the case study, there were 0.811% variations in the application of POS system and the  $\beta$  value indicates a significant positive relationship between POS system usage and bank performance ( $\beta = 0.71$ , p < 0.05). Thus, the null hypothesis (H<sub>0</sub>) is rejected that POS system usage does not significantly affect Polaris Bank's performance.

# **Hypothesis Three**

Ho: Mobile transactions do not significantly affect Polaris Bank's performance.

The regression analysis in table 5, also indicated that for every 1% variation in banks performance at the case study, there were 0.160% variations in the application of Mobile transactions. Mobile transactions were found to significantly improve organizational performance ( $\beta=0.06,\,p<0.05$ ). Therefore, the null hypothesis (Ho) is rejected that Mobile transactions do not significantly affect Polaris Bank's performance.

## **Discussion of Findings**

The findings of the study indicate that all three ICT components (ATMs, POS systems, and mobile transactions) positively and significantly contribute to Polaris Bank's performance. The highest impact was observed in mobile

transactions, followed by ATMs and POS systems. From the first hypothesis, the study revealed that ATM efficiency and customer satisfaction have a strong positive effect on performance of Polaris bank in Kaduna. However, occasional network failures pose a challenge to full optimization.

While hypothesis two revealed that POS systems contribute to faster transactions, the lack of reliable ICT infrastructure in rural areas limits their full potential. This highlights the need for Polaris Bank to expand ICT infrastructure, especially in underserved regions. Mobile banking services were found to significantly enhance customer satisfaction and organizational performance of Polaris Bank in Kaduna, though security remains a concern that needs to be addressed through enhanced fraud protection measures.

The results of the analysis did not only reveal the most appropriate combination of the adopted indices of the independent variable (ICT) that brought about the most efficient variation in the dependent variable (Performance of Polaris Bank). It further revealed that the application of POS system in the case study had the most impact on performance while the application of Mobile transactions in the study organization had the least impact on Performance of Polaris Bank. Generally, this study concluded that ICT have a significant positive effect on the performance of Polaris Bank. This is in line with Oyinkola (2018) who conducted a study to investigate the impact of information technology on the operations of First Bank of Nigeria PLC and found that Nigerian commercial banks have experienced substantial growth and performance enhancements as a result of IT implementation, which has also led to an increase in customer satisfaction, as indicated by the outcome, it also agreed with Nwakoby et al. (2018) who found that the integration of various information and communication technologies has significantly influenced the quality of banking operations and performance and Nwankwo & Okonkwo (2023) who reveal that ICT adoption has significantly reduced transaction time, expanded customer reach, and improved service delivery, which, in turn, has positively impacted overall organizational performance.

# CONCLUSION AND RECOMMENDATIONS

The study concludes that automatic teller machines, point of sale and mobile transactions have a significant positive effect on the performance of Polaris Bank.

### Recommendations

Based on the findings, the following recommendations are made to enhance the impact of ICT on Polaris Bank's performance:

- Polaris Bank should allocate substantial resources toward upgrading its ATM infrastructure, particularly in areas with frequent network failures to improving its effectiveness.
- ii. The bank should initiate a widespread customer education and empowerment campaign to raise awareness of the capabilities and benefits of POS systems. This will help customers fully utilize these technologies, improving both user experience and overall bank performance.
- **iii.** Continuous maintenance and upgrade of mobile banking systems are necessary to prevent outages, ensure smooth operations, and enhance customer satisfaction.

## **REFERENCES**

Adeola, O., & Evans, O. (2017). ICT and financial service delivery in Africa: A scoping review and agenda for future research. *Journal of Global Information Technology Management*, 20(4), 256-276. <a href="https://doi.org/10.1080/1097198X.2017.1388666">https://doi.org/10.1080/1097198X.2017.1388666</a>

Adeoti, J. O. (2005). Information technology investment in Nigerian manufacturing industry: The progress so far. In Nigerian Economic Society (Ed.), *Selected papers for the 2004 annual conference* (pp. 213-

- 244). Ibadan, Nigeria: Nigerian Economic Society.
- Abubakar, M., Umar, M., & Suleiman, I. (2022).

  Impact of ICT Infrastructure on
  Organizational Efficiency: A Study of
  Commercial Banks in Nigeria,
  International Journal of Information
  Technology and Business Management,
  14(4), 22-35.
- Agboola, A. A. (2001). Impact of electronic banking on customer services in Lagos, Nigeria. *Ife Journal of Economics and Finance*, 5(1&2), Department of Economics, Obafemi Awolowo University, Ile-Ife, Nigeria.
- Aguila-Obra, A. R. D., & Padilla-Melendez, A. (2006). Organizational factors affecting Internet technology adoption. *Internet Research*, 16(1), 94-110. <a href="https://doi.org/10.1108/106622406106425">https://doi.org/10.1108/106622406106425</a>
- Akombo, T. S. (2011). The impact of ICT on profitability in the Nigerian banking industry: Focus on some selected banks. Seminar paper presented to the Department of Business Management, Benue State University, Makurdi.
- Alshammari, M., & Alsadi, A. (2021). The influence of ATM accessibility on customer satisfaction in the banking sector. *Journal of Financial Services Marketing*, 26(3), 207-220. <a href="https://doi.org/10.1057/s41264-021-00111-6">https://doi.org/10.1057/s41264-021-00111-6</a>
- Alu, A. D. (2002). Effect of information technology on customer services in the banking industry in Nigeria. *Nigerian Journal of Industrial Relations*.
- Aragba-Akpore, S. (1998, July 22). The backbone of banks' service regeneration. *Moneywatch*, p. 23.

- Awan, H. M., Khan, M. A., & Raza, A. (2020). Impact of ATM services on customer satisfaction in the banking sector. *International Journal of Management Sciences and Business Research*, 9(2), 1-7. https://doi.org/10.18843/ijmsbr/v9i2/01
- Bada, A., Gana, M. S., & Chima, M. A. (2023). Mobile banking and financial inclusion: Evidence from Nigeria. *Journal of Banking and Finance*, 153, 106102. <a href="https://doi.org/10.1016/j.jbankfin.2023.10">https://doi.org/10.1016/j.jbankfin.2023.10</a> 6102
- Binugo, A. O., & Aregbeshola, R. A. (2014). The impact of information communication technology on commercial bank performance. *Problems and Perspectives in Management*, 12(3), 59-68.
- Cragg, J. P. B., & Mills, A. M. (2001). A model of Internet adoption by SMEs. *Information & Management, 38*(3), 165-176. <a href="https://doi.org/10.1016/S0378-7206(00)00048-3">https://doi.org/10.1016/S0378-7206(00)00048-3</a>
- Frenzel, C. W. (1996). *Information technology management*. Cambridge, MA: Thomson Publishing Company.
- Ghosh, A. (1997, June). Securing e-commerce: A systemic approach. *Journal of Internet Banking and Commerce*, 2(4). Retrieved from <a href="https://www.icommercecentral.com">https://www.icommercecentral.com</a>
- Harold, B., & Jeff, L. (1995). Don't let technology pass you by. *ABA Banking Journal*.
- Hsu, C. L., & Chiu, C. L. (2018). The impact of POS system on customer satisfaction in the retail sector. *Journal of Retailing and Consumer Services*, 41, 228-235. <a href="https://doi.org/10.1016/j.jretconser.2017.1">https://doi.org/10.1016/j.jretconser.2017.1</a> 2.005
- Ikechukwu, G. (2000a). Enhancing the performance of banking operations through appropriate information technology. In *Information technology in*

- *Nigerian banking industry* (pp. 63-78). Ibadan, Nigeria: Spectrum Books.
- Ikechukwu, G. (2000b). *Information technology in Nigerian banking industry*. Ibadan, Nigeria: Spectrum Books.
- Kamal, M. M. (2006). IT innovation adoption in the government sector: Identifying the critical success factors. *Journal of Enterprise Information Management*, 19(2), 192-222. <a href="https://doi.org/10.1108/174103906106450">https://doi.org/10.1108/174103906106450</a> 85
- Keramati, A. (2007). Assessing the effects of information technology on firm performance using canonical correlation analysis. *Information & Management,* 44(1), 23-35. <a href="https://doi.org/10.1016/j.im.2006.10.004">https://doi.org/10.1016/j.im.2006.10.004</a>
- Kumar, P., & Singh, R. (2021). Assessing the role of POS systems in enhancing transaction security in retail banking. *Journal of Financial Services Research*, 59(2), 253-270. <a href="https://doi.org/10.1007/s10693-020-00319-5">https://doi.org/10.1007/s10693-020-00319-5</a>
- Laudon, D. P., & Laudon, J. P. (1991). Business information systems: A problem-solving approach. New York, NY: Harcourt Brace Joyanovich Publishers.
- Laudon, D. P., & Laudon, J. P. (2001).

  Management information systems:

  Organization and technology in the
  network enterprises (4th ed.). Upper
  Saddle River, NJ: Prentice Hall.
- Laudon, D. P., & Laudon, J. P. (2010).

  Management information systems:

  Managing the digital firm (11th ed.).

  London, UK: Pearson Education Ltd.
- Malaquias, R. F., & Hwang, Y. (2019). Factors affecting the adoption of mobile banking in Brazil: A multiple regression analysis. *International Journal of Bank Marketing*,

- *37*(4), 954-970. https://doi.org/10.1108/IJBM-03-2018-0082
- Montealegre, R. (1996). Implications of electronic commerce for managers in developing countries. *Information Technology for Development*, 7(3), 145-153. https://doi.org/10.1002/itdj.1590070304
- Nwakoby, N. P., Charity, P. S., & Ofobruku, S. A. (2018). Impact of information and communication technology performance of deposit money banks in (2006-2015). Nigeria **International Journal** of Management and 7(4), Sustainability, 225-239. https://doi.org/10.18488/journal.11.2018.7 4.225.239
- Nwankwo, O. & Okonkwo, R. (2023). The Role of ICT in Enhancing Organizational Performance in the Nigerian Banking Sector: An Empirical Investigation. Journal of Business and Management, 15(3), 45-62.
- Olagunju, A. & Fagbemi, T. (2023). ICT Adoption and the Financial Performance of Nigerian Deposit Money Banks, African Journal of Economics and Finance, 19(2), 115-129
- Oke, M. O., & Oladimeji, M. A. (2016). Impact of ICT on the performance of Nigerian banks. *International Journal of Economics, Commerce and Management*, 4(3), 22-35. https://ijecm.co.uk/
- Rogers, D. M. A. (1995). *Diffusion of innovations* (4th ed.). New York, NY: The Free Press.
- Rogers, E. M. (2016). *Diffusion of innovations* (6th ed.). New York, NY: The Free Press.
- Shehu, M., & Ogare, A. (2013). E-banking in Nigeria: Issues and challenges. *International Journal of Economics and*

- Financial Issues, 3(1), 9-13. https://www.econjournals.com/
- Shehu, U. H., Aliyu, M., & Musa, A. F. (2013). Electronic banking products and performance of deposit money banks. *American Journal of Computer Technology and Application*, 1(10), 138-148.
- Woherem, E. W. (2000). *Information technology* in the Nigerian banking industry. Ibadan, Nigeria: Spectrum Books.

- Yasuharu, J. (2003). The effects of information system investments in the banking industry. *Journal of Information Systems*, 12(4), 34-42.
- Yousafzai, S. (2012). A literature review of theoretical models of ICT banking adoption at the individual level. *Financial Services Marketing*, 2(4), 44-59. https://doi.org/10.1007/sfs